INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF PSYCHOLOGY

FOUNDATION COURSE

2023 BATCH

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF PSYCHOLOGY

2023 Batch

PRE-ASSESSMENT TEST- FOUNDATION COURSE

Answer The Following Questions. **(5x2=10)**

1. Give the meaning of Psychology.
2. Who is a Psychologist.
3. Mention any two fields in the field of Psychology.
4. List any two Importance of Psychology.
5. Who is the father of psychology.

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF PSYCHOLOGY

FOUNDATION COURSE

MARKS OBTAINED IN PRE-ASSESSMENT TEST

Time: 1hr **Max. Marks: 10**

SL.No	NAME	MARKS OBTAINED
1.	Winston G	8
2.	Manish J.R	10
3.	Kavya	6
4.	Bhavana	6
5.	Joshua John	5
6.	Anitha Kumari S	8
7.	Faiza Fathima Sharif	9
8.	Uzma Zainab	9
9.	Harshith Sharma	8
10.	Ancy Mol	8
11.	Syeda Ruheen	9
12.	Syeda Roshni	9
13.	Pavan	8
14.	Afrina Vincent	10

Signature of Faculty

Signature of HOD

HEAD OF THE DEPARTMENT
Department of Humanities
INDIAN ACADEMY DEGREE COLLEGE
Autonomous
Hennur Main Road, Bangalore-560043

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF PSYCHOLOGY

FOUNDATION COURSE

BA Ist Year (2023 BATCH)

Title of the Course: PSYCHOLOGY

Resource Person: Ms. Maria Aquilla

Duration: 6 Hours

Aims:

- Encourage students to develop the necessary skills for studying psychology.
- Introduces students to the areas of psychology.

Objectives:

- Understand the basic meaning of psychology.
- Understand specialized areas in the field of psychology
- To make the students aware of the concept of counseling and its influence in the present trend.

Syllabus

- Meaning of Psychology
- Branches of Psychology
- Professions involved in Psychology
- Characteristics of a Psychologist.
- Importance of Psychology
- Stress
- Types of Stress
- Causes of Stress

CONTENT

INTRODUCTION

Introduction to Psychology is a journey through all of the major **psychological** concepts and principles. The knowledge gained from this **course** will allow students to critically evaluate **psychological** research and have an in-depth understanding of human thought and behavior.

MEANING

Psychology is the study of people's behavior, performance, and mental operations. It also refers to the application of the knowledge, which can be used to understand events, treat mental health issues, and improve education, employment, and relationships. The subject lies at the intersection of applied, educational, and theoretical science.

BRANCHES OF PSYCHOLOGY

- Abnormal psychology
- Behavioral psychology
- Biopsychology
- Clinical psychology
- Cognitive psychology
- Comparative psychology
- Counseling psychology
- Cross-cultural psychology
- Developmental psychology
- Educational psychology
- Experimental psychology
- Forensic psychology
- Health psychology
- Industrial-organizational psychology
- Personality psychology
- School psychology
- Social psychology

- Sports psychology

PROFESSIONS IN THE FIELD PF PSYCHOLOGY

Clinical Psychologist

Clinical psychologists assess, diagnose, and treat clients struggling with psychological disorders. These professionals typically work in hospital settings, mental health clinics, or private practices.

Counselor

Counselors help people with a wide variety of problems, including marriage, family, emotional, and substance use issues. While requirements vary, almost all states require at least a master's degree in order to become a licensed counselor. Typical work settings include schools, colleges and universities, hospitals, and mental health clinics.

Forensic or Criminal Psychologist

Forensic psychologists apply psychology to the fields of criminal investigation and law. This has rapidly become one of the hottest psychology careers thanks to numerous portrayals in popular movies, television programs, and books.

Industrial-Organizational Psychologist

Industrial-organizational psychologists (also called I/O or I-O psychologists) focus on workplace behavior, often using psychological principles to increase worker productivity and select employees that are best suited for particular jobs. There are several different specialty areas within industrial-organizational psychology.

CHARACTERISTICS OF A PSYCHOLOGIST

1. Sympathy
2. Trustworthy
3. Listening
4. Communication

IMPORTANCE OF PSYCHOLOGY

- **The building of relationships:** Psychology makes it easier to live with others by understanding them more and working with their behavior.

- **Improving communication:** A greater understanding of how humans think and behave will help people communicate better. They will be more effective in understanding what a person really means by gestures and actions.
- **Building self-confidence:** By understanding more about oneself and your personality, to gain more self-confidence. You will learn more about your weaknesses and can build on them.
- **Enriching careers:** You will be able to understand your coworkers more and stand a better chance of building friendships. It helps to deal with their actions to enrich your career.

STRESS

Stress is our psychological and physiological reaction to an event or condition that is considered a threat or challenge.

TYPES OS STRESS

1. Acute Stress
2. Episodic Acute Stress
3. Chronic Stress

CAUSES OF STRESS

1. Job related causes of stress
2. Death of a loved one
3. Financial causes of stress
4. Frustration and Aggression
5. Family

Teaching and Evaluation:

- Lecture and Class Discussion
- Question and Answer

Outcome:

- Understanding the theoretical practical knowledge of Psychology in everyday life
- Acquaint students with different disciplines of Psychology
- To apply psychological knowledge to a work & personal environment.

- **Improving communication:** A greater understanding of how humans think and behave will help people communicate better. They will be more effective in understanding what a person really means by gestures and actions.
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INDIAN ACADEMY
GROUP OF INSTITUTIONS

Hennur Cross, Kalyan Nagar, St. Thomas Town,
Bangalore-560 043, India.
Tel : +91 80-67458900 Mob: 9901110757 / 9880105678
Telefax : +91 80-67458908

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF BUSINESS ADMINISTRATION

IADC017– BRIDGE COURSE DETAILS

Foundation Course 2023 Batch

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course 2023-24

1st semester BBA A&B and Business Analytics

Title of the Course: M21 DC 1.1 Management Principles and Practice

Resource Person: Ms. Deepa S

Duration: 5 Hours

Aims:

- The primary aim of the management process for students is to help them achieve academic success. This involves setting clear educational goals, planning study schedules, and organizing study materials effectively to optimize learning and performance.
- Effective time management is a crucial aspect of the management process for students. It aims to help students allocate their time wisely between academic activities, extracurricular pursuits, and personal life.
- The management process for students also focuses on fostering personal growth and development.

Objectives:

- Understanding the concepts for setting clear academic goals, providing resources and support to achieve those goals, and monitoring progress regularly.
- It aims to foster personal growth, critical thinking, problem-solving skills, and the ability to adapt to changing circumstances.

- It involves optimizing the use of time, materials, and facilities to enhance productivity and reduce wastage. By efficiently allocating resources, educational institutions can ensure that students have access to the necessary tools and support for their learning journey.

Content

- Planning
- Organizing
- Controlling
- Coordinating

Teaching and Evaluation:

- The above content is taught by using tools like PPT/Word, videos, chalk and talk, case studies and examples.
- After completion of the 5 hrs students will be evaluated with an objective type of questions.

Outcome:

- The students acquire a comprehensive understanding of the subjects they study. This involves delivering well-structured and effective educational content, encouraging active participation in class.
- It encourages them to analyze information critically, evaluate different perspectives, and propose innovative solutions to complex problems. This outcome helps students become independent thinkers and equips them to handle challenges in various aspects of their lives.
- The Students can development of effective communication and collaboration skills.
- The faculty can also focuses on nurturing students' personal and social development.

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course - Post Assessment Test Score

Subject: M21 DC 1.1 Management Principles andf Practice **Date: 01/08/2023**

I sem BBA A&B & BA **Max Marks: 15**

SL. No.	Name	Score
1	PRUTHVI V	7
2	TAM PINYA	7
3	VIDYA SAGAR GOWDA	7
4	JAYSREE	10
5	AISHWARYA K	8
6	PENUEL MOCHAHARI	10
7	MIR HAMMAAD HUSSAIN	8
8	SHREYAS	4
9	EMMANUEL	9
10	AUGUSTIN BALRAJ	7
11	AHMED SHARIEF	7
12	AKSHATHA	3
13	LAKSHMI PRASAD CR	8
14	TENISON THONGAM	10
15	AFNAAN AHMED	9
16	ANTONY REZON M. J	11
17	SYED ALI	8
18	BHARATH N SUTHAR	10
19	RAHUL KUMAR	12
20	JIM ELLIOT. S	12
21	BHOOMIKA SANGAMITHRE M	6
22	DIVYA S	9
23	GORAKNATH M	9
24	DILEEPAN.R	5
25	A. BENNY	11
26	LINTON RAJESH R	9
27	JOHN ABRAHAM	5
28	MANASRI. R	8
29	RAKSHITH. A	9
30	MANISH	9
31	DAVID	6
32	ABHISHA.B	6
33	VAISHNAVI R	8
34	MUKESH.C	9
35	MOHAMMAD SAQLAIN	12
36	M. SINDHU	7
37	CHALLA NIDHI KRISHNA	9
38	AISHWARYA M	9
39	V.PRADEEP KUMAR	8

40	MOHAMMED TOUSIF	7
41	DURGA AGREE. P	8
42	SHAM. V	9
43	MAHALAKSHMI. K	9
44	HUDA QUBEEN	6
45	SM.BRINDASHREE	9
46	AFRID ULLA KHAN	7
47	KAVYA B	8
48	ARHAM ABBAS SAIT	7
49	NARMADHA.S	9
50	USHA P	8
51	JASMINE MARY	8
52	S.MUSLAN ANJUM	7
53	MOHAMMAD UMMAR N	9
54	NITHIN S	9
55	ABHINAYA.R	7
56	MOHAMMED EAHAB	9
57	BHOOMIKA.B	6
58	REHANA BANU	6
59	DIVYANKA SHARMA	6
60	SANDHYA	9
61	SHARON	10
62	MITHUKULLA THIRUMALA NARAYANA TEJA	9
63	MOHAMMED TOUFEEQ	9
64	SYED MOHAMMED HASSAN	7
65	NATANIA SHANTAY	9
66	K PRAJWAL	10
67	KASHIFA	7
68	DIVYA V	8
69	MOHAMMED ZAID ALI KHAN	7
70	MOHAMMED AFREED	7
71	MELVIN ABISHEK	10
72	GEDDAM AKSHAY BABU	9
73	ASHOK.P	9
74	NITASH KUMAR.J	10

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration
Foundation Course – Post Assessment Test, 01st August 2023

I semester BBA A&B, BA **Faculty In-charge: Ms. Deepa S**
Subject: Management Principles and Practice **Max Marks: 15**

1. Which of the following is NOT a characteristic of an effective planning process in management?

   A) Flexibility to adapt to changing circumstances. B) Precise and detailed planning for all aspects of the organization. C) Involvement of key stakeholders in the planning process. D) Focus on both short-term and long-term goals.

2. Which of the following is a key difference between leadership and management?

   A) Leadership involves guiding the organization's overall direction, while management focuses on day-to-day operations. B) Management is about inspiring and motivating employees, while leadership is about planning and organizing. C) Leaders are appointed based on their expertise, while managers are chosen based on their interpersonal skills. D) Leadership is a position within the organizational hierarchy, while management is a set of qualities exhibited by individuals.

3. Who is known as the "Father of Scientific Management"?

   A) Max Weber B) Frederick Taylor C) Henri Fayol D) Elton Mayo

4. In the context of planning, what does the term "S.M.A.R.T. goals" refer to?

   A) Goals that are Specific, Measurable, Achievable, Relevant, and Time-bound. B) Goals that are Secretive, Measurable, Aggressive, Realistic, and Timely. C) Goals that are Specific, Measurable, Attainable, Resource-based, and Time-bound. D) Goals that are Strategic, Measurable, Adaptive, Reliable, and Tangible.

5. What does the term "Matrix Organization" refer to?

A) An organizational structure that is hierarchical and rigid. B) A management approach that emphasizes teamwork and collaboration. C) A structure where employees report to multiple managers based on different projects or tasks. D) A technique used to allocate resources efficiently among different departments.

6. Which of the following best defines the term "Talent Acquisition" in the context of staffing?

   A) The process of recruiting and selecting employees to fill specific job vacancies. B) The ongoing efforts to retain and develop the existing workforce. C) The identification and development of high-potential employees for future leadership roles. D) The strategic planning and forecasting of the organization's future staffing needs.

7. What is the primary purpose of conducting a "Behavioral Interview" during the hiring process?

   A) To assess a candidate's specific job-related skills and qualifications. B) To evaluate a candidate's overall personality and character traits. C) To understand how a candidate has handled past work-related situations and challenges. D) To determine a candidate's long-term career aspirations and goals.

8. Which of the following staffing strategies involves hiring employees from external sources to fill vacant positions?

   A) Succession planning B) Internal recruitment C) Job rotation D) External recruitment

9. In the context of organizational communication, which channel is characterized by the free flow of information, ideas, and feedback among all levels of employees?

   A) Downward communication B) Upward communication C) Horizontal communication D) Diagonal communication

10. Which of the following is a key characteristic of a well-communicated organizational vision?

    A) It is ambiguous and open to interpretation by different employees. B) It focuses solely on short-term goals and objectives. C) It is consistent and

aligns with the organization's values and goals. D) It is exclusively formulated by top-level management without input from others.

11. Which control mechanism involves comparing actual performance against predetermined standards to identify deviations and take corrective action?

A) Concurrent control B) Feedforward control C) Feedback control D) Concurrent control

12. Which of the following best defines "coordination" in the context of the management process?

A) Monitoring and evaluating employee performance. B) Assigning tasks and responsibilities to specific individuals. C) Ensuring all departments and activities work together harmoniously to achieve common goals. D) Implementing a centralized decision-making process.

13. Which communication channel is most suitable for delivering sensitive or confidential information within an organization?

A) Face-to-face communication B) Email communication C) Telephone communication D) Social media communication

14. Which communication style is characterized by using complex language and technical jargon, often making it difficult for the receiver to understand the message?

A) Upward communication B) Formal communication C) Downward communication D) Technical communication

15. Which of the following best describes the concept of "span of control" in organizational management?

A) The number of employees an organization can hire within a given budget. B) The level of authority a manager has over their subordinates. C) The number of subordinates a manager can effectively supervise. D) The distance between various departments within an organization.

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course - Pre Screening Test Score

Subject: M21 DC 1.1 Management Principles and Practice **Date: 25/07/2023**

I sem BBA A&B & BA **Max Marks: 15**

SL. No.	Name	Score
1	SYED ALI	11
2	MIR HAMMAAD HUSSAIN	8
3	PRUTHVI V	10
4	V.PRADEEP KUMAR	7
5	JAYSREE	10
6	MUKESH.C	8
7	DIVYA V	12
8	MUKARAM AHMED	10
9	EMMANUEL	8
10	AISHWARYA K	9
11	M. SINDHU	6
12	BHARATH N SUTHAR	8
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14	ARHAM ABBAS SAIT	11
15	JOHN ABRAHAM	4
16	MAHALAKSHMI. K	4
17	AFNAAN AHMED	10
18	MOHD KABEER	9
19	DAVID LIGODI	9
20	UMME AZRA	12
21	YOUNUS ALI KHAN	10
22	MOHAMMAD SAQLAIN	10
23	NITHIN S	12
24	REHANA BANU	11
25	MOHAMMAD UMMAR N	12
26	GEETHANJALI	11
27	SHARON	9
28	LAKSHMI PRASAD CR	10
29	MOHAMMED TOUSIF	12
30	CHALLA.NIDHI KRISHNA	8
31	AKSHATHA	8
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35	TENISON THONGAM	12
36	AHMED SHARIEF	5
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41	S MUSKAN ANJUM	10
42	SM BRINDASHREE	10
43	MD ZAID ALI KHAN	11
44	TAM PINYA	10
45	A.BENNY	8
46	MOHAMMED AFREED	11
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48	DURGA SHREE	10
49	KAVYA B	7
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53	MANASRI.R	12
54	ABHINAYA.R	8
55	MELVIN	4
56	AFRID ULLA KHAN	6
57	SANDHYA	10
58	NARMADHA.S	7
59	JASMINE MARY	8
60	USHA.P	9
61	ASHOK	10
62	NITASH KUMAR J	8
63	LINTON RAJESH R	9
64	RAKSHITH.A	9
65	MANISH	9
66	GEDDAM AKSHAY BABU	8
67	K PRAJWAL	11
68	DIVYA S	9
69	SYED MOHAMMED HASSAN	8
70	MOHAMMED EAHAB	9
71	HUDA QUBEEN	12
72	ARBIN BANU	9
73	SHREYAS S RAJANALKAR	2
74	DILEEPAN R	9

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration
Foundation Course – Pre Screening Test, 25th July 2023

I semester BBA A&B & BA **Faculty In-charge: Ms. Deepa S**
Subject: Management Principles and Practice **Max Marks: 15**

1. What is the primary purpose of management?
   a) Maximizing profits b) Achieving organizational goals c) Increasing employee satisfaction d) Implementing new technologies

2. Which of the following is not a basic function of management?
   a) Planning b) Organizing c) Delegating d) Controlling

3. What distinguishes leadership from management?
   a) Leadership focuses on setting goals, while management focuses on achieving them. b) Leadership involves decision-making, while management involves delegation. c) Leadership involves guiding and motivating others, while management involves administering resources. d) Leadership is a formal position, while management is an informal role.

4. The process of identifying organizational goals and determining the best way to achieve them is known as:
   a) Controlling b) Organizing c) Leading d) Planning

5. Why is effective communication crucial in management?
   a) It fosters competition among employees. b) It reduces employee turnover. c) It improves decision-making and coordination. d) It eliminates the need for delegation.

6. Which management principle emphasizes that each employee should report to only one supervisor?
   a) Unity of direction b) Scalar chain c) Division of labor d) Span of control

7. The process of assigning tasks and authority to employees is called:
   a) Planning b) Organizing c) Controlling d) Directing

8. Which analysis is used to identify an organization's internal strengths and weaknesses and external opportunities and threats?
   a) PESTLE analysis b) SWOT analysis c) Gap analysis d) Risk analysis

9. The process of resolving disputes or disagreements between employees is known as:
   a) Delegation b) Conflict management c) Span of control d) Centralization

10. Which motivational theory suggests that individuals are motivated by a hierarchy of needs, with basic physiological needs being the most fundamental?
    a) Theory X and Theory Y b) Expectancy theory c) Maslow's hierarchy of needs d) Two-factor theory

11. What does an organization's culture represent?
    a) The formal structure of the organization b) The skills and expertise of its employees c) The shared values, beliefs, and norms of its members d) The financial performance of the organization

12. The process of analyzing various alternatives and choosing the best course of action is known as:
    a) Planning b) Controlling c) Organizing d) Decision-making

13. What is the advantage of a decentralized organizational structure?
    a) It allows for faster decision-making. b) It creates a rigid hierarchy within the organization. c) It centralizes authority and control. d) It reduces employee empowerment.

14. How does technology influence modern management practices?
    a) It decreases the need for effective communication. b) It streamlines decision-making processes. c) It reduces the need for employee motivation. d) It eliminates the need for organizational planning.

15. What is the role of feedback in the control function of management?
    a) It helps in creating organizational goals. b) It provides information about employee salaries. c) It measures actual performance against set standards. d) It determines the organization's market share.

EXCEL.

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Admission No	User Name	Batch	24/7	25/7	26/7	27/7	27/7		
23UG0322	AISHWARYA K	BBA - A 2023	1	2	3	4	5		
23UG0345	AISHWARYA M	BBA - A 2023	1	2	A	3	4		
23UG0316	DILEEPAN R	BBA - A 2023	1	2	A	3	4		
23UG0351	GEETHANJALI N	BBA - A 2023	1	2	3	4	5		
23UG0335	GORAKNATH M	BBA - A 2023	1	2	3	4	5		
23UG0343	K PRAJWAL	BBA - A 2023	1	A	2	3	4		
23UG0312	LINTON RAJESH R	BBA - A 2023	1	2	3	4	5		
23UG0321	M SINDHU	BBA - A 2023	1	2	A	A	A		
23UG0308	MANASRI R	BBA - A 2023	1	2	3	4	5		
23UG0310	MOHAMMAD TOUFEEQ	BBA - A 2023	1	A	2	3	A		
23UG0319	NARMADHA S	BBA - A 2023	1	2	3	4	5		
23UG0332	NITHIN S	BBA - A 2023	1	2	3	4	5		
23UG0326	RAKSHITH A	BBA - A 2023	1	2	3	4	5		
23UG0346	SHARATH KUMAR S	BBA - A 2023	A	A	A	A	A		
23UG0330	USHA P	BBA - A 2023	1	2	3	A	4		
23UG0307	VAISHNAVI R	BBA - A 2023	1	2	3	A	4		
	VIDHYA SAGAR GOWDA. N	BBA - A 2023	1	A	2	3	4		
23UG0413	DURGA SHREE P	BBA INDUSTRY	1	2	A	A	A		
23UG0419	BHOOMIKA.B	BBA Internati	1	2	3	4	5		
23UG0313	AFRID ULLA KHAN	BBA - A 2023	1	2	3	4	5		
23UG0354	ARBIN BANU	BBA - A 2023	1	2	3	A	A		
23UG0357	ASHOK P	BBA - A 2023	1	2	3	4	5		
23UG0329	HUDA QUBEEN	BBA - A 2023	1	2	3	4	5		
23UG0333	MIR HAMMAAD HUSSAIN	BBA - A 2023	1	2	3	4	5		
23UG0314	MOHAMMED EAHAB	BBA - A 2023	1	2	3	4	5		
23UG0317	MOHAMMED SAQLAIN	BBA - A 2023	1	2	3	4	A		
23UG0334	MOHAMMED TOUSIF	BBA - A 2023	1	2	3	4	A		
23UG0356	MOHD KABEER	BBA - A 2023	1	2	3	4	5		
23UG0359	MUKARAM AHMED	BBA - A 2023	1	2	3	4	5		
23UG0344	NITASH KUMAR J	BBA - A 2023	1	2	3	4			
23UG0315	S MUSKAN ANJUM	BBA - A 2023	1	2	3	4	5		
23UG0324	SHAM. V	BBA - A 2023	1	A	2	3	4		
23UG0306	UMME AZRA	BBA - A 2023	1	2	3	4	5		
23UG0363	YOUNUS ALI KHAN	BBA - A 2023	1	2	A	3	4		
23UG0394	BHARATH N SUTHAR	BBA BUSINESS	1	2	3	4	5		
23UG0397	MOHAMMED AFREED	BBA BUSINESS	1	2	3	4	5		
23UG0395	SHRISTI RAJ	BBA BUSINESS	A	A	A	A	A		
23UG0393	SYED MOHAMMED HASSAN	BBA BUSINESS	1	2	3	4	5		
23UG0418	DIVYANKA SHARMA	BBA INDUSTRY	JOINED LATE						
23UG0416	MOHAMMED ZAID ALI KHAN	BBA INDUSTRY	1	2	3	A	A		
23UG0414	RAHUL KUMAR	BBA INDUSTRY	1	A	2	A	A		
23UG0339	A BENNY	BBA - A 2023	1	2	3	4	5		
23UG0305	ABHINAYA R	BBA - A 2023	1	2	3	4	5		
23UG0318	AHMED SHARIEF	BBA - A 2023	1	A	2	3	4		

			24/7	25/7	26/7	27/7	27/7		
23UG0320	AKSHATHA S	BBA - A 2023	1	2	A	3	4		
23UG0348	ANTONY REZON M J	BBA - A 2023	1	2	3	4	5		
23UG0338	ARHAM ABBAS SAIT	BBA - A 2023	1	2	3	4	5		
23UG0302	AUGUSTIN BALRAJ	BBA - A 2023	1	2	3	4	5		
23UG0325	BHOOMIKA SANGAMITHRE.M	BBA - A 2023	1	A	2	3	4		
23UG0361	CHALLA NIDHI KRISHNA	BBA - A 2023	1	2	3	A	4		
23UG0341	D JUDHA JOHONAN	BBA - A 2023	1	2	3	4	A		
23UG0323	EMMANUEL C	BBA - A 2023	1	2	A	3	4		
23UG0352	JASMINE MARY K	BBA - A 2023	1	2	A	A	A		
23UG0342	KASHIFA	BBA - A 2023	1	2	3	A	A		
23UG0336	KAVYA B	BBA - A 2023	1	2	3	4	5		
23UG0360	LAKSHMI PRASAD C R	BBA - A 2023	1	2	A	3	4		
23UG0304	LIGODI MANGANZA DAVID	BBA - A 2023	1	2	3	4	5		
23UG0340	MANISH.C	BBA - A 2023	1	2	3	4	5		
23UG0347	MELVIN ABISHEK V	BBA - A 2023	1	2	3	4	5		
23UG0355	MITHUKULLA THIRUMALA NA	BBA - A 2023	1	2	3	4	5		
23UG0331	MOHAMMAD ASRAR KHAN	BBA - A 2023	A	A	A	A	A		
23UG0337	MOHAMMED UMMAR N	BBA - A 2023	1	2	3	4	A		
	NATANIA SHANTAY J	BBA - A 2023	1	2	3	A	A		
23UG0328	PENUEL MOCHAHARI	BBA - A 2023	1	2	3	4	5		
23UG0361	REHANA BANU	BBA - A 2023	1	2	3	4	5		
23UG0309	S R JAYSREE	BBA - A 2023	1	2	A	3	4		
23UG0349	SHARON VALENCIA J	BBA - A 2023	1	2	3	A	A		
23UG0303	SHREYAS S RAJANALKAR	BBA - A 2023	1	2	3	4	A		
23UG0301	SM.BRINDASHREE	BBA - A 2023	1	2	3	4	5		
	TAM PINYA	BBA Internatio	1	A	2	3	4		
23UG0350	TENISON THONGAM	BBA - A 2023	1	2	3	A	A		
23UG0311	V PRADEEP KUMAR	BBA - A 2023	1	2	3	4	5		
23UG0353	AFNAAN AHMED	BBA BUSINESS	1	2	3	4	5		
23UG0396	DIVYA V	BBA BUSINESS	1	2	A	A	A		
23UG0398	GEDDAM AKSHAY BABU	BBA BUSINESS	1	A	2	3	4		
23UG0400	JOHN ABRAHAM.A	BBA BUSINESS	1	A	2	3	4		
23UG0399	PRUTHVI V	BBA BUSINESS	1	2	3	4	5		
23UG0392	SANDHYA D	BBA BUSINESS	1	A	2	3	4		
23UG0391	SYED ALI	BBA BUSINESS	1	A	2	3	4		
23UG0415	DIVYA S	BBA INDUSTRY	1	2	3	4	5		
23UG0417	JIM ELLIOT S	BBA INDUSTRY	1	2	3	4	5		
23UG0411	MUKESH C	BBA INDUSTRY	A	1	2	3	4		
	ABHISHA		A	1	2	3	4		

INDIAN ACADEMY
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PRE-FOUNDATION TEST MARKS:10

Q.1	Excel is a .....program developed by Microsoft.
Q.2	What is the extension of MS-Excel file? A)xls B)xlt C)xlm D)ece
Q.3	Ms Excel File is also called a ..... A) Playbook B)Workbook C)Workstation D)Worksheet
Q.4	No of rows in excel ..... A)1048050 B)2000 C)5000 D) 1048576
Q.5	No of columns in excel .....
Q.6	Column width in excel is ..... A) 500 B)255 C)400 D)255
Q.7	Excel is used for ..... A)Data entry B)Analysis C) Promotion D)
Q.8	CTRL + S is to .....a file
Q.9	CTRL + O is to .....
Q.10	MS stands for .....

INDIAN ACADEMY
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POST FOUNDATION TEST **MARKS: 10**

Q.1	**What is the intersection of a column and a row on a worksheet called?** A)Column B)Value C)Address D) Cell
Q.2	**Which of the following is not a valid datatype in MS-Excel?** A)Number B)Character C)Label D)Date/Time
Q.3	**How many hyperlinks can be there in a worksheet?** A)32,767 B) 32,768 C)65,530 D) 65,535
Q.4	**How many times undo levels can be used in a worksheet?** A)25 B)50 C)75 D)100
Q.5	**How many users can open the Excel file at the same time?** A. 64 users B. 128 users C. 256 users D. 512 users
Q.6	**The fill function can be ____ to complete formulas in a range.** A. Single clicked B. Double-clicked C. Triple clicked D. Right clicked
Q.7	**Which logical function returns TRUE if all arguments evaluate TRUE; FALSE if not?** A. OR B. AND C. IF D. ANDIF
Q.8	**Which logical function returns TRUE if one or more arguments evaluates to TRUE; FALSE if all arguments evaluate to FALSE?** A. OR B. AND C. IF D. ANDIF
Q.9	**The Excel ____ function returns the Boolean value FALSE.**

	A. TRUEFALSE(0) B. FALSE() C. Both of the above D. There is no such function
Q.10	**Which function is used to create a date with year, month, and day?** A. DATE() B. DATEDIF() C. DATEVALUE() D. CURDATE()

NOTES

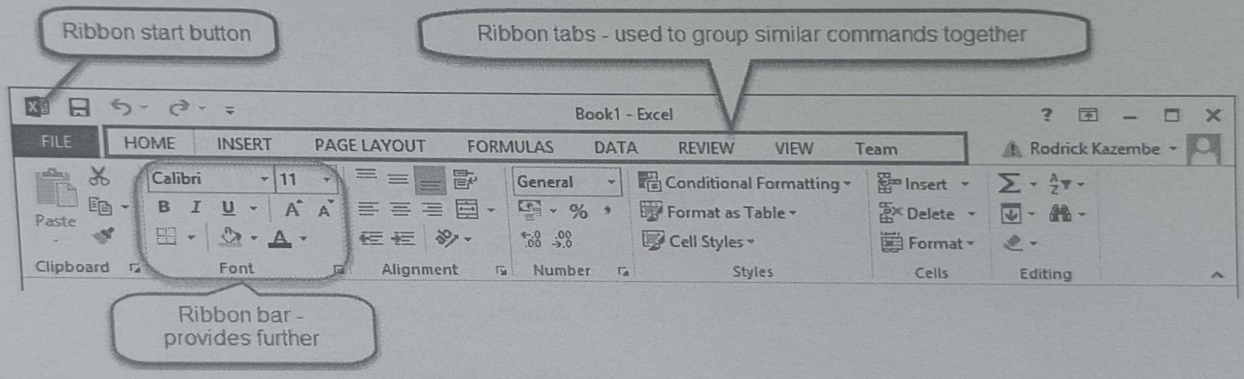
What is Microsoft Excel?

Microsoft Excel is a spreadsheet program used to record and analyze numerical and statistical data. Microsoft Excel provides multiple features to perform various operations like calculations, pivot tables, graph tools, macro programming, etc. It is compatible with multiple OS like Windows, macOS, Android and iOS.

A Excel spreadsheet can be understood as a collection of columns and rows that form a table. Alphabetical letters are usually assigned to columns, and numbers are usually assigned to rows. The point where a column and a row meet is called a cell. The address of a cell is given by the letter representing the column and the number representing a row.

Understanding the Ribbon

The ribbon provides shortcuts to commands in Excel. A command is an action that the user performs. An example of a command is creating a new document, printing a documenting, etc. The image below shows the ribbon used in Excel 2013.



Ribbon components explained

Ribbon start button – it is used to access commands i.e. creating new documents, saving existing work, printing, accessing the options for customizing Excel, etc.

Ribbon tabs – the tabs are used to group similar commands together. The home tab is used for basic commands such as formatting the data to make it more presentable, sorting and finding specific data within the spreadsheet.

Ribbon bar – the bars are used to group similar commands together. As an example, the Alignment ribbon bar is used to group all the commands that are used to align data together.

Understanding the worksheet (Rows and Columns, Sheets, Workbooks)

A worksheet is a collection of rows and columns. When a row and a column meet, they form a cell. Cells are used to record data. Each cell is uniquely identified using a cell address. Columns are usually labelled with letters while rows are usually numbers.

A workbook is a collection of worksheets. By default, a workbook has three cells in Excel. You can delete or add more sheets to suit your requirements. By default, the sheets are named Sheet1, Sheet2 and so on and so forth. You can rename the sheet names to more meaningful names i.e. Daily Expenses, Monthly Budget, etc.

Customization Microsoft Excel Environment

Personally I like the black colour, so my excel theme looks blackish. Your favourite colour could be blue, and you too can make your theme colour look blue-like. If you are not a programmer, you may not want to include ribbon tabs i.e. developer. All this is made possible via customizations. In this sub-section, we are going to look at;

- Customization the ribbon
- Setting the colour theme
- Settings for formulas
- Proofing settings
- Save settings

Important Excel shortcuts

Ctrl + P	used to open the print dialogue window
Ctrl + N	creates a new workbook
Ctrl + S	saves the current workbook
Ctrl + C	copy contents of current select
Ctrl + V	paste data from the clipboard
SHIFT + F3	displays the function insert dialog window
SHIFT + F11	Creates a new worksheet
F2	Check formula and cell range covered

INDIAN ACADEMY
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Admission No	User Name	Batch	PRE FOUNDATION TEST	POST FOUNDATION TEST
23UG	ABHISHA	BBA - A 2023	AB	8
23UG0322	AISHWARYA K	BBA - A 2023	9	8
23UG0345	AISHWARYA M	BBA - A 2023	9	9
23UG0316	DILEEPAN R	BBA - A 2023	9	10
23UG0351	GEETHANJALI N	BBA - A 2023	10	10
23UG0335	GORAKNATH M	BBA - A 2023	10	10
23UG0343	K PRAJWAL	BBA - A 2023	7	8
23UG0312	LINTON RAJESH R	BBA - A 2023	8	9
23UG0321	M SINDHU	BBA - A 2023	8	10
23UG0308	MANASRI R	BBA - A 2023	9	9
23UG0310	MOHAMMAD TOUFEEQ	BBA - A 2023	AB	8
23UG0319	NARMADHA S	BBA - A 2023	10	10
23UG0332	NITHIN S	BBA - A 2023	AB	9
23UG0326	RAKSHITH A	BBA - A 2023	8	8
23UG0346	SHARATH KUMAR S	BBA - A 2023	AB	10
23UG0330	USHA P	BBA - A 2023	8	9
23UG0307	VAISHNAVI R	BBA - A 2023	9	9
23UG	VIDHYA SAGAR GOWDA. N	BBA - A 2023	9	9
23UG0413	DURGA SHREE P	BBA INDUSTRY	7	9
23UG0419	BHOOMIKA.B	BBA Internati	AB	9
23UG0313	AFRID ULLA KHAN	BBA - A 2023	7	9
23UG0354	ARBIN BANU	BBA - A 2023	10	9
23UG0357	ASHOK P	BBA - A 2023	6	9
23UG0329	HUDA QUBEEN	BBA - A 2023	9	9
23UG0333	MIR HAMMAAD HUSSAIN	BBA - A 2023	9	9
23UG0314	MOHAMMED EAHAB	BBA - A 2023	10	9
23UG0317	MOHAMMED SAQLAIN	BBA - A 2023	9	9
23UG0334	MOHAMMED TOUSIF	BBA - A 2023	9	9
23UG0356	MOHD KABEER	BBA - A 2023	9	9
23UG0359	MUKARAM AHMED	BBA - A 2023	10	9
23UG0344	NITASH KUMAR J	BBA - A 2023	8	9
23UG0315	S MUSKAN ANJUM	BBA - A 2023	10	9
23UG0324	SHAM. V	BBA - A 2023	AB	9
23UG0306	UMME AZRA	BBA - A 2023	9	9
23UG0363	YOUNUS ALI KHAN	BBA - A 2023	7	9
23UG0394	BHARATH N SUTHAR	BBA BUSINESS	8	9
23UG0397	MOHAMMED AFREED	BBA BUSINESS	7	9
23UG0395	SHRISTI RAJ	BBA BUSINESS	AB	9
23UG0393	SYED MOHAMMED HASSAN	BBA BUSINESS	10	9
23UG0418	DIVYANKA SHARMA	BBA INDUSTRY	AB	9
23UG0416	MOHAMMED ZAID ALI KHAN	BBA INDUSTRY	AB	9
23UG0414	RAHUL KUMAR	BBA INDUSTRY	8	9
23UG0339	A BENNY	BBA - A 2023	10	9

UG0305	ABHINAYA R	BBA - A 2023	6	9
3UG0318	AHMED SHARIEF	BBA - A 2023	10	9
23UG0320	AKSHATHA S	BBA - A 2023	10	9
23UG0348	ANTONY REZON M J	BBA - A 2023	9	9
23UG0338	ARHAM ABBAS SAIT	BBA - A 2023	10	9
23UG0302	AUGUSTIN BALRAJ	BBA - A 2023	10	9
23UG0325	BHOOMIKA SANGAMITHRE.M	BBA - A 2023	9	9
23UG0361	CHALLA NIDHI KRISHNA	BBA - A 2023	9	9
23UG0341	D JUDHA JOHONAN	BBA - A 2023	8	9
23UG0323	EMMANUEL C	BBA - A 2023	9	9
23UG0352	JASMINE MARY K	BBA - A 2023	10	9
23UG0342	KASHIFA	BBA - A 2023	10	9
23UG0336	KAVYA B	BBA - A 2023	9	9
23UG0360	LAKSHMI PRASAD C R	BBA - A 2023	8	9
23UG0304	LIGODI MANGANZA DAVID	BBA - A 2023	8	9
23UG0340	MANISH.C	BBA - A 2023	7	9
23UG0347	MELVIN ABISHEK V	BBA - A 2023	8	9
23UG0355	MITHUKULLA THIRUMALA NA	BBA - A 2023	9	9
23UG0331	MOHAMMAD ASRAR KHAN	BBA - A 2023	AB	9
23UG0337	MOHAMMED UMMAR N	BBA - A 2023	9	9
	NATANIA SHANTAY J	BBA - A 2023	8	9
23UG0328	PENUEL MOCHAHARI	BBA - A 2023	9	9
23UG0361	REHANA BANU	BBA - A 2023	10	9
23UG0309	S R JAYSREE	BBA - A 2023	9	9
23UG0349	SHARON VALENCIA J	BBA - A 2023	8	9
23UG0303	SHREYAS S RAJANALKAR	BBA - A 2023	8	9
23UG0301	SM.BRINDASHREE	BBA - A 2023	10	9
	TAM PINYA	BBA Internatio	AB	9
23UG0350	TENISON THONGAM	BBA - A 2023	9	9
23UG0311	V PRADEEP KUMAR	BBA - A 2023	8	9
23UG0353	AFNAAN AHMED	BBA BUSINESS	7	9
23UG0396	DIVYA V	BBA BUSINESS	10	9
23UG0398	GEDDAM AKSHAY BABU	BBA BUSINESS	7	9
23UG0400	JOHN ABRAHAM.A	BBA BUSINESS	8	9
23UG0399	PRUTHVI V	BBA BUSINESS	8	10
23UG0392	SANDHYA D	BBA BUSINESS	9	9
23UG0391	SYED ALI	BBA BUSINESS	7	9
23UG0415	DIVYA S	BBA INDUSTRY	10	9
23UG0417	JIM ELLIOT S	BBA INDUSTRY	6	9
23UG0	MUKESH C	BBA INDUSTRY	10	9
23UG0	Md Ismail		LATE JOINEES	
23UG0	Md Haris		"	"
23UG0	Divyanka Sharma		"	"
23UG0	Durgasree		"	"
23UG0	Abhishek C		"	"
	Mahalakshmi		8	10

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course 2023-24

1st semester BBA A&B and Business Analytics

Title of the Course: Fundamentals of Business Accounting

Resource Person: Mr. Ashish G Wilson

Duration: 5 Hours

Accounting Standards:

Accounting standards are guidelines for financial reporting that have been developed by various accounting bodies around the world to ensure that financial statements are consistent, accurate, and reliable. These standards provide guidance on how transactions and events should be recorded, measured, and disclosed in financial statements.

In the United States, the Financial Accounting Standards Board (FASB) sets accounting standards through its Generally Accepted Accounting Principles (GAAP), which are followed by most publicly traded companies. In other countries, such as the United Kingdom, accounting standards are set by the International Accounting Standards Board (IASB), which is responsible for developing and promoting International Financial Reporting Standards (IFRS).

Accounting standards cover a wide range of topics, including revenue recognition, leases, goodwill, and financial instruments. They aim to ensure that financial statements are comparable across companies and industries, and that investors and other stakeholders can make informed decisions based on the information presented in financial statements.

Accounting Conventions:

Accounting conventions are generally accepted guidelines for accounting practices that are not necessarily required by accounting standards, but are commonly used in practice. These

conventions help to ensure consistency and accuracy in financial reporting, and provide a framework for companies to make accounting decisions.

Some common accounting conventions include:

1. Consistency: This convention requires that accounting methods and practices be applied consistently from one period to another, so that financial statements can be compared over time.
2. Conservatism: This convention encourages accountants to be cautious in their reporting, and to err on the side of understating assets and overstating liabilities and expenses.
3. Materiality: This convention requires that only significant transactions and events be recorded in financial statements, while immaterial transactions can be ignored.
4. Matching: This convention requires that expenses be recorded in the same period as the revenues they generate, to ensure that financial statements accurately reflect the results of a company's operations.
5. Objectivity: This convention requires that financial transactions and events be recorded based on verifiable evidence, such as receipts, invoices, and other documents.

In conclusion, accounting standards and conventions are important components of financial reporting, providing guidance and structure to the way in which transactions are recorded and reported. By following these standards and conventions, companies can ensure that their financial statements are accurate, reliable, and comparable over time.

Accounting concepts:

Accounting concepts are the fundamental principles that guide the accounting process. These concepts help to ensure consistency and accuracy in financial reporting and provide a framework for companies to make accounting decisions. The following are some of the most important accounting concepts:

1. Entity Concept: The entity concept states that a business is a separate entity from its owners. This means that the transactions and financial activities of the business must be kept separate from the personal transactions of the owners.

2. Going concern concept: Going concern concept prescribes that accountants prepare financial statements on the assumption that a business may continue its operations for the foreseeable future. Under this concept, the definition of a foreseeable future is a period of 12 months from the end date of the reporting period. If a business owner or the management is invested in scaling down business operations to zero, they cannot apply the going concern concept for accounting. Accountants may no longer apply the going concern concept if a company is:

- unable to pay dividends
- unable to raise credit from banks and financial services
- facing losses and negative operating cash flow
- facing an adverse financial position
- unable to pay back crucial debts
- facing an unfavourable legal or regulatory action against it

3. Money measurement concept: This is an accounting concept based on assumption, and it stipulates that companies record only those transactions that they can quantify and measure in terms of money. If they cannot assign a monetary value to a transaction, they do not record it in their annual financial statement. Though these transactions affect a company's financial performance, they may not find a place in financial statements, as monetising them can be challenging. Some examples of non-monetary value include employee competence, product quality, employee efficiency, market sentiment, business productivity and stakeholder satisfaction.

4. Accounting period concept: The accounting period concept prescribes a timeframe within which a business records and reports its financial performance for the purview of internal and external stakeholders. An accounting period of a company may coincide with the fiscal year. A company can determine a timeframe for internal reporting, like three or six months, or prepare monthly financial reports to analyse their cash flow positions. The management can determine a convenient accounting period for internal reporting, but the

reporting for investor, government and tax purposes is typically for the period of one year.

5. Accrual concept: Accrual is a fundamental concept that guides how a business can record cash or credit transactions. Under this concept, a business records a financial transaction in the period it occurs. It does not consider whether the business pays or receives cash at the time of the transaction, or if it pays cash after a certain period. For example, a company records a credit purchase at the time of purchase rather than when it pays back the seller. This helps record and report income, expenses, liabilities and receivables accurately. All modern accounting systems follow the accrual concept in recording financial transactions.

6. Revenue realisation concept: Under the revenue realisation or revenue recognition concept, a seller records potential revenue from a transaction, regardless of whether they have or have not received proceeds. The ownership of a product transfers from a buyer to a seller during a sale. A seller recognises the transaction by creating a receivable against the buyer's name in their ledger. An accountant creates another entry when they receive the due amount in the future.

7. Full disclosure concept: The full disclosure concept requires a business entity to furnish necessary information for the benefit of those who read financial statements and reports for investment, taxation or audit purposes. This concept aims to provide important financial information to investors, creditors, shareholders, clients, and other stakeholders. Disclosure policies cover revenue recognition, depreciation, inventory, taxes, earnings, stock value, leases and liabilities.

8. Dual aspect concept: Dual aspect concept states that every transaction affects two accounts of a business. A business then records both aspects to enable accurate accounting. Every financial transaction has a credit or debit or a giver or receiver aspect. If an accounting process does not represent both, it may lead to faults in the final

accounting record. The dual aspect concept is the foundation of the double-entry system of bookkeeping, which is now a standard method for auditing and taxation.

9. Materiality concept: The materiality concept prescribes guidelines to identify if a piece of financial information is material and whether it can influence the person reading a company's financial statements. Based on this concept, an accountant or a business may remove negligible transactions that may not have a bearing on final accounts. This concept is open to subjective interpretation and the basis for using the materiality concept varies with the size of a company. While a large company may round off figures in the final accounts to crores, a small firm may round off their figures to lakhs.

10. Verifiable objective evidence concept: Under this concept, a business can record only those transactions that they can furnish documentary proof for. Without proper and valid documentary evidence, a transaction can be biased or undependable, and it can increase the scope of financial irregularities. For example, a retail employee may present a bill for purchases and sales, and corroborate it with sale and purchase invoices.

11. Historical cost concept: The historical cost concept states that a business may record assets and liabilities at their historical cost rather than their current market or sale value. It helps to maintain consistent, reliable and verifiable financial information. Including the current value of an entity can result in financial irregularities.

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course – Pre Screening Test, 25th July 2023

I semester BBA A&B & BA **Faculty In-charge: Mr. Ashish G Wilson**

Subject: Fundamentals of Business Accounting **Max Marks: 15**

1. Explain the golden rules of accounting.
2. What are accounting concepts? Explain in detail.
3. Write a note on accounting conventions.
4. What is an asset? Explain the different types of assets.
5. What is a liability? Explain the different types of liabilities.

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration
Foundation Course - Pre Screening Test Score

Subject: Fundamentals of Business Accounting — **Date: 25/07/2023**

I sem BBA A&B & BA — **Max Marks: 15**

SL. No.	Name	Score
1	SYED ALI	9
2	MIR HAMMAAD HUSSAIN	7
3	PRUTHVI V	10
4	V.PRADEEP KUMAR	5
5	JAYSREE	9
6	MUKESH.C	8
7	DIVYA V	10
8	MUKARAM AHMED	9
9	EMMANUEL	8
10	AISHWARYA K	7
11	M. SINDHU	5
12	BHARATH N SUTHAR	8
13	KASHIFA	10
14	ARHAM ABBAS SAIT	10
15	JOHN ABRAHAM	4
16	MAHALAKSHMI. K	2
17	AFNAAN AHMED	9
18	MOHD KABEER	9
19	DAVID LIGODI	7
20	UMME AZRA	11
21	YOUNUS ALI KHAN	10
22	MOHAMMAD SAQLAIN	8
23	NITHIN S	11
24	REHANA BANU	11
25	MOHAMMAD UMMAR N	10
26	GEETHANJALI	10
27	SHARON	9
28	LAKSHMI PRASAD CR	8
29	MOHAMMED TOUSIF	11
30	CHALLA.NIDHI KRISHNA	8
31	AKSHATHA	6
32	AISHWARYA M	8
33	MITHUKULLA THIRUMALA NARAYAN	9
34	PENUEL MOCHAHARI	9
35	TENISON THONGAM	12
36	AHMED SHARIEF	3
37	NATANIA SHANTAY	9
38	GORAK	8

39	AUGUSTINE BALRAJ	5
40	JIM ELLIOT.S	10
41	S MUSKAN ANJUM	10
42	SM BRINDASHREE	8
43	MD ZAID ALI KHAN	10
44	TAM PINYA	10
45	A.BENNY	6
46	MOHAMMED AFREED	10
47	RAHUL KUMAR	10
48	DURGA SHREE	8
49	KAVYA B	6
50	VAISHNAVI	11
51	ANTONY REZON	7
52	BHOOMIKA	7
53	MANASRI.R	12
54	ABHINAYA.R	6
55	MELVIN	3
56	AFRID ULLA KHAN	6
57	SANDHYA	8
58	NARMADHA.S	6
59	JASMINE MARY	8
60	USHA.P	7
61	ASHOK	9
62	NITASH KUMAR J	8
63	LINTON RAJESH R	7
64	RAKSHITH.A	8
65	MANISH	9
66	GEDDAM AKSHAY BABU	6
67	K PRAJWAL	10
68	DIVYA S	9
69	SYED MOHAMMED HASSAN	6
70	MOHAMMED EAHAB	8
71	HUDA QUBEEN	12
72	ARBIN BANU	7
73	SHREYAS S RAJANALKAR	1
74	DILEEPAN R	9

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course – Post Test, 1st August 2023

I semester BBA A&B & BA **Faculty In-charge: Mr. Ashish G Wilson**

Subject: Fundamentals of Business Accounting **Max Marks: 15**

1. What is the concept of conservatism in accounting?
    a. The principle that a business should always use the most conservative accounting methods
    b. The principle that a business should always use the most aggressive accounting methods
    c. The principle that a business should recognize potential losses immediately but only recognize potential gains when they are realized.

1. Which of the following is an example of the matching concept in accounting?
    a. Recording a sales transaction when the customer places an order
    b. Recording an expense when a supplier's invoice is received
    c. Recording depreciation expense on a building over its useful life

2. What is the purpose of the consistency concept in accounting?
    a. To ensure that a business is always consistent in the way it applies accounting policies from year to year
    b. To ensure that a business uses the most appropriate accounting policies for each individual transaction

c. To ensure that a business is always consistent in the way it presents its financial statements

3. What is the purpose of the consistency concept in accounting?
   a. To ensure that a business is always consistent in the way it applies accounting policies from year to year
   b. To ensure that a business uses the most appropriate accounting policies for each individual transaction
   c. To ensure that a business is always consistent in the way it presents its financial statements

4. Which of the following is an example of the materiality concept in accounting?
   a. Recording a $1,000 expense for office supplies
   b. Recording a $10,000 expense for a new computer system
   c. Recording a $100,000 expense for a new building

5. What is the purpose of the entity concept in accounting?
   a. To ensure that a business is separate from its owners for accounting purposes
   b. To ensure that a business is always recognized as a single entity, even if it has multiple divisions or subsidiaries
   c. To ensure that a business's financial statements reflect only the transactions of the business itself, and not those of its owners or managers

6. Which of the following is an example of the accruals concept in accounting?
   a. Recording revenue when cash is received from a customer
   b. Recording revenue when a product is shipped to a customer
   c. Recording revenue when a customer places an order

7. Which of the following is an example of the prudence concept in accounting?
   a. Recording a large gain on an investment that was held for only a few days

b. Recording a potential loss on a long-term contract even if the loss has not yet been incurred
c. Recording a potential gain on a long-term contract even if the gain has not yet been realized

8. What is the purpose of the historical cost concept in accounting?
   a. To ensure that a business's assets are always valued at their current market value
   b. To ensure that a business's assets are always valued at their original purchase price
   c. To ensure that a business's assets are always valued at their replacement cost

9. Which of the following is an example of the realization concept in accounting?
   a. Recording revenue when a product is shipped to a customer
   b. Recording revenue when a customer places an order
   c. Recording revenue when cash is received from a customer

10. What is the purpose of accounting conventions, and how do they impact financial reporting?

11. Explain the concept of the "going concern" convention in accounting and its significance.

12. What does the "consistency" convention require in terms of accounting practices?

13. Describe the "prudence" or "conservatism" convention and its role in financial reporting.

14. How does the "materiality" convention influence the treatment of transactions in accounting?

15. What is the "full disclosure" convention, and why is it important in financial statements?

16. Explain the concept of "historical cost" convention and its application in valuing assets.
17. Describe the "money measurement" convention and its impact on the recognition of certain economic events.
18. What are the dual aspects or "duality" golden rules of accounting? Provide examples.
19. How do the golden rules of accounting (debit and credit) help maintain the accounting equation in transactions?

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course - Post Assessment Test Score

Subject: Fundamentals of Business Accounting **Date: 01/08/2023**

I sem BBA A&B & BA **Max Marks: 15**

SL. No.	Name	Score
1	PRUTHVI V	12
2	TAM PINYA	9
3	VIDYA SAGAR GOWDA	11
4	JAYSREE	8
5	AISHWARYA K	11
6	PENUEL MOCHAHARI	9
7	MIR HAMMAAD HUSSAIN	13
8	SHREYAS	11
9	EMMANUEL	9
10	AUGUSTIN BALRAJ	10
11	AHMED SHARIEF	7
12	AKSHATHA	9
13	LAKSHMI PRASAD CR	13
14	TENISON THONGAM	12
15	AFNAAN AHMED	5
16	ANTONY REZON M. J	5
17	SYED ALI	11
18	BHARATH N SUTHAR	10
19	RAHUL KUMAR	9
20	JIM ELLIOT. S	13
21	BHOOMIKA SANGAMITHRE M	13
22	DIVYA S	9
23	GORAKNATH M	14
24	DILEEPAN.R	13
25	A. BENNY	13
26	LINTON RAJESH R	11
27	JOHN ABRAHAM	12
28	MANASRI. R	10
29	RAKSHITH. A	14
30	MANISH	9
31	DAVID	8
32	ABHISHA.B	11
33	VAISHNAVI R	11
34	MUKESH.C	10
35	MOHAMMAD SAQLAIN	15
36	M. SINDHU	4
37	CHALLA NIDHI KRISHNA	11

Foundation Course
I semester BBA
Management Principles and practice

Prof. DEEPA S
Assistant Professor
Department of Business Administration
Indian Academy Degree College - Autonomous

Syllabus of Management Principles and Practice – Foundational Course

History of Management – functions of management – Planning – Organising – Staffing – Direction – Coordination – Controlling – importance of communication in Business

Management

Management (or managing) is the administration of an organization whether it is a business, a non profit organization, or government body.

'Management is the art of getting things done through others'

Henry Fayol stated: "to manage is to forecast and to plan, to organise, to command, to co-ordinate and to control."



Evolution of Management Thoughts:

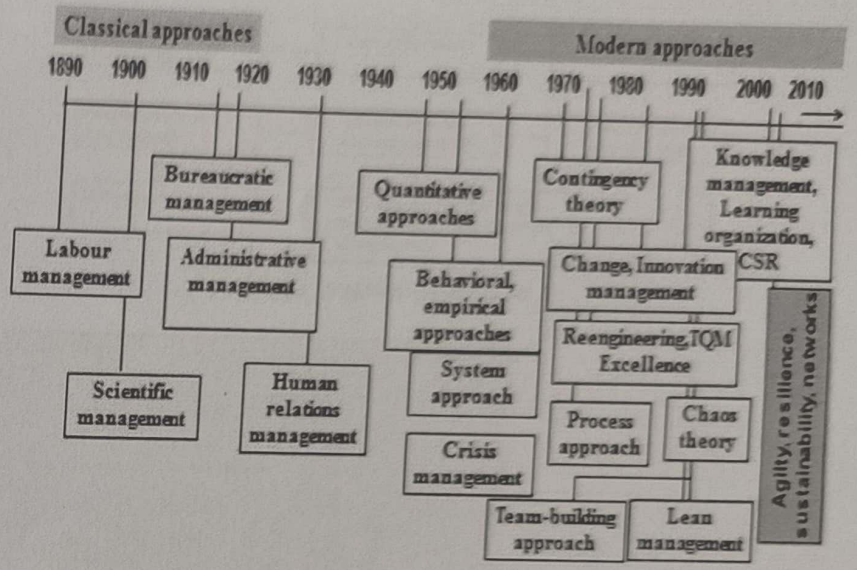
• Development of a Management Practice:

1. Robert Owen – 1771 to 1858 – Improve working condition of labour
2. Charles Babbage – 1791 to 1871 – Division of labour
3. Andrew Ure – 1778 to 1857 – Study of management
4. Charles Dupin – 1784 to 1873 and
5. Henry R Towne – 1844 to 1924 – Business skill needed for running a business.

Evolution of Management Thoughts:

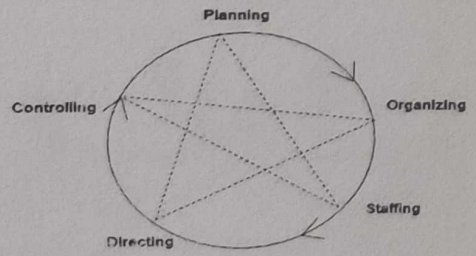
- Its is divided into 4 parts:

1. Pre scientific management period
2. Classical Theory
3. Neo-classical Theory or (Behaviour Approach)
4. Bureaucratic Model of Max Weber

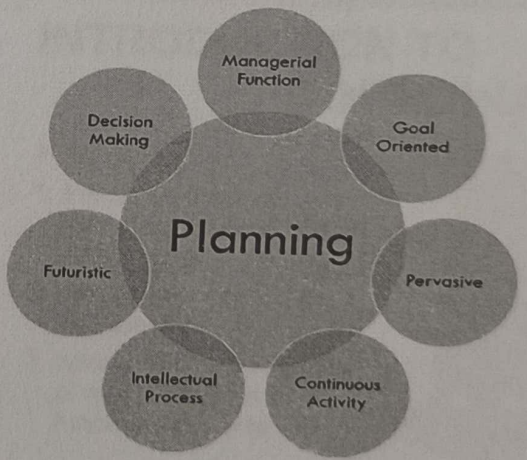


Functions of Management



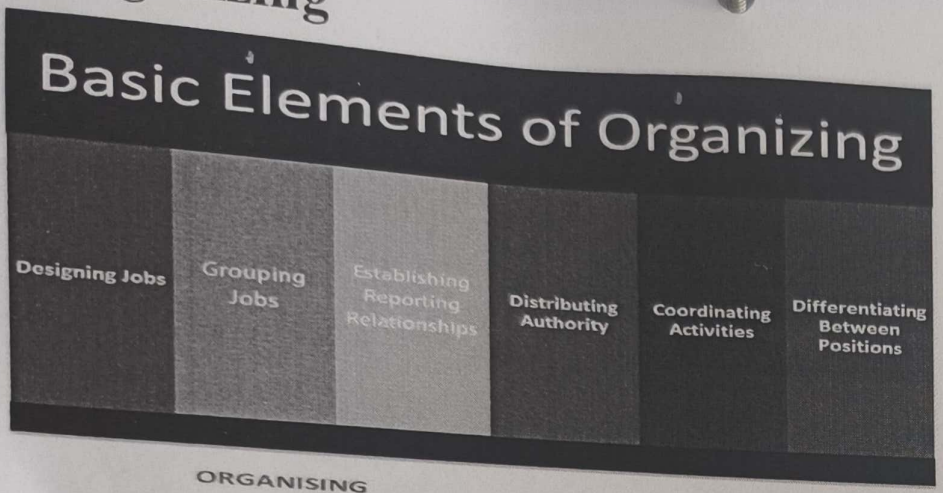


Planning





Organizing





Staffing

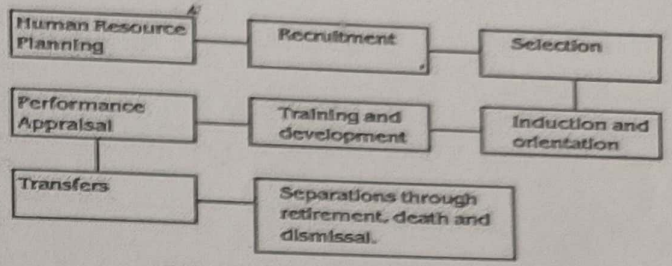
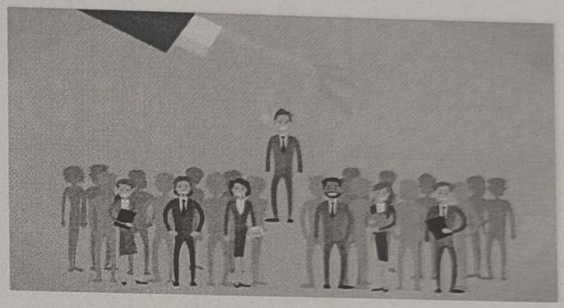
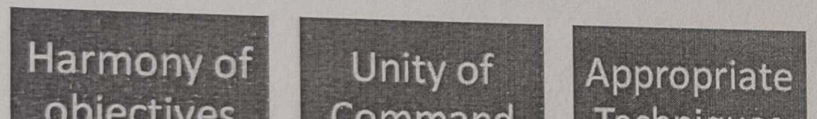
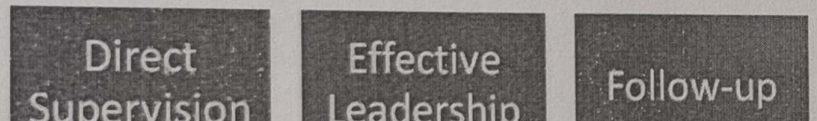


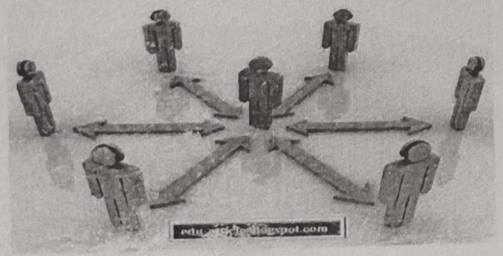
FIGURE 1 : STAFFING PROCESS



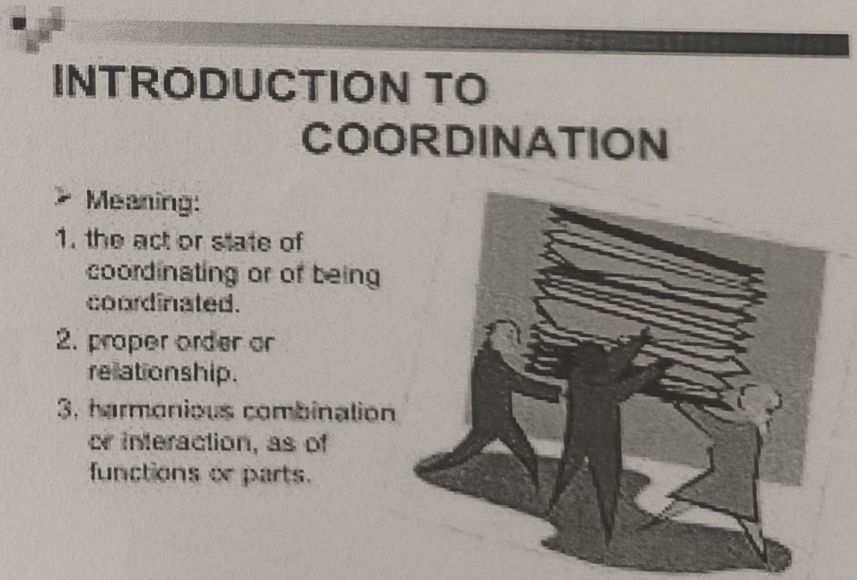
Direction



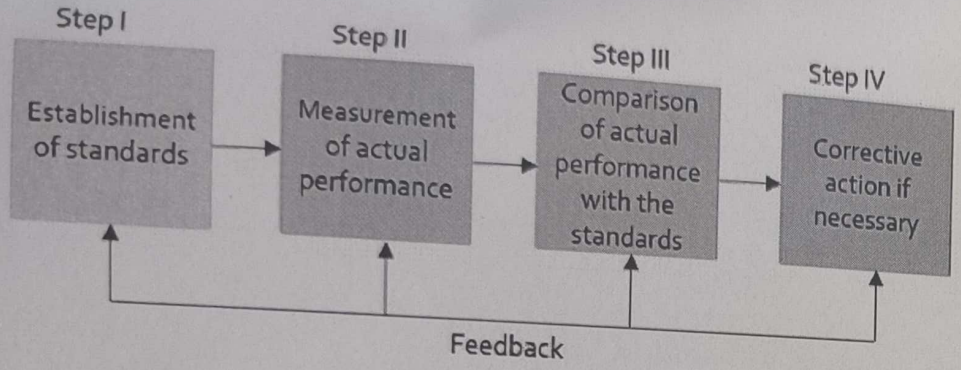


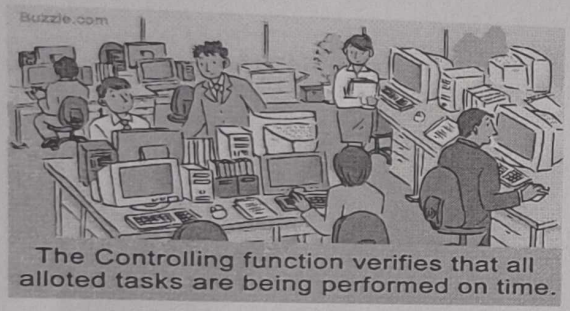


Coordination



Controlling

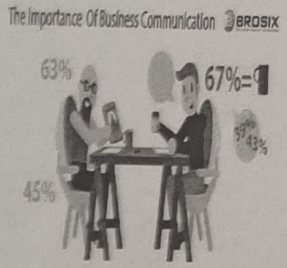


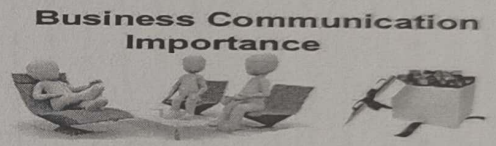


The Controlling function verifies that all alloted tasks are being performed on time.

Importance of communication in business

- Importance of Communication in Corporate World
- Helps to increase the sale
- Helps in retaining the client
- Helps to implement strategies
- Helps in corporate branding
- Helps to develop global competence
- Helps in crisis management





Thank you

INDIAN ACADEMY
Degree College - Autonomous

Department of Business Administration

Foundation Course - Mr. Ashish G Wilson

2023 Batch

Sl.No.	Student Name	24/7/23	25/7/23	26/7/23	27/7/23	28/7/23
1	AISHWARYA K	1	2	3	4	5
2	AISHWARYA M	1	2	A	3	4
3	DILEEPAN R	1	2	3	4	5
4	GEETHANJALI N	1	2	3	4	5
5	GORAKNATH M	1	2	3	4	A
6	K PRAJWAL	1	2	3	4	5
7	LINTON RAJESH R	1	2	3	4	A
8	M SINDHU	1	2	3	4	5
9	MANASRI R	1	2	3	4	5
10	MOHAMMAD TOUFEEQ	1	A	2	3	A
11	NARMADHA S	1	2	3	4	5
12	NITHIN S	1	2	3	4	A
13	RAKSHITH A	1	2	3	4	A
14	SHARATH KUMAR S	A	A	A	A	A
15	USHA P	1	2	3	4	5
16	VAISHNAVI R	1	2	3	4	5
17	VIDHYA SAGAR GOWDA. N	A	A	A	1	2
18	DURGA SHREE P	1	2	A	3	A
19	BHOOMIKA.B	1	2	3	4	A
20	AFRID ULLA KHAN	1	2	3	4	A
21	ARBIN BANU	1	2	3	A	4
22	ASHOK P	1	2	3	4	5
23	HUDA QUBEEN	1	2	3	4	5
24	MIR HAMMAAD HUSSAIN	1	2	3	A	4
25	MOHAMMED EAHAB EHAB	1	2	3	4	5
26	MOHAMMED SAQLAIN	1	2	3	4	A
27	MOHAMMED TOUSIF	1	2	3	4	A
28	MOHD KABEER	A	1	2	3	A
29	MUKARAM AHMED	1	A2	3	4	A
30	NITASH KUMAR J	1	2	A	3	4
31	S MUSKAN ANJUM	1	2	3	4	A
32	SHAM. V	A	A	1	2	3
33	UMME AZRA	1	2	3	4	5
34	YOUNUS ALI KHAN	1	2	3	A	4
35	BHARATH N SUTHAR	1	2	3	4	5
36	MOHAMMED AFREED	1	A	A	2	3
37	SHRISTI RAJ	1	A	A	A	A
38	SYED MOHAMMED HASSAN	1	2	3	4	5
39	DIVYANKA SHARMA	A	A	A	A	A
		11:15 - 12:10	10:15 - 11:15	9:15 - 10:15	9:15 - 10:15	11:15 - 12:10
		Ag-	Ag	Ag-	Ag-	Ag

40	MOHAMMED ZAID ALI KHAN	A	A	2	3	A
41	RAHUL KUMAR	1	2	3	4	5
42	A BENNY	1	2	3	4	A
43	ABHINAYA R	1	2	3	4	A
44	AHMED SHARIEF	1	2	3	4	5
45	AKSHATHA S	1	2	3	4	A
46	ANTONY REZON M J	1	2	3	4	5
47	ARHAM ABBAS SAIT	1	2	3	4	5
48	AUGUSTIN BALRAJ	1	2	3	4	A
49	BHOOMIKA SANGAMITHRE.M	1	A	A	2	3
50	CHALLA NIDHI KRISHNA	1	2	3	4	4
51	D ~~JUDHA~~ JOHONAN JUDAH	1	2	3	4	5
52	EMMANUEL C	1	2	3	4	5
53	JASMINE MARY K	1	2	3	A	A
54	KASHIFA	1	2	3	A	4
55	KAVYA B	1	2	3	A	5
56	LAKSHMI PRASAD C R	1	2	A	3	4
57	LIGODI MANGANZA DAVID	1	2	3	4	5
58	MANISH.C	1	2	3	4	5
59	MELVIN ABISHEK V	1	2	3	4	5
60	MITHUKULLA THIRUMALA Teja	1	2	3	4	A
61	MOHAMMAD ASRAR KHAN	A	A	A	A	A
62	MOHAMMED UMMAR N	1	2	3	4	A
63	NATANIA SHANTAY J	1	2	3	A	A
64	PENUEL MOCHAHARI	1	2	3	A	4
65	REHANA BANU	1	2	3	4	5
66	S R JAYSREE	1	2	3	4	A
67	SHARON VALENCIA J	1	2	3	A	A
68	SHREYAS S RAJANALKAR	1	2	A	A	3
69	SM.BRINDASHREE	1	2	3	4	A
70	TAM PINYA	1	2	3	4	5
71	TENISON THONGAM	1	2	3	4	5
72	V PRADEEP KUMAR	1	2	3	4	5
73	AFNAAN AHMED	1	2	3	4	5
74	DIVYA V	1	2	3	A	4
75	GEDDAM AKSHAY BABU	1	2	3	4	5
76	JOHN ABRAHAM.A	1	2	3	4	5
77	PRUTHVI V	1	2	3	4	5
78	SANDHYA D	1	2	3	4	5
79	SYED ALI	1	2	3	A	4
80	DIVYA S	1	2	3	4	A
81	JIM ELLIOT S	1	2	3	A	4
82	MUKESH C	1	2	3	4	5
~~83.~~	~~Mukarram Ahmed~~	1				
83.	Mahalakshmi. K	1	2	3	A	4
84	~~Abhisha~~.	A	A	1	2	A
85.	Ismail.					

38	AISHWARYA M	11
39	V.PRADEEP KUMAR	7
40	MOHAMMED TOUSIF	13
41	DURGA AGREE. P	12
42	SHAM. V	9
43	MAHALAKSHMI. K	13
44	HUDA QUBEEN	13
45	SM.BRINDASHREE	7
46	AFRID ULLA KHAN	12
47	KAVYA B	13
48	ARHAM ABBAS SAIT	10
49	NARMADHA.S	7
50	USHA P	12
51	JASMINE MARY	10
52	S.MUSLAN ANJUM	10
53	MOHAMMAD UMMAR N	14
54	NITHIN S	7
55	ABHINAYA.R	5
56	MOHAMMED EAHAB	8
57	BHOOMIKA.B	9
58	REHANA BANU	9
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60	SANDHYA	8
61	SHARON	11
62	MITHUKULLA THIRUMALA NARAYANA TEJA	11
63	MOHAMMED TOUFEEQ	8
64	SYED MOHAMMED HASSAN	11
65	NATANIA SHANTAY	11
66	K PRAJWAL	7
67	KASHIFA	13
68	DIVYA V	10
69	MOHAMMED ZAID ALI KHAN	8
70	MOHAMMED AFREED	11
71	MELVIN ABISHEK	15
72	GEDDAM AKSHAY BABU	8
73	ASHOK.P	3
74	NITASH KUMAR.J	12

Introduction to Business

Business is any economic activity that includes the purchase or sale of goods or services with the basic objective of earning profit and satisfying the individuals' needs of the society. Business activities can be classified into two categories: Industry and Commerce.

Economic and Non-Economic Activities

Every individual has different needs, and to fulfill these needs, they perform different activities. These activities are categorized as economic and non-economic activities.

Economic Activities

Economic activities refer to those activities which are performed with the objective of earning money and creating wealth. Economic activities are of three types, namely, Business, Profession, and Employment. For example, an individual running an organization is a business, a teacher teaching at a school is a profession, and an employee working in an organization is employment.

Non-Economic Activities

Non-economic activities refer to those activities which are performed with the objective of satisfying emotional, social, and psychological needs. Earning money and livelihood is not the motive of human beings while performing non-economic activities; instead, people perform them out of sympathy, love, affection, etc. For example, a mother cooking food for her children, a sports teacher coaching his daughter, and friends teaching each other before exams are considered non-economic activities.

Discussion: What is a business?

Concept of Business

All economic activities that involve the sale and/or purchase of goods and services with some element of risk and motive of earning profits are known as business. All business activities also aim at satisfying the needs of human beings in society. It is an activity that is performed on a regular basis and hence also means 'being busy.'

Characteristics of Business

- **Economic activity:** Business is an economic activity, as it involves performing activities with the basic objective of earning money and profits.
- **Sale or exchange of goods and services:** A business should include the sale or exchange of goods and services for some consideration or value in return between the buyer and seller directly or through some third party. No internal consumption is involved in business activities.
- **Procurement or production of goods and services:** Procurement means trading goods and services, and production means manufacturing the goods and services in an organization. In procurement, businesses do not manufacture goods or services on their own; instead, they purchase them from other companies and then sell them to different consumers and businesses. Here goods include any consumable item, and services consisting of banking, insurance, transportation, etc.
- **Regular basis:** An activity will be considered as a business if it takes place on a regular basis. It means that selling or purchasing goods and services for one time only is not considered a business. For example, manufacturing and selling chairs on regular basis is a business. However, selling your school books for one time is not a business.

- **Profit earning:** The main objective of any business is to earn profits. No business can survive only on the sale and purchase of goods and services without making profits. Therefore, the efforts of a businessman are always directed towards earning more and more profits.
- **Uncertainty of return:** The environment in which a business operates is quite uncertain. Therefore, no matter how much money is invested in a business, one cannot say for sure how much profit the business will earn in a specific time period. Hence, the chances of losses are also present in a business.
- **Element of risk:** Uncertain business environment and different natural, human, social, economical, political, financial, or personal factors exist in every business that exposes them to certain risks. Therefore, a business has to consider these elements of risks while performing activities.

Comparison between Business, Profession, and Employment

Basis	Business	Profession	Employment
Meaning	An economic activity including activities related to sales and purchase of goods and services on a regular basis with the objective of earning profit.	An economic activity including activities requiring special skills and knowledge in their occupation.	An economic activity including occupation in which individuals work for their superiors with the motive of earning remuneration in return.
Mode of establishment	Starts after legal formalities like MOA, AOA, etc., are completed.	It requires membership of a professional body like bar council, etc., and a certificate of practice.	Employment starts after receiving an appointment letter.
Qualification	No minimum qualification is required in business.	Formal qualification, expertise, and training from a professional body are essential.	Qualification requirements in employment vary according to the type of job and training prescribed by the employer.
Nature of work	It involves providing goods and services to society.	Profession involves rendering specialized services.	It includes work given by the employer as per the employment contract and the rules

			of service.
Reward	Profit	Professional fees	Salary and wages
Capital	It depends on the nature and size of the business.	It requires limited capital.	Employment does not require any capital.
Code of conduct	A business does not have any code of conduct.	It consists of a professional code of conduct.	In employment, rules or codes of conduct are set by the employer in the terms and conditions of the service contract.
Risk	A business involves high risk.	In profession, there is low risk.	Employment does not involve any risk.
Transfer of interest	In business transfer of interest is possible.	In profession one cannot transfer interest.	In employment also transfer of interest is not possible.
Example	An individual having a manufacturing plant of automobiles.	Doctors, Lawyers, Teachers, Professors, Chartered Accountants are the professionals.	Jobs in firms, shops, banks, etc. are considered as employment.

Objectives of Business

- **Profit earning:** Profit is the amount of a business's revenue over expenditure. Profit earning is the prime motive of every organization as it ensures the survival and growth of the business. Even though profit is essential for a business, it can't be the sole motive of a business.
- **Innovation:** To attain success and growth, it is essential for a business to innovate. Innovation can be done by making new products or making better changes, or adding new features to the existing products. It helps a business in improving its production and distribution methods and explore new markets. In the present world, innovation is essential for every business to compete with other businesses and remain in the market.
- **Market standing:** Another important objective of any business is market standing which can be attained by providing goods and services to its customers to meet their needs and wants. By doing so, a business can maintain a market standing, attain goodwill, and survive for a long time.

Business Economics.

Department of Business Administration

Foundation Course

2023 Batch

Sl.No.	Student Name	24/7/23	25/7/23	26/7/23	27/7/23
1	AISHWARYA K				
2	AISHWARYA M				
3	DILEEPAN R				
4	GEETHANJALI N				
5	GORAKNATH M				
6	K PRAJWAL				
7	LINTON RAJESH R				
8	M SINDHU				
9	MANASRI R				
10	MOHAMMAD TOUFEEQ				
11	NARMADHA S				
12	NITHIN S				
13	RAKSHITH A				
14	SHARATH KUMAR S				
15	USHA P				
16	VAISHNAVI R				
17	VIDHYA SAGAR GOWDA. N				
18	DURGA SHREE P				
19	BHOOMIKA.B				
20	AFRID ULLA KHAN				
21	ARBIN BANU				
22	ASHOK P				
23	HUDA QUBEEN				
24	MIR HAMMAAD HUSSAIN				
25	MOHAMMED EAHAB				
26	MOHAMMED SAQLAIN				
27	MOHAMMED TOUSIF				
28	MOHD KABEER				
29	MUKARAM AHMED				
30	NITASH KUMAR J				
31	S MUSKAN ANJUM				
32	SHAM. V				
33	UMME AZRA				
34	YOUNUS ALI KHAN				
35	BHARATH N SUTHAR				
36	MOHAMMED AFREED				
37	SHRISTI RAJ				
38	SYED MOHAMMED HASSAN				
39	DIVYANKA SHARMA				
		12.15 - 1.10 pm	12.15 - 1.10 pm	11.15 - 12.10 pm.	12.15 - 1.10 pm

40	MOHAMMED ZAID ALI KHAN					
41	RAHUL KUMAR					
42	A BENNY					
43	ABHINAYA R					
44	AHMED SHARIEF					
45	AKSHATHA S					
46	ANTONY REZON M J					
47	ARHAM ABBAS SAIT					
48	AUGUSTIN BALRAJ					
49	BHOOMIKA SANGAMITHRE.M					
50	CHALLA NIDHI KRISHNA					
51	D JUDHA JOHONAN					
52	EMMANUEL C					
53	JASMINE MARY K					
54	KASHIFA					
55	KAVYA B					
56	LAKSHMI PRASAD C R					
57	LIGODI MANGANZA DAVID					
58	MANISH.C					
59	MELVIN ABISHEK V					
60	MITHUKULLA THIRUMALA					
61	MOHAMMAD ASRAR KHAN					
62	MOHAMMED UMMAR N					
63	NATANIA SHANTAY J					
64	PENUEL MOCHAHARI					
65	REHANA BANU					
66	S R JAYSREE					
67	SHARON VALENCIA J					
68	SHREYAS S RAJANALKAR					
69	SM.BRINDASHREE					
70	TAM PINYA					
71	TENISON THONGAM					
72	V PRADEEP KUMAR					
73	AFNAAN AHMED					
74	DIVYA V					
75	GEDDAM AKSHAY BABU					
76	JOHN ABRAHAM.A					
77	PRUTHVI V					
78	SANDHYA D					
79	SYED ALI					
80	DIVYA S					
81	JIM ELLIOT S					
82	MUKESH C					

83. Mahalakshmi .K.

84 Abhisha

Maha Maha Maha

Abhisha Abhisha

T.Bli T.Bli T.Bli T.Bli

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF BUSINESS ADMINISTRATION
FOUNDATION COURSE I SEM BBA A&B - AUGUST 2023

MANAGEMENT PRINCIPLES AND PRACTICE

Sl. No.	Second Language	User Name	Primary (Official) Email ID	Attendance				
				9.15am 24/07	11.15am 25/07	10.15 26/07	2.15 27/07	9.15 28/07
1	KAN	AISHWARYA K	radhakrishna.7247@gmail.com	P	2	3	4	5
2	KAN	AISHWARYA M	aishwaryanayak0303@gmail.com	A	1	A	2	3
3	KAN	DILEEPAN R	vennilamurthi96@gmail.com	A	1	2	3	4
4	KAN	GEETHANJALI N	geethanjalin76@gmail.com	P	2	3	4	5
5	KAN	GORAKNATH M	gorakk.nath@gmail.com	1	2	3	4	5
6	KAN	K PRAJWAL	prjwlf@gmail.com	1	2	3	4	5
7	KAN	LINTON RAJESH R	lintuhoneyboy@gmail.com	1	2	3	4	5
8	KAN	M SINDHU	sindhuqueen2008@gmail.com	1	2	3	4	5
9	KAN	MANASRI R	MANASRI01092005@GMAIL.COM	1	2	3	4	5
10	KAN	MOHAMMAD TOUFEEQ	sheikhtoufeeq8691@gmail.com	1	A	2	A	A
11	KAN	NARMADHA S	darshanfalcon92@gmail.com	1	2	3	4	5
12	KAN	NITHIN S	nithin132004@gmail.com	1	2	3	4	A
13	KAN	RAKSHITH A	gowdarakshith803@gmail.com	1	2	3	4	5
14	KAN	SHARATH KUMAR S	mamathasiddesh2004@gmail.com	A	A	A	A	A
15	KAN	USHA P	CHANDUUSHA1922@GMAIL.COM	1	2	3	4	5
16	KAN	VAISHNAVI R	VAISHU192005@GMAIL.COM	1	2	3	4	5
17	KAN	VIDHYA SAGAR GOWDA. N	venugopal84768@gmail.com	A	A	1	2	3
18	KAN	DURGA SHREE P	nn2574108@gmail.com	A	1	A	A	A
19	KAN	BHOOMIKA.B	bhoomikababu583@gmail.com	1	A	2	A	A
20	HIN	AFRID ULLA KHAN	afridullakhan89@gmail.com	1	2	3	4	A
21	HIN	ARBIN BANU	kalcemsalma55@gmail.com	1	2	3	4	5
22	HIN	ASHOK P	chakraashok04@gmail.com	1	2	3	4	5
23	HIN	HUDA QUBEEN	nazialulu786@gmail.com	1	2	3	4	5
24	HIN	MIR HAMMAAD HUSSAIN	HAMMAAD12072005@GMAIL.COM	1	2	3	4	5
25	HIN	MOHAMMED FAHAB	mmohammedeahab@gmail.com	1	2	3	4	5
26	HIN	MOHAMMED SAQLAIN	txsxqtasaq@gmail.com	1	2	3	4	A
27	HIN	MOHAMMED TOUSIF	[illegible]@gmail.com	1	2	A	3	4

28	HIN	MOHD KABEER	mohamedkabeer215@gmail.com	A	1	2	3	4		
29	HIN	MUKARAM AHMED	Mukaramahmed18@gmail.com	1	2	3	4			
30	HIN	NITASH KUMAR J	hemanthkumarj809@gmail.com	1	2	3	4	5		
31	HIN	S MUSKAN ANJUM	muskananjum048@gmail.com	1	2	3	4	5		
32	HIN	SHAM. V	shamna12345677@gmail.com	A	A	1	2	3		
33	HIN	UMME AZRA	ummeazra27@gmail.com	1	2	3	4	5		
34	HIN	YOUNUS ALI KHAN	younuskhan0100@gmail.com	A	1	2	A	A		
35	HIN	BHARATH N SUTHAR	bharatsuthar93426@gmail.com	1	2	3	4	5		
36	HIN	MOHAMMED AFREED	afreedmohammed966@gmail.com	1	2	3	4	5		
37	HIN	SHRISTI RAJ	rajivraj87@gmail.com	A	A	A	3	4		
38	HIN	SYED MOHAMMED HASSAN	younus515@gmail.com	1	2	3	A	A		
39	HIN	DIVYANKA SHARMA	divyadsharma572@gmail.com	A	A	A	A	A		
40	HIN	MOHAMMED ZAID ALI KHAN	MDZAIDALIK2005@GMAIL.COM	1	2	3	4	5		
41	HIN	RAHUL KUMAR	RAHULSHARMA85250408@GMAIL.COM	A	A	A	A	A		
42	AE	A BENNY	diwa1916@gmail.com	1	2	3	4	A		
43	AE	ABHINAYA R	abhinayar26092005@gmail.com	1	2	3	4	5		
44	AE	AHMED SHARIEF	barkathhanni@gmail.com	1	2	3	4	5		
45	AE	AKSHATHA S	akshuakshatha700@gmail.com	1	2	3	4	5		
46	AE	ANTONY REZON M J	dargin.thomas@gmail.com	1	2	3	4	5		
47	AE	ARHAM ABBAS SAIT	arhamsait07@gmail.com	1	2	A	3	4		
48	AE	AUGUSTIN BALRAJ	stellamariakush@gmail.com	1	2	3	4	5		
49	AE	BHOOMIKA SANGAMITHRE.M	akashbuddhasena321@gmail.com	1	2	3	4	5		
50	AE	CHALLA NIDHI KRISHNA 7893180769	nidhikrishnac28@gmail.com	1	2	3	4	A		
51	AE	D JUDHA JOHONAN	danuday58888@gmail.com	1	2	A	3	4		
52	AE	EMMANUEL C	emmanuelemmu110@gmail.com	1	2	3	4	5		
53	AE	JASMINE MARY K	mkj200e@gmail.com	1	A	2	3	4		
54	AE	KASHIFA	kashifa04khan@gmail.com	1	2	3	4	5		
55	AE	KAVYA B	nikhil889257@gmail.com	1	2	3	4	A		
56	AE	LAKSHMI PRASAD C R	crazyprasad17@gmail.com	1	2	3	4	5		
57	AE	LIGODI MANGANZA DAVID	davidligodi01@gmail.com	1	2	3	4	5		
58	AE	MANISH.C	manishmanish20326@gmail.com	1	2	A	3	4		
59	AE	MELVIN ABISHEK V	meliomelvin15@gmail.com	1	2	3	4	5		
60	AE	MITHUKULLA THIRUMALA NARAYANA TEJA	balanarayana1977@gmail.com	1	2	3	4	5		
61	AE	MOHAMMAD ASRAR KHAN	asrarkhanking08@gmail.com	1	2	3	4	5		
62	AE	MOHAMMED UMMAR N	umarff143@gmail.com	A	A	A	A	A		
63	AE	NATANIA SHANTAVI	nataniashantavi1@gmail.com	1	2	3	4	A		

64	AE	PENUEL MOCHAHARI	penuelmocha@gmail.com	1	2	3	4	5		
65	AE	REHANA BANU	rehanarehu199@gmail.com	1	2	3	4	5		
66	AE	S R JAYSREE	jaysreesrjaysree@gmail.com	1	2	A	3	4		
67	AE	SHARON VALENCIA J	sharonstyles1994@gmail.com	1	2	3	A	A		
68	AE	SHREYAS S RAJANALKAR	srajanalkar@gmail.com	A	1	2	3	4		
69	AE	SM.BRINDASHREE	brindabrinda290704@gmail.com	1	2	3	A	A		
70	AE	TAM PINYA	pinya7439@gmail.com	1	2	3	4	5		
71	AE	TENISON THONGAM	resmilai15@gmail.com	1	2	3	4	5		
72	AE	V PRADEEP KUMAR	vpradeepkumar619@gmail.com	1	2	3	4	5		
73	AE	AFNAAN AHMED	harmain143@gmail.com	1	2	3	4	5		
74	AE	DIVYA V	divyavenkatesh69@gmail.com	1	2	3	4	5		
75	AE	GEDDAM AKSHAY BABU	geddamakshaybabu3223ak@gmail.com	1	2	3	4	5		
76	AE	JOHN ABRAHAM.A	stella@nias.res.in	1	2	3	4	5		
77	AE	PRUTHVI V	Pruthvi200408@gmail.com	1	2	3	4	5		
78	AE	SANDHYA D	udayadasarath@gmail.com	1	2	3	4	5		
79	AE	SYED ALI	simal2004@yahoo.co.in	1	2	3	4	5		
80	AE	DIVYA S	JAGASURESH2001@GMAIL.COM	1	2	3	4	5		
81	AE	JIM ELLIOT S	poojameenavj@gmail.com	1	2	3	4	5		
82	AE	MUKESH C	SARITHAKUMARI789@GMAIL.COM	1	2	3	4	5		
83	AE	MAHALAKSHMI K		1	2	3	4	5		
84	KAN	Abhisha 26/7/23		1	2	3	4	A		
				-	-	1	2	A		

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DEPARTMENT OF COMPUTER SCIENCE

BRIDGE COURSE

BCA/BSc 2023-2027

PROBLEM SOLVING TECHNIQUE USING C

DATE :24/07/2023-28/07/2023

DURATION: 05 Hrs

Handled By:

Mrs.Sona.K. V

HOD:

Mrs Anuradha P

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043

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Bangalore - 43.

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DEPARTMENT OF COMPUTER SCIENCE

Bridge Course-BCA/BSc 2023-2027

Problem Solving Technique Using C

Pre-screening Test

Date:24/7/2023 **Max Marks:10**

Q1. Which of the following is true about C programming language?

a) C is a structural language.

b) C is a procedural language.

c) C does not supports function within function.

d) All of these

Q2. In C, the names of variables, functions, labels, and various other user-defined items are :

a) keywords

b) Tokens

c) Identifiers

d) None of these

Q3. Variables that are declared inside a function are:

a) constants

b) literals

c) global

d) local

Q4. main () is:

a) keyword

b) function

c) both

d) None of these

Q5. When a function is called by itself again and again, then it is :

a) call by value

b) call by reference

c) recursion

d) system function call

Q6. getch() is present in this header file

a) stdio.h

b) conio.h

c) stdlib.h

d) None of the mentioned

Q7. _____ is used to take user input in C.

a) input()

b) printf()

c) scanf()

d) None of the above

Q8. pow () is present in which header file?

a) maths.h

b) arithmetic.h

c) process.h

d) math.h

Q9. Which of the following is an ternary operator in C?

a) &&

b) %%

c) !=

d) ?:

Q10.Which of the following language does the computer understand?

a) Computer understands only C Language

b) Computer understands only Assembly Language

c) Computer understands only Binary Language

d) Computer understands only BASIC

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I SEM BCA SEC 'A' PROBLEM SOLVING TECHNIQUES USING C

Sl.No	FULL NAME	SCORE
1	Chandana B	3
2	Kusuma N	5
3	Anirudh.R	9
4	Chandan.s	5
5	Manasa.J	7
6	Batta Rohith	3
7	FRANCIS ARUN	8
8	K Mohammed Izhaan	7
9	Bhanushree	3
10	Danies B	7
11	Rohith	5
12	Mohammed izhaan	4
13	DHANUSH V R	9
14	Rohith	2
15	Dhaniya shree M	7
16	Danies B	5
17	Abubaker siddiq khan	5
18	Humera saima	2
19	Madhu	3
20	Deekshitha k	8
21	Karan	2
22	Divya R	7
23	Madhu	4
24	Manasa.J	6

25	Divya R	5
26	G.R.Deekshitha	5
27	Kushal Singh Dhami	8
28	Divya R	3
29	Dhaniya shree M	9
30	Divya R	2
32	Dafny Fathima	1
33	C Petrick Joseph	10
34	Jathin.m	2
35	C Petrick Joseph	2
36	Dhanusha Reddy R	7
37	Lalithkumar	7
38	Kavitha s	4
39	Darshan kumar AR	3
41	Abhishek G	3
42	Ameen Baig	6
43	Dhanusha	6
45	Ankitha sushma Raj D.L	7
46	Archana parnoal	6
47	Arun	7
48	Arun	7
49	K. AbinayaShree	5
50	Eshwar R	4
51	Divya k	4
52	Divya	7
53	Danies B	4
54	Jasna	5
55	Ayush Singh	2

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043

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Hennur Cross, Kalyan Nagar
Bangalore - 43

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BRIDGE COURSE PRE-ASSESSMENT TEST MARKS

I SEM BCA SEC 'B' PROBLEM SOLVING TECHNIQUES USING C

SL NO.	FULL NAME	SCORE
1	Manu srinivas	7
2	Mohammed Abdul Wahid	9
3	Naziya arfa anjum	8
4	Nandini	6
5	Nitesh Rao S	9
6	Priya T	7
7	Mohammed Abdul Wahid	9
8	Pratiksha singh	5
9	Praveen	6
10	Mohammed Abdul Wahid	2
11	Mohammed huzaif	5
12	Mohammed Abdul Wahid	7
13	Priya T	7
14	Mohammed Abdul Wahid	9
15	Mohammed huzaif	6
16	Priyanka M S	8
17	Priyanka p	8
18	Owaiz ahmed	2
19	Priyanka p	8
20	Mohammed rehan	9
21	Nafiha	8
22	Mubarak ali	7
23	Mubarak ali	5
24	Pruthvi Raj D	10
25	Thanyata. P.S	7
26	Mohammed Owais	7

27	Nikhil sharma	8
28	Maqsood ali pathan	5
29	Mohammed Rehan	9
30	Nancy Nikhita.a	3
31	Nancy Nikhita.a	5
32	N Faisal Ahmed	5
33	Pruthvi Raj D	9
34	M.Mohseena	8
35	Nethravathi.S	9
36	N.k Fathima Tabassum	7
37	MUSTABSHIRA	3
38	Nayanathara R	1
39	Priyanka sami kounder	7
40	Mominbasha	3
41	Naveen	6
42	Monisha sharon	4

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043.

PRINCIPAL
INDIAN ACADEMY DEGREE COLL
AUTONOMOUS
Hennur Cross, Kalyan Nagar
Bangalore - 43.

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BRIDGE COURSE PRE-ASSESSMENT TEST MARKS

I SEM BSc DATA SCIENCE PROBLEM SOLVING TECHNIQUES USING C

SL NO	NAMES	MARKS
1	Lekhana Jagadeesh	4
2	Grisham Girish	3
3	Sumit Kumar	4
4	Vandana k	4
5	Sanjana yadav	3
6	Sumit Kumar	4
7	Jamula.M	5
8	Bharath.B	6
9	Sumit Kumar	3
10	Krushna Santosh	4
11	Mohammed haris	2
12	Bhuvanesh	5
13	Alwyn Anush AR	3
14	Abid	4
15	Mubasheer Ahmed.F	6
16	Muhammed Ayaan Sheriff	5
17	Hepzibah vincy	3
18	Bommu Ramya	1

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043.

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AUTONOMOUS
Hennur Cross, Kalyan Nagar
Bangalore - 43.

30/8/23

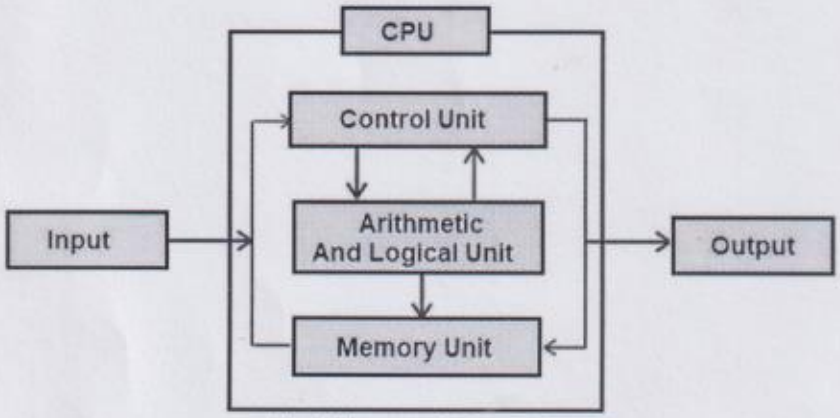
What is a Computer?

A computer is an electronic device that can perform various functions by taking input from the user, performing various processes on it with a set of defined instructions that produce an output.

The 4 main elements of a computer is given below.

1.Hardware
2.Software
3.User
4.Data

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Block Diagram of a Computer

Input

The data that is to be processed is put through the input unit. The computer accepts the raw data in binary form. It then processes the data and produces the desired output.

CPU – Central Processing Unit

Central Processing Unit or the CPU, is the brain of the computer. It works the same way a human brain works. As the brain controls all human activities, similarly the CPU controls all the tasks.

Output

The output unit displays the data either in the form of a soft copy or a hard copy. The printer is for the hard copy. The monitor is for the display. The output unit accepts the data in binary form from the computer. It then converts it into a readable form for the user.

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ALU – Arithmetic Logic Unit

The Arithmetic Logic Unit is made of two terms, arithmetic and logic. There are two primary functions that this unit performs.

1.Data is inserted through the input unit into the primary memory. Performs the basic arithmetical operation on it. Like addition, subtraction, multiplication, and division. It performs all sorts of calculations required on the data. Then sends back data to the storage.

2.The unit is also responsible for performing logical operations like AND, OR, Equal to, Less than, etc. In addition to this it conducts merging, sorting, and selection of the given data.

CU – Control Unit

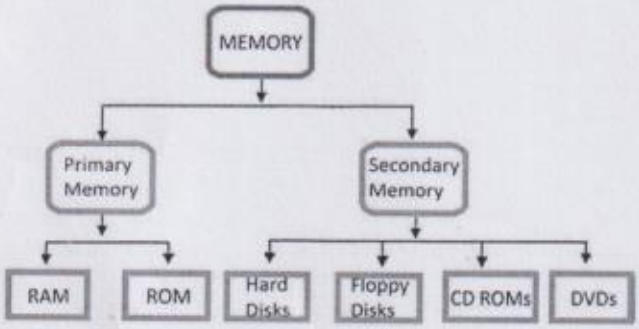
The memory unit sends a set of instructions to the control unit. Then the control unit in turn converts those instructions. After that these instructions are converted to control signals.

These control signals help in prioritizing and scheduling activities. Thus, the control unit coordinates the tasks inside the computer in sync with the input and output units.

Memory Unit

All the data that has to be processedor has been processedis storedin the memory unit. The memory unit acts as a hub of all the data. It transmits it to the required part of the computer whenever necessary.

The memory unit works in sync with the CPU. This helps in faster accessing and processingof the data. Thus, making tasks easierand quicker.



Tokens in C

A token in C can be defined as the smallest individual element of the C programming language that is meaningful to the compiler. It is the basic component of a C program.

Types of Tokens in C

The tokens of C language can be classified into six types based on the functions they are used to perform. The types of C tokens are as follows:

Keywords

Keywords are predefined, reserved words in C and each of which is associated with specific features. These words help us to use the functionality of C language. They have special meaning to the compilers.

There are total 32 keywords in C.

auto	double	int	struct
break	else	long	switch
case	enum	register	typedef
char	extern	return	union
continue	for	signed	void
do	if	static	while
default	goto	sizeof	volatile

const	float	short	unsigned

Identifiers

Each program element in C programming is known as an identifier. They are used for naming of variables, functions, array etc. These are user-defined names which consist of alphabets, number, underscore '_'. Identifier's name should not be same or same as keywords. Keywords are not used as identifiers.

C - Header Files

A header file is a file with extension **.h** which contains C function declarations and macro definitions to be shared between several source files. There are two types of header files: the files that the programmer writes and the files that comes with your compiler.

You request to use a header file in your program by including it with the C preprocessing directive **#include**, like you have seen inclusion of **stdio.h** header file, which comes along with your compiler.

What is Algorithm ?

An algorithm is a set of commands that must be followed for a computer to perform calculations or other problem-solving operations.

According to its formal definition, an algorithm is a finite set of instructions carried out in a specific order to perform a particular task.

It is not the entire program or code; it is simple logic to a problem represented as an informal description in the form of a flowchart or pseudocode.

Algorithm 1: Add two numbers entered by the user

Step 1: Start

Step 2: Declare variables num1, num2 and sum.

Step 3: Read values num1 and num2.

Step 4: Add num1 and num2 and assign the result to sum.

sum←num1+num2

Step 5: Display sum

Step 6: Stop

Algorithm 2: Find the largest number among three numbers

Step 1: Start

Step 2: Declare variables a,b and c.

Step 3: Read variables a,b and c.

Step 4: If a > b

If a > c

Display a is the largest number.

Else

Display c is the largest number.

Else

If b > c

Display b is the largest number.

Else

Display c is the greatest number.

Step 5: Stop

Algorithm 4: Find the factorial of a number

Step 1: Start

Step 2: Declare variables n, factorial and i.

Step 3: Initialize variables

factorial ← 1

i ← 1

Step 4: Read value of n

Step 5: Repeat the steps until i = n

5.1: factorial ← factorial*i

5.2: i ← i+1

Step 6: Display factorial

Step 7: Stop

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I SEM BCA 'A' BRIDGE COURSE 2023 BATCH

Problem Solving Technique Using C

ATTENDANCE SHEET

SL NO	FULL NAME	24/7	25/7	26/7	27/7	28/7
1	Chandana B	p	p	p	p	p
2	Kusuma N	p	p	p	p	p
3	Anirudh.R	p	p	p	p	p
4	Chandan.s	p	p	p	p	p
5	Manasa.J	p	p	p	p	p
6	Batta Rohith	p	p	p	p	p
7	FRANCIS ARUN	p	p	p	A	p
8	K Mohammed Izhaan	p	p	p	p	p
9	Bhanushree	p	A	p	p	p
10	Danies B	p	p	p	p	p
11	Rohith	p	p	A	p	p
12	Mohammed izhaan	p	p	p	p	p
13	DHANUSH V R	p	p	p	p	p
14	Rohith	p	p	p	p	p
15	Dhaniya shree M	p	A	p	p	p
16	Danies B	p	p	p	p	p
17	Abubaker siddiq khan	p	p	p	p	p
18	Humera saima	p	p	p	p	p
19	Madhu	p	p	p	p	p
20	Deekshitha k	p	p	p	p	p
21	Karan	p	p	p	p	p
22	Divya R	p	p	p	p	p

23	Madhu	p	p	p	p	p
24	Manasa.J	p	p	p	A	p
25	Divya R	p	p	p	p	p
26	G.R.Deekshitha	p	p	p	p	p
27	Kushal Singh Dhami	p	p	p	p	p
28	Divya R	p	p	p	p	p
29	Dhaniya shree M	p	p	p	p	p
30	Divya R	p	p	p	p	p
31	Dafny Fathima	p	p	p	p	p
32	C Petrick Joseph	p	p	p	p	p
33	Jathin.m	p	p	p	p	p
34	C Petrick Joseph	p	p	p	p	p
35	Dhanusha Reddy R	p	p	p	p	p
36	Lalithkumar	p	p	p	p	A
37	Kavitha s	p	p	p	p	p
38	Darshan kumar AR	p	p	p	A	p
39	Abhishek G	p	p	p	p	p
40	Ameen Baig	p	p	p	p	p
41	Dhanusha	p	p	p	p	p
42	Ankitha sushma Raj D.L	p	p	p	p	p
43	Archana parnoal	p	p	p	p	p
44	Arun	p	p	A	p	p
45	Arun	p	p	p	p	p
46	K. AbinayaShree	p	A	p	p	A
47	Eshwar R	p	p	p	p	p
48	Divya k	p	p	p	p	p
49	Divya	p	p	p	p	p
50	Danies B	p	p	p	p	p
51	Jasna	p	p	p	p	p
52	Ayush Singh	p	p	A	p	p

Head
Department of Computer Science
Indian Academy Degree College
Ammir Cross, Hennur Main Road
Bengaluru-560043

27	Nikhil sharma	9
28	Maqsood ali pathan	9
29	Mohammed Rehan	10
30	Nancy Nikhita.a	9
31	Nancy Nikhita.a	9
32	N Faisal Ahmed	9
33	Pruthvi Raj D	9
34	M.Mohseena	9
35	Nethravathi.S	9
36	N.k Fathima Tabassum	9
37	MUSTABSHIRA	9
38	Nayanathara R	6
39	Priyanka sami kounder	9
40	Mominbasha	8
41	Naveen	9
42	Monisha sharon	9

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Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-43

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DEPARTMENT OF COMPUTER SCIENCE

I SEM BCA 'B' BRIDGE COURSE 2023 BATCH

Problem Solving Technique Using C

ATTENDANCE SHEET

SL NO	FULL NAME	24/7	25/7	26/7	27/7	28/7
1	Manu srinivas	P	P	P	P	P
2	Mohammed Abdul Wahid	P	P	P	P	P
3	Naziya arfa anjum	P	P	P	P	P
4	Nandini	P	P	P	P	P
5	Nitesh Rao S	P	P	P	P	P
6	Priya T	P	P	P	P	P
7	Mohammed Abdul Wahid	A	P	P	P	P
8	Pratiksha singh	P	P	P	P	P
9	Praveen	P	P	P	P	P
10	Mohammed Abdul Wahid	P	A	P	P	P
11	Mohammed huzaif	P	P	P	P	P
12	Mohammed Abdul Wahid	P	P	P	P	P
13	Priya T	P	P	P	P	P
14	Mohammed Abdul Wahid	P	P	P	P	P
15	Mohammed huzaif	P	P	P	P	P
16	Priyanka M S	P	P	P	P	P
17	Priyanka p	P	P	P	P	P
18	Owaiz ahmed	P	P	P	P	P
19	Priyanka p	P	P	P	P	A
20	Mohammed rehan	P	A	P	P	P
21	Nafiha	A	P	P	P	P
22	Mubarak ali	P	P	P	P	P

23	Mubarak ali	P	P	P	P	A
24	Pruthvi Raj D	P	P	P	P	P
25	Thanyata. P.S	P	P	A	P	P
26	Mohammed Owais	A	P	P	P	P
27	Nikhil sharma	P	P	P	P	P
28	Maqsood ali pathan	P	P	P	A	P
29	Mohammed Rehan	P	P	A	P	P
30	Nancy Nikhita.a	A	P	P	P	P
31	Nancy Nikhita.a	P	P	P	P	P
32	N Faisal Ahmed	P	P	P	P	P
33	Pruthvi Raj D	P	P	A	P	P
34	M.Mohseena	P	P	P	P	P
35	Nethravathi.S	P	P	P	P	P
36	N.k Fathima Tabassum	P	P	P	P	P
37	MUSTABSHIRA	P	P	P	P	P
38	Nayanathara R	P	P	P	P	A
39	Priyanka sami kounder	P	P	P	P	P
40	Mominbasha	P	P	P	P	P
41	Naveen	P	P	P	P	P
42	Monisha sharon	P	P	P	P	P

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23/8/23

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I SEM BSc Data Science BRIDGE COURSE 2023 BATCH

Problem Solving Technique Using C

SL NO	NAMES	24/8	25/8	26/8	27/8	28/8
1	Lekhana Jagadeesh	P	P	P	P	P
2	Grisham Girish	P	P	P	P	P
3	Sumit Kumar	P	P	P	P	P
4	Vandana k	P	P	P	P	P
5	Sanjana yadav	P	P	P	P	P
6	Sumit Kumar	P	P	P	P	P
7	Jamula.M	P	P	P	P	P
8	Bharath.B	P	P	P	P	P
9	Sumit Kumar	P	P	P	P	P
10	Krushna Santosh	P	P	P	P	P
11	Mohammed haris	P	P	P	P	P
12	Bhuvanesh	P	P	P	P	P
13	Alwyn Anush AR	P	P	P	P	P
14	Abid	P	P	P	P	P
15	Mubasheer Ahmed.F	P	P	P	P	P
16	Muhammed Ayaan Sheriff	P	P	P	P	P
17	Hepzibah vincy	P	P	P	P	P
18	Bommu Ramya	P	P	P	P	P

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BRIDGE COURSE ASSESSMENT TEST

DEPARTMENT OF COMPUTER SCIENCE

POST ASSESSMENT TEST

B21 DC 1.2: Problem Solving Techniques using C

Date: 28/07/2023

Time: 30 Minutes **Max. Marks: 10**

1. Which of the following language does the computer understand?
   - Computer understands only C Language
   - Computer understands only Assembly Language
   - Computer understands only Binary Language
   - Computer understands only BASIC
2. Which of the following is not a function of the Input Unit?
   - It reads instructions and data from the outside world
   - It converts the data into computer acceptable format
   - It makes the data into user understandable format
   - It supplies the data and instructions to the computer for further processing
3. The process of producing useful information for the user is called_____
   - Controlling
   - Inputting
   - Outputting
   - Processing
4. Whish of the following is the brain of the computer?
   - Central Processing Unit
   - Arithmetic and Logic unit
   - Memory
   - Control unit
5. The two basic types of memory in a computer are _____
   - Primary and major

- Primary and Secondary
- Minor and Major
- Main and virtual

6. Storage which stores stores of retains data after power off is called.
   - Volatile storage
   - Non-volatile storage
   - Sequential storage
   - Direct storage
7. What is an algorithm?
   - A flowchart
   - A pseudo code
   - A decision
   - Step by step instruction used to solve a problem
8. In a Flowchart, a calculation (process) is represented by
   - A rectangle
   - A rhombus
   - A Parallelogram
   - A circle
9. _____ Symbol used when the decision or condition to be checked
   - Connector
   - Terminal Box
   - Input/output
   - Decision
10. Who invented C Language?
    - Charles Babbage
    - Grahame
    - Dennis Ritchie
    - Steve Jobs

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DEPARMENT OF COMPUTER SCIENCE

BRIDGE COURSE POST-ASSESSMENT TEST MARKS

I SEM BCA SEC 'B' PROBLEM SOLVING TECHNIQUES USING C

SL NO	FULL NAME	MARKS
1	Manu srinivas	9
2	Mohammed Abdul Wahid	10
3	Naziya arfa anjum	10
4	Nandini	8
5	Nitesh Rao S	10
6	Priya T	9
7	Mohammed Abdul Wahid	10
8	Pratiksha singh	8
9	Praveen	8
10	Mohammed Abdul Wahid	8
11	Mohammed huzaif	8
12	Mohammed Abdul Wahid	8
13	Priya T	8
14	Mohammed Abdul Wahid	10
15	Mohammed huzaif	10
16	Priyanka M S	9
17	Priyanka p	9
18	Owaiz ahmed	6
19	Priyanka p	9
20	Mohammed rehan	10
21	Nafiha	9
22	Mubarak ali	9
23	Mubarak ali	9
24	Pruthvi Raj D	10
25	Thanyata. P.S	9
26	Mohammed Owais	9

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BRIDGE COURSE POST-ASSESSMENT TEST MARKS

I SEM BCA SEC 'A' PROBLEM SOLVING TECHNIQUES USING C

sl no	FULL NAME	SCORE
1	Kusuma N	6
2	Josephin Mary D	6
3	Bhanushree	10
4	Durga Deekshith N M	5
5	Dafny Fathima	7
6	Karan.r	5
7	Kavitha s	8
8	Humera saima	7
9	Asfiya	8
10	Arun	7
11	Jathin.m	5
12	Kubra Khan N S	4
13	David	9
14	K. AbinayaShree	7
15	Deekshitha k	7
16	Divya	5
17	Abdul shekeeruddin j	5
18	Dafny Fathima	10
19	Vijay Kumar BV	3
20	Amit Kumar	8
21	Anusha. S	5
22	Dhaniya shree M	7
23	Abdul shekeeruddin j	7
24	Chandana B	6

25	Manasa.j	6
26	Batta rohith	6
27	Archana parnoal	10
28	Lalithkumar	10
29	Madhu	9
30	G.R.Deekshitha	5
31	Nisha Ramanand Chaurasiya	8
32	Kushal Singh Dhami	10
33	Aashish.s	7
34	Jasna	7
35	Darshan kumar AR	7
36	Abhishek G	7
37	Dhanusha	4
38	Anirudh.r	8
39	C Petrick Joseph	8
40	Ansar Alam	8
41	Chandan.s	6
42	Aashish	9
43	Eshwar R	9
44	Chandu R	9
45	Danies B	9
46	FRANCIS ARUN.S	5
47	Prashanth	9
48	Danies B	9
49	Divya k	7
50	Likithashree	7
51	Ameenullabaig	8

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BRIDGE COURSE POST-ASSESSMENT TEST MARKS

I SEM BSc DATA SCIENCE PROBLEM SOLVING TECHNIQUES USING C

SL NO	NAMES	MARKS
1	Lekhana Jagadeesh	4
2	Grisham Girish	7
3	Sumit Kumar	4
4	Vandana k	4
5	Sanjana yadav	3
6	Sumit Kumar	4
7	Jamula.M	5
8	Bharath.B	7
9	Sumit Kumar	3
10	Krushna Santosh	4
11	Mohammed haris	7
12	Bhuvanesh	7
13	Alwyn Anush AR	7
14	Abid	4
15	Mubasheer Ahmed.F	8
16	Muhammed Ayaan Sheriff	5
17	Hepzibah vincy	8
18	Bommu Ramya	4

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Bangalore - 43

Head
Department of Computer Science
Indian Academy Degree College
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Bangalore-560043

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DEPARTMENT OF COMPUTER SCIENCE

Bridge course- BCA 2023-2027

I SEM BCA 'A','C'

&

I B.Sc Data Science

DATA STRUCTURES

Date 24/07/2023-28/07/2023

Duration -05 Hrs

Handled By

Ms. Sreeparna

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Bangalore - 43.

HOD

Mrs. Anuradha P

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road,
Bangalore-560043

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COMPUTER SCIENCE
Bridge Course- BCA 2023-2024
Data Structures

Date: 24.07.23 – 28.07.23

Course Objectives:

- To bridge the gap between what the students know and what they are going to learn
- To make learners familiar with basic components and functionalities of C programming which are essential to learn data structures
- To impart knowledge on storing, managing and performing different operations on data in various structures efficiently

Course Outcomes:

At the end of the course the students will be able to

- Understand the importance of data structures
- Understand the basic C syntax necessary for data structures lab
- Understand the basic operations on data structures viz. traversing, searching, insertion, deletion, sorting, merging

Course Content:

1. Basic Computer Organization.
   Assignment- Generation of Computers, Types of Memory
2. Reasons for studying computer programming
3. Basic C structures needed for DS Lab:
   (a) Taking input
   (b) Printing output
   (c) Example problems
4. Basic operations on data structures:
   (a)traversing
   (b)searching
   (c)insertion
   (d)deletion
   (e)sorting
   (f)merging

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COMPUTER SCIENCE
Bridge Course- BCA 2023-2024
Data Structures
Pre Assessment Test

1) Which of the following is not a valid datatype in C?

a. int
b. char
c. sink
d. float

2) What is smallest unit of the information?

e. A bit
f. A byte
g. A block
h. A nibble

3) Which of the following is used to access the memory and deal with their addresses?

a. Arrays
b. Pointers
c. Union
d. Structures

4) Data structure is a way to:

a. Store data
b. Organize data
c. Use data efficiently
d. All of the above

5) Which of the following statements is false?

a. Data structure is a programming language
b. C is a programming language
c. JAVA is a programming language
d. Python is a programming language

a. Normal language
b. Computer language
c. Assembly language
d. High-level language

7) Which of the following is the best code?

a. Which is easy to write for the programmer
b. Which has less lines of code
c. Which is time and memory efficient
d. None of the above

8) _____is a picture in which the flows of computational paths are depicted.

a. Algorithm
b. Program
c. Code
d. Flow chart

9) The function printf is used to ___

a. To take logical decisions
b. Input a set of values
c. Print a set of values
d. Do mathematical manipulations

10) Arrays:

a. Have same data type
b. Are stored in contiguous memory locations
c. Are a type of data structure
d. All of the above

Data Structures Bridge Course-content

Basic Computer Organization

A computer is a fast and accurate device, which can accept data, store data, process them and give, desired results as output. The computer is organized into four units as shown in the following diagram.

In computer engineering, micro-architecture, also called computer organization, is the way a given instruction set architecture is implemented on a processor. A given ISA may be implemented with different micro-architectures.

Computer organization consist of following parts

1. CPU – central processing unit
2. Memory
3. Input devices
4. Output devices

CPU – central processing unit

Introduction

It is alternatively referred to as the **brain of the computer**, **processor**, **central processor**, or **microprocessor**, the **CPU** (pronounced as C-P-U) was first developed at Intel with the help of Ted Hoff in the early 1970's and is short for **Central Processing Unit**. The computer CPU is responsible for handling all instructions it receives from hardware and software running on the computer.

CPU is considered as the brain of the computer. CPU performs all types of data processing operations. It stores data, intermediate results and instructions (program).It controls the operation of all parts of computer.

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Pre-screening- Mark statement

S.No	Student First Name	Student Last Name	Class & section	Marks
1	BHANU	SHREE	BCA-I-A	5
2	DURGA	DEEKSHITH N.M	BCA-I-A	8
3	CHANDANA	B	BCA-I-A	7
4	KUSUMA	N	BCA-I-A	6
5	ARUN	M	BCA-I-A	7
6	KARAN	R	BCA-I-A	4
7	ABDUR	RAHEEM	BCA-I-A	4
8	K. ABINAYA	SHREE	BCA-I-A	6
9	KAVITHA	S	BCA-I-A	4
10	DIVYA K	DIVYA K	BCA-I-A	5
11	KUSHAL	SINGH DHAMI	BCA-I-A	4
12	DANIES	BERNARD	BCA-I-A	4
13	VIJAY KUMAR	BV	BCA-I-A	3
14	HUMERA	SAIMA	BCA-I-A	8
15	ASFIYA	ASFIYA	BCA-I-A	4
16	ARCHANA	PARNOAL	BCA-I-A	9
17	AASHISH	S	BCA-I-A	4
18	ANUSHA. S	ANUSHA. S	BCA-I-A	3
19	MADHU	MADHU	BCA-I-A	7
20	LAVAN	KISHORE	BCA-I-A	9
21	MANASA.J	MANASA.J	BCA-I-A	7
22	ABDUL	SHEKEERUDDIN J	BCA-I-A	7
23	DHANIYA	SHREE M	BCA-I-A	8
24	JOSEPHIN MARY D	MARY	BCA-I-A	6
25	ABHISHEK G	ABHISHEK	BCA-I-A	10
26	ABDUL	AZEEM	BCA-I-A	3
27	KUBRA	KHAN	BCA-I-A	8

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28	DAVID	DAVID	BCA-I-A	5
29	DAFNY	FATHIMA	BCA-I-A	6
30	C PETRICK	JOSEPH	BCA-I-A	8
31	BATTA	ROHITH	BCA-I-A	6
32	CHANDAN	S	BCA-I-A	6
33	LALITH	KUMAR	BCA-I-A	5
34	ESHWAR	R	BCA-I-A	6
35	JASNA	RANI	BCA-I-A	6
36	JATHIN	M	BCA-I-A	6
37	ABUBAKAR SIDDIQ	KHAN	BCA-I-A	6
38	NISHA	CHAURASIYA	BCA-I-A	10
39	ANIRUDH	R	BCA-I-A	8
40	FRANCIS ARUN	ARUN	BCA-I-A	3
41	DIVYA	DIVYA	BCA-I-A	4
42	CHANDU	R	BCA-I-A	3
43	DHANUSHA	REDDY	BCA-I-A	10
44	ANSAR	ALAM	BCA-I-A	9
45	AMIT	KUMAR	BCA-I-A	3
46	DARSHAN KUMAR AR	DARSHAN KUMAR AR	BCA-I-A	3
47	DEEKSHITHA	K	BCA-I-A	3
48	G.R.	DEEPIKA	BCA-I-A	3
49	AMEEN	BAIG	BCA-I-A	3
50	DIVYA	R	BCA-I-A	3
51	SHEIKH	FARHAN	BCA-I-C	5
52	UMME	AIMAN	BCA-I-C	7
53	SURESH	V	BCA-I-C	5
54	SYED SHOAIB	MEHDI	BCA-I-C	6
55	USHA K	K	BCA-I-C	5
56	TEJAS	KUMAR	BCA-I-C	6
57	SHAGUN	GUPTA	BCA-I-C	9
58	ROSHAN	BAM	BCA-I-C	7
59	V DHANUSH	.	BCA-I-C	6

60	SINCHANA SN	SINCHANA SN	BCA-I-C	6
61	VINAY	BAHADUR	BCA-I-C	4
62	SANJANA	SANJANA	BCA-I-C	7
63	SARAH	ANAGA T	BCA-I-C	6
64	SUSAN CATHARINE J	CATHARINE	BCA-I-C	2
65	YASHASWINI	C G	BCA-I-C	4
66	DIPALI	WAGADARI	BCA-I-C	4
67	SURYA	NARAYANA	BCA-I-C	4
68	REVANTH	M	BCA-I-C	7
69	VIGNESH	S	BCA-I-C	5
70	TAPAN	SAHU	BCA-I-C	6
71	TEJASHWINI	S	BCA-I-C	4
72	SARATH KUMAR	SARATH	BCA-I-C	10
73	SUMA	LATHA V	BCA-I-C	1
74	VANDANA	M	BCA-I-C	5
75	RONALDO	DOMINIC	BCA-I-C	6
76	SAMEER	ULLA	BCA-I-C	2
77	SUMAN	JANA	BCA-I-C	10
78	SHERWIN	SURESH	BCA-I-C	7
79	VISHAL	SINGH	BCA-I-C	1
80	RUDRESH	M	BCA-I-C	7
81	THANVANTH	V	BCA-I-C	6
82	SATHYA	S	BCA-I-C	4
83	VINAY	.G	BCA-I-C	3
84	SYED	TAQEEB	BCA-I-C	3
85	ROSHNI KUMARI	ROSHNI KUMARI	BCA-I-C	2
86	Z. MOHAMMED	TAHRIM	BCA-I-C	6
87	ZAIMA	SHAIK	BCA-I-C	4
88	ZOONIALI	FOUZIA	BCA-I-C	3
89	SYED	RAQIB	BCA-I-C	6

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90	RAKSHITH	C	BCA-I-C	2
91	YUVARAJ	R	BCA-I-C	10
92	VISHALINI	S	BCA-I-C	5
93	RAJEEV	SHARMA.R	BCA-I-C	8
94	SYED	USMAN	BCA-I-C	6
95	SOUNDARYA	KUMAR	BCA-I-C	8
96	S	KAVITHA	BCA-I-C	4
97	VEENA	KUMARI	BCA-I-C	9
98	SAGAR. R.	SAGAR. R.	BCA-I-C	8
99	RITA	B	BCA-I-C	2
100	S RUQAIYA	FARHEEN	BCA-I-C	9
101	SMITHA	SHARON	BCA-I-C	5
102	YASHODHA	.D	BCA-I-C	4
103	RUMAISA	KHAN	BCA-I-C	7
104	RAJESH	R	BCA-I-C	4
105	SUMANTH GM	SUMANTH GM	BCA-I-C	10
106	YASHWANTH B S	YASHWANTH B S	BCA-I-C	10
107	MOHAMMED	MAAZ	BCA-I-C	4
108	EDRENA	THANIYA	BSc-DS	4
109	RUCHITHA	REDDY	BSc-DS	4
110	BHARATH	B	BSc-DS	4
111	LEKHANA	JAGADEESH	BSc-DS	4
112	SUMIT	KUMAR	BSc-DS	3
113	HEPZIBAH	VINCY	BSc-DS	5
114	VANDANA	K	BSc-DS	5
115	JAMULA	M	BSc-DS	6
116	SANJANA	YADAV	BSc-DS	10
117	KRUSHNA	SONTAKKE	BSc-DS	5
118	GRISHAM	GIRISH	BSc-DS	6
119	ALWYN	ANUSH	BSc-DS	7
120	BHUVANESH	S	BSc-DS	7
121	AYAAN	SHERIFF	BSc-DS	7

60	SINCHANA SN	SINCHANA SN	BCA-I-C	6
61	VINAY	BAHADUR	BCA-I-C	4
62	SANJANA	SANJANA	BCA-I-C	7
63	SARAH	ANAGA T	BCA-I-C	6
64	SUSAN CATHARINE J	CATHARINE	BCA-I-C	2
65	YASHASWINI	C G	BCA-I-C	4
66	DIPALI	WAGADARI	BCA-I-C	4
67	SURYA	NARAYANA	BCA-I-C	4
68	REVANTH	M	BCA-I-C	7
69	VIGNESH	S	BCA-I-C	5
70	TAPAN	SAHU	BCA-I-C	6
71	TEJASHWINI	S	BCA-I-C	4
72	SARATH KUMAR	SARATH	BCA-I-C	10
73	SUMA	LATHA V	BCA-I-C	1
74	VANDANA	M	BCA-I-C	5
75	RONALDO	DOMINIC	BCA-I-C	6
76	SAMEER	ULLA	BCA-I-C	2
77	SUMAN	JANA	BCA-I-C	10
78	SHERWIN	SURESH	BCA-I-C	7
79	VISHAL	SINGH	BCA-I-C	1
80	RUDRESH	M	BCA-I-C	7
81	THANVANTH	V	BCA-I-C	6
82	SATHYA	S	BCA-I-C	4
83	VINAY	.G	BCA-I-C	3
84	SYED	TAQEEB	BCA-I-C	3
85	ROSHNI KUMARI	ROSHNI KUMARI	BCA-I-C	2
86	Z. MOHAMMED	TAHRIM	BCA-I-C	6
87	ZAIMA	SHAIK	BCA-I-C	4
88	ZOONIALI	FOUZIA	BCA-I-C	3
89	SYED	RAQIB	BCA-I-C	6

122	MUBASHEER	AHMED.F	BSc-DS	4
123	ABID	AHMED	BSc-DS	5
124	LIKITHA	SHREE	BSc-DS	7
125	BOMMU	RAMYA	BSc-DS	5

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Hennur Cross, Kalyan Nagar
Bangalore - 43.

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043

Data Structures Bridge Course-content

Basic Computer Organization

A computer is a fast and accurate device, which can accept data, store data, process them and give, desired results as output. The computer is organized into four units as shown in the following diagram.

In computer engineering, micro-architecture, also called computer organization, is the way a given instruction set architecture is implemented on a processor. A given ISA may be implemented with different micro-architectures.

Computer organization consist of following parts

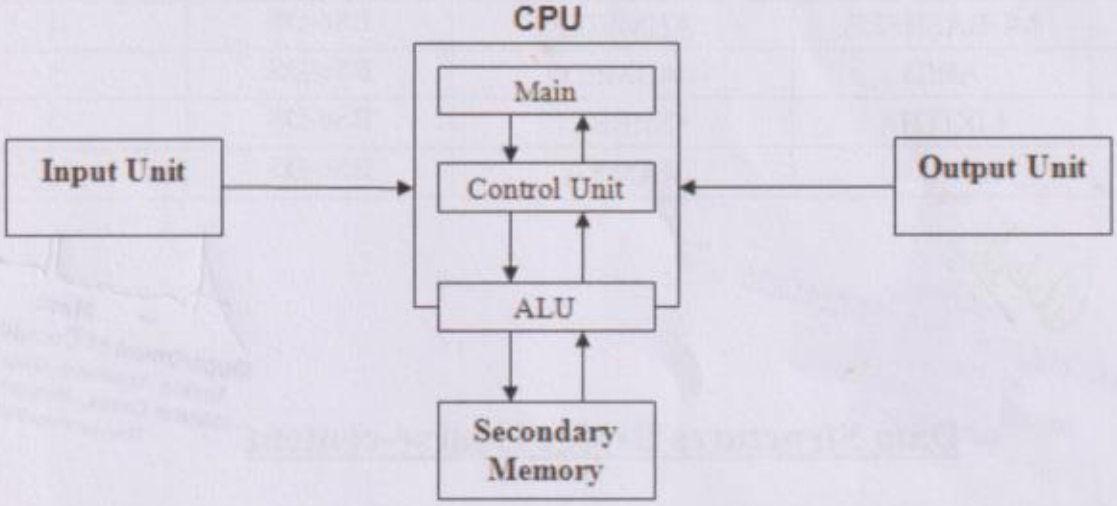
1. CPU – central processing unit
2. Memory
3. Input devices
4. Output devices

CPU – central processing unit

Introduction

It is alternatively referred to as the **brain of the computer**, **processor**, **central processor**, or **microprocessor**, the **CPU** (pronounced as C-P-U) was first developed at Intel with the help of Ted Hoff in the early 1970's and is short for **Central Processing Unit**. The computer CPU is responsible for handling all instructions it receives from hardware and software running on the computer.

CPU is considered as the brain of the computer. CPU performs all types of data processing operations. It stores data, intermediate results and instructions (program).It controls the operation of all parts of computer.



CPU itself has following three components

1. **ALU (Arithmetic Logic Unit)**
   All arithmetic calculations and logical operation are performed using the Arithmetic/Logical Unit or ALU

2. **Memory Unit**
   A memory is just like a human brain. It is used to store data and instruction. Computer memory is used to Stores information being processed by the CPU

3. **Control Unit**
   Control unit help to perform operations of input unit, output unit, Memory unit and ALU in a sequence.

Memory

Computer **memory** is any physical device capable of storing information temporarily or permanently. For example, Random Access Memory **RAM** is a type of volatile memory that is stores information on an integrated circuit, and that is used by the operating system, software, hardware, or the user.

Computer memory divided into two parts

1. **Volatile memory**
   Volatile memory is a temporary memory that loses its contents when the computer or hardware device loses power.eg. **RAM**
2. **Non-volatile memory**
   Non-volatile memory keeps its contents even if the power is lost. Example: ROM or EPROM is a good example of a non-volatile memory

Input Devices

A device that can be used to insert data into a computer system is called as input device. It allows people to supply information to computers. An **input device** is any hardware device that sends

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2. Memory
3. Input devices
4. Output devices

CPU – central processing unit

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data to the computer, without any input devices, a computer would only be a display device and not allow users to interact with it, much like a TV.The most fundamental pieces of information are keystrokes on a *keyboard* and clicks with a *mouse*. These two input devices are essential for you to interact with your computer. Input devices represent one type of computer **peripheral.**
Examples of input devices include keyboards, **mouse**, scanners, digital cameras and joysticks.

Output Devices

A device which is used to display result from a computer is called as output device. It Allows people to receive information from computers. An **output device** is any peripheral that receives or displays output from a computer. The picture shows an inkjet printer, an output device that can make a hard copy of anything being displayed on a monitor. Output device is electronic equipment connected to a computer and used to transfer data out of the computer in the form of text, images, sounds or print.
Examples of output devices include Printer, Scanner, Monitor, etc.

Assignment-

- Types of programming language

Reasons for studying computer programming

Introduction

Intelligence is one of the key characteristics which differentiate a human being from other living creatures on the earth. Basic intelligence covers day to day problem solving and making strategies to handle different situations which keep arising in day to day life. One person goes Bank to withdraw money. After knowing the balance in his account, he/she decides to with draw the entire amount from his account but he/she has to leave minimum balance in his account. Here deciding about how much amount he/she may with draw from the account is one of the examples of the basic intelligence. During the process of solving any problem, one tries to find the necessary steps to be taken in a sequence. In this Unit you will develop your understanding about problem solving and approaches.

Problem Solving

Can you think of a day in your life which goes without problem solving? Answer to this question is of course, No. In our life we are bound to solve problems. In our day to day activity such as purchasing something from a general store and making payments, depositing fee in school, or withdrawing money from bank account. All these activities involve some kind of problem solving. It can be said that whatever activity a human being or machine do for achieving a specified objective comes under problem solving. To make it clearer, let us see some other examples.

Example1: If you are watching a news channel on your TV and you want to change it to a sports channel, you need to do something i.e. move to that 2 channel by pressing that channel number on your remote. This is a kind of problem solving.

Example 2: One Monday morning, a student is ready to go to school but yet he/she has not picked up those books and copies which are required as per timetable. So here picking up books and copies as per timetable is a kind of problem solving.

Example 3: If someone asks to you, what is time now? So seeing time in your watch and telling him is also a kind of problem solving.

Example 4: Some students in a class plan to go on picnic and decide to share the expenses among them. So, calculating total expenses and the amount an individual have to give for picnic is also a kind of problem solving.

Now, broadly we can say that problem is a kind of barrier to achieve something and problem solving is a process to get that barrier removed by performing some sequence of activities. Here it is necessary to mention that all the problems in the world cannot be solved. There are some problems which have no solution, and these problems are called Open Problems. If you can solve a given problem, then you can also write an algorithm for it. In next section we will learn what is an algorithm.

Basic C structures needed for DS Lab

C Is a Structured Language

The term *block-structured* applied to a computer language. Although the term block-structured language does not strictly apply to C, C is commonly referred to simply as a *structured* language. It has many similarities to other structured languages, such as ALGOL, Pascal, and Modula-2. A structured language offers a variety of programming possibilities. For example, structured languages typically support several loop constructs, such as **while**, **do-while**, and **for**.

In a structured language, the use of **goto** is either prohibited or discouraged and is not the common form of program control (as is the case in standard BASIC and traditional FORTRAN, for example). A structured language allows you to place statements anywhere on a line and does not require a strict field concept (as some older FORTRANs do).

Printing output

In C programming, printf() is one of the main output function. The function sends formatted output to the screen.

```
#include <stdio.h>
int main()
{
  // Displays the string inside quotations
  printf("C Programming");
  return 0;
}
```

How does this program work?

- All valid C programs must contain the main() function. The code execution begins from the start of the main() function.
- The printf() is a library function to send formatted output to the screen. The function prints the string inside quotations.
- To use printf() in our program, we need to include stdio.h header file using the #include <stdio.h> statement.
- The return 0; statement inside the main() function is the "Exit status" of the program. It's optional.

Taking input

In C programming, scanf() is one of the commonly used function to take input from the user. The scanf() function reads formatted input from the standard input such as keyboards.

```
#include <stdio.h>
int main()
{
   int testInteger;
   printf("Enter an integer: ");
   scanf("%d", &testInteger);
   printf("Number = %d",testInteger);
   return 0;
}
```

Here, we have used %d format specifier inside the scanf() function to take int input from the user. When the user enters an integer, it is stored in the testInteger variable.

Here &testInteger gets the address of testInteger, and the value entered by the user is stored in that address.

Format Specifiers for I/O

As you can see from the above examples, we use

- %d for int
- %f for float
- %lf for double
- %c for char

What is a data structure?

As the name indicates, Data Structure is used for organizing the data in memory. There are various ways of organizing the data in the memory, for eg. array, list, stack, queue, and many more.

The data structure isn't a programming language like C, C++, Java, etc. It is a set of algorithms that can be used in any programming language to organize the data in the memory.

There are 2 main types of Data Structure :

Primitive Data Structure

Non – Primitive Data Structure

Reasons for studying data structures

1)Data Structures are necessary for designing efficient algorithms.

2)It provides reusability and abstraction.

3)Using appropriate data structures can help programmers save a good amount of time while performing operations such as storage, retrieval, or processing of data.

4)Manipulation of large amounts of data is easier.

Example data structures

- An **array** is a number of elements in a specific order, typically all of the same type (depending on the language, individual elements may either all be forced to be the same type, or may be of almost any type). Elements are accessed using an integer index to specify which element is required. Typical implementations allocate contiguous memory words for the elements of arrays (but this is not always a necessity). Arrays may be fixed-length or resizable.
- A **linked list** (also just called list) is a linear collection of data elements of any type, called nodes, where each node has itself a value, and points to the next node in the linked list. The principal advantage of a linked list over an array is that values can always be efficiently inserted and removed without relocating the rest of the list. Certain other operations, such as random access to a certain element, are however slower on lists than on arrays.
- **Hash tables**, also known as hash maps, are data structures that provide fast retrieval of values based on keys. They use a hashing function to map keys to indexes in an array, allowing for constant-time access in the average case. Hash tables are commonly used in dictionaries, caches, and database indexing. However, hash collisions can occur, which can impact their performance. Techniques like chaining and open addressing are employed to handle collisions.
- **Graphs** are collections of nodes connected by edges, representing relationships between entities. Graphs can be used to model social networks, computer networks, and transportation networks, among other things. They consist of vertices (nodes) and edges (connections between nodes). Graphs can be directed or undirected, and they can have cycles or be acyclic. Graph traversal algorithms include breadth-first search and depth-first search.
- **Stacks and queues** are abstract data types that can be implemented using arrays or linked lists. A stack has two primary operations: push (adds an element to the top of the stack) and pop (removes the topmost element from the stack), that follow the Last In, First Out (LIFO) principle. Queues have two main operations: enqueue (adds an

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   printf("Number = %d",testInteger);
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Format Specifiers for I/O

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element to the rear of the queue) and dequeue (removes an element from the front of the queue) that follow the First In, First Out (FIFO) principle.

- **Trees** represent a hierarchical organization of elements. A tree consists of nodes connected by edges, with one node being the root and all other nodes forming subtrees. Trees are widely used in various algorithms and data storage scenarios. Binary trees (particularly heaps), AVL trees, and B-trees are some popular types of trees. They enable efficient and optimal searching, sorting, and hierarchical representation of data.

Basic operations on data structures

Traversing

Traversing a Data Structure means to visit the element stored in it. It visits data in a systematic manner. This can be done with any type of DS.

Searching

Searching means to find a particular element in the given data-structure. It is considered as successful when the required element is found. Searching is the operation which we can performed on data-structures like array, linked-list, tree, graph, etc.

Insertion

It is the operation which we apply on all the data-structures. Insertion means to add an element in the given data structure. The operation of insertion is successful when the required element is added to the required data-structure. It is unsuccessful in some cases when the size of the data structure is full and when there is no space in the data-structure to add any additional element. The insertion has the same name as an insertion in the data-structure as an array,

Deletion

It is the operation which we apply on all the data-structures. Deletion means to delete an element in the given data structure. The operation of deletion is successful when the required element is deleted from the data structure.

Sorting

Sorting in Data Structure then it's more relevant to rearrange the data or element in ascending or descending order. For example, consider you have five siblings and you want to arrange them according to height.

Merging

Merging two data structures means combining two separate data structures into one single data structure of the same type. For instance, if the first array consists of 3 elements and the second array consists of 5 elements then the resulting array consists of 8 elements. This resulting array is known as a merged array.

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Attendance:

Sl No	Name Of The Student	Class& Section	24/07/23	25/07/23	26/07/23	27/07/23	28/07/23
1	ABDUL SHEKEERUDDIN J	BCA-I-A	P	P	A	A	P
2	ABDUR RAHEEM	BCA-I-A	P	P	P	A	P
3	ABSHIEK G	BCA-I-A	P	P	P	P	P
4	ABUBAKER SIDDIQ KHAN	BCA-I-A	P	P	P	P	P
5	AFZAH ANJUM	BCA-I-A	A	A	A	A	A
6	AKMAL SHARIFF	BCA-I-A	P	P	A	P	A
7	AMEEN ULLA BAIG	BCA-I-A	P	P	P	A	A
8	AMIT KUMAR	BCA-I-A	A	P	A	A	P
9	ANIRUDH R	BCA-I-A	P	P	P	P	P
10	ANKITHA SUSHMA RAJ D.L	BCA-I-A	P	P	P	P	A
11	ANSAR ALAM	BCA-I-A	P	P	P	P	P
12	ANUSHA S	BCA-I-A	P	P	A	P	P
13	ARCHANA PARNOAL	BCA-I-A	P	P	P	A	P
14	ARUN M RUDRAKSHI	BCA-I-A	P	P	P	P	P
15	ASFIYA	BCA-I-A	P	P	P	P	P
16	ASHISH S	BCA-I-A	P	P	P	P	P
17	AYYAPPA G S	BCA-I-A	A	A	A	A	A
18	B V VIJAY KUMAR	BCA-I-A	P	P	P	P	P
19	BATTA ROHITH	BCA-I-A	P	P	P	P	P
20	BHANUSHREE D	BCA-I-A	P	P	P	P	P
21	C PETRICK JOSEPH	BCA-I-A	P	P	P	P	P
22	CHANDAN S	BCA-I-A	P	P	P	P	P
23	CHANDHANA B	BCA-I-A	P	P	P	P	P
24	CHANDU R	BCA-I-A	A	P	A	P	P
25	CHAURASIA NISHA RAMANAND	BCA-I-A	P	A	P	P	P
26	DAFNY FATHIMA	BCA-I-A	P	P	P	P	P
27	DANIES B	BCA-I-A	P	P	P	P	P

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28	DANISH MALLIK A	BCA-I-A	P	A	P	P	A
29	DARSHAN KUMAR A R	BCA-I-A	P	P	P	P	P
30	DAVID R	BCA-I-A	P	P	P	P	P
31	DEEKSHITHA K	BCA-I-A	P	P	A	P	P
32	DHANIYA SHREE M	BCA-I-A	P	P	P	P	P
33	DHANUSH V R	BCA-I-A	P	P	A	P	A
34	DHANUSHA R	BCA-I-A	P	P	P	P	P
35	DIVYA A	BCA-I-A	P	P	P	P	P
36	DIVYA K	BCA-I-A	P	P	P	P	P
37	DIVYA R	BCA-I-A	P	P	P	P	A
38	DURGA DEEKSHITH N M	BCA-I-A	P	A	P	P	P
39	ESHWAR	BCA-I-A	P	P	P	P	P
40	FAIZAN SHARIFF	BCA-I-A	P	P	A	P	A
41	FRANCIS ARUN S	BCA-I-A	P	P	P	P	P
42	G R DEEKSHITHA	BCA-I-A	P	P	P	P	P
43	GOULANIN MOYA HERMAN	BCA-I-A	A	A	A	A	A
44	HUMERA SAIMA SHAIKH	BCA-I-A	P	P	P	P	P
45	HURAIN FATHIMA A S	BCA-I-A	P	A	P	P	P
46	JANANI R	BCA-I-A	P	A	P	A	A
47	JASNA RANI SAHOO B S	BCA-I-A	P	P	P	P	P
48	JATHIN M	BCA-I-A	P	P	P	P	P
49	JOSEPHIN MARY D	BCA-I-A	P	P	P	A	P
50	K ABINAYASHREE	BCA-I-A	P	P	P	P	P
51	K MOHAMMED IZHAAN	BCA-I-A	P	P	A	P	A
52	KABIR ULLA KHAN	BCA-I-A	A	A	A	A	A
53	KARAN R	BCA-I-A	P	P	P	P	P
54	KAVITHA S	BCA-I-A	P	P	P	P	P
55	KUBRA KHAN N S	BCA-I-A	P	P	P	P	P
56	KUSHAL SINGH DHAMI	BCA-I-A	P	P	P	A	P
57	KUSUMA N	BCA-I-A	P	P	P	P	P
58	LAKISH KUMAR S	BCA-I-A	P	P	P	A	P
59	LALITH KUMAR M	BCA-I-A	P	P	P	P	P
60	LAVAN KISHORE C B	BCA-I-A	P	P	P	P	P
61	MADHU J N	BCA-I-A	P	P	P	A	P
62	MAHALAXMI	BCA-I-A	A	A	A	A	A
63	MANASHA J	BCA-I-A	P	P	P	P	P
64	RAJEEV SHARMA	BCA-I-C	P	P	P	P	P
65	RAJESH R	BCA-I-C	A	P	P	P	P
66	RAKSHITH C	BCA-I-C	P	P	P	P	P

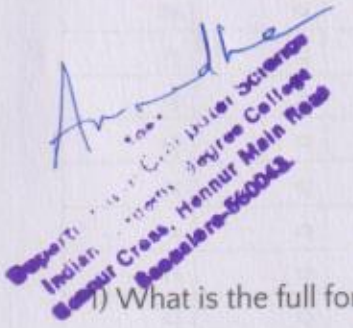
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68	RAMYA R	BCA-I-C	P	P	P	P	P
69	REVANTH M	BCA-I-C	P	P	P	P	P
70	RISHIT REDDY R	BCA-I-C	A	A	A	A	A
71	RITA B	BCA-I-C	P	P	P	A	A
72	ROHIT S	BCA-I-C	P	P	P	A	A
73	RONALDO DOMINIC DOLL	BCA-I-C	P	P	P	P	P
74	ROSHAN BAM	BCA-I-C	P	P	P	P	P
75	ROSHNI KUMARI	BCA-I-C	P	P	P	P	P
76	RUDRESH M	BCA-I-C	P	P	P	P	P
77	RUMAISA KHAN	BCA-I-C	P	P	P	P	P
78	S KAVITHA	BCA-I-C	P	A	P	P	P
79	S RUQAIYA FARHEEN	BCA-I-C	P	P	P	P	P
80	S SHERWIN SURESH	BCA-I-C	P	P	P	P	P
81	SAGAR R	BCA-I-C	P	P	P	P	P
82	SAMEER ULLA	BCA-I-C	P	A	P	P	A
83	SANJANA R	BCA-I-C	P	P	P	P	P
84	SANTHOSH KUMAR L	BCA-I-C	A	A	A	A	A
85	SARAH ANAGA T	BCA-I-C	P	P	P	P	P
86	SARATH KUMAR	BCA-I-C	P	P	P	P	P
87	SATYA S	BCA-I-C	P	P	P	P	A
88	SHAGUN B	BCA-I-C	P	P	P	P	P
89	SHEIKHFARHAN	BCA-I-C	P	P	P	A	A
90	SINCHANA S N	BCA-I-C	P	P	P	P	P
91	SMITHA SHARON	BCA-I-C	P	P	P	P	P
92	SOUNDARYA K	BCA-I-C	P	P	P	P	P
93	SRI VIDHYA S	BCA-I-C	P	P	P	P	P
94	SUMALATHA V	BCA-I-C	P	P	P	P	P
95	SUMANJANA	BCA-I-C	P	P	P	P	P
96	SUMANTH G M	BCA-I-C	A	A	A	P	P
97	SURESH V	BCA-I-C	P	P	A	A	A
98	SURYANARAYANA	BCA-I-C	P	P	P	P	P
99	SUSAN CATHARINE J	BCA-I-C	P	P	P	P	P
100	SYED RAQIB JAMAL	BCA-I-C	P	P	P	P	P
101	SYED SHOAIB MEHDI	BCA-I-C	P	A	P	A	P
102	SYED TAHA USMAN	BCA-I-C	P	A	P	P	P
103	SYED TAQEEB	BCA-I-C	P	P	P	P	P
104	TAPAN SAHU	BCA-I-C	P	P	P	P	P
105	TEJAS KUMAR D	BCA-I-C	P	P	P	P	P

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106	TEJASHWINI S	BCA-I-C	P	P	P	P	P
107	THANVANTH V	BCA-I-C	P	P	P	P	P
108	UMME AIMAN	BCA-I-C	P	P	P	P	P
109	USHA K	BCA-I-C	P	P	P	P	P
110	V DHANUSH	BCA-I-C	P	P	P	P	P
111	VANDANA M	BCA-I-C	P	P	P	P	P
112	VEENA KUMARI	BCA-I-C	P	P	P	P	P
113	VIGNESH	BCA-I-C	P	P	P	P	P
114	VINAY BAHADUR G	BCA-I-C	P	P	P	A	P
115	VINAY G	BCA-I-C	P	P	P	P	P
116	VISHAL SINGH	BCA-I-C	P	P	P	P	P
117	VISHALINI S	BCA-I-C	P	P	P	P	P
118	WAGADARI DIPALI SIDRAM	BCA-I-C	P	P	P	P	P
119	YASHASHWINI	BCA-I-C	P	P	P	P	P
120	YASHODHA D	BCA-I-C	P	P	P	P	A
121	YASHWANTH B S	BCA-I-C	A	A	P	P	P
122	YUVARAJ R	BCA-I-C	P	P	P	P	P
123	Z MOHAMMED TAHRIM	BCA-I-C	P	P	P	P	A
124	ZAIMA SHAIK	BCA-I-C	P	P	P	P	P
125	ZOONI ALI FOUZIA	BCA-I-C	P	P	P	P	P
126	ABID AHMED SHARIFF	BSc-DS	P	P	P	P	P
127	SUMIT KUMAR	BSc-DS	P	P	P	P	P
128	MOHAMMED HARIS	BSc-DS	P	P	A	P	P
129	RUCHITHA REDDY G V	BSc-DS	P	P	P	P	A
130	MAGED MOHAMMED MOTEA ABDULLAH GHALEB	BSc-DS	A	A	A	A	A
131	MUHAMMED AYAAN SHERIFF	BSc-DS	P	P	P	P	P
132	ABHISHA B	BSc-DS	A	A	A	A	A
133	SONTAKKE KRUSHNA SANTOSH	BSc-DS	P	P	P	P	P
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136	LEKHANA JAGADEESH	BSc-DS	P	P	P	P	P
137	AYUSH SINGH	BSc-DS	A	P	P	A	A
138	JAMULA.M	BSc-DS	P	P	P	P	P
139	HEPZIBAH VINCY ISSAC	BSc-DS	P	P	P	P	A
140	MUBASHEER AHMED F	BSc-DS	P	P	P	P	P
141	LIKITHA SHREE M	BSc-DS	P	P	P	P	P

142	BOMMU RAMYA	BSc-DS	P	P	P	P	P
143	GRISHAM G	BSc-DS	P	P	P	P	P
144	BHARATH B	BSc-DS	P	P	P	P	A
145	EDRENA THANIYA M	BSc-DS	P	P	P	P	A
146	SANJANA YADAV	BSc-DS	P	P	P	P	P
147	ALWYN ANUSH A R	BSc-DS	P	P	P	P	P



BRIDGE COURSE ASSESSMENT TEST
COMPUTER SCIENCE
DATA STRUCTURES

1) What is the full form of CPU?

a. central processing unit
b. common processor unit
c. central programming unit
d. None of the above

2) Why do we need to study computer programming?

a. to solve problems
b. to pass a set of instructions to the computer
c. to build software
d. all of the above

3) To use "printf" and "scanf" in our program, which header file do we use?

a. std.h
b. stdio.h
c. inputoutput.h
d. io.h

4) Which of the following is not a valid programming type?

a. High Level
b. Middle Level
c. Tertiary Level
d. Machine Level

5) Which of the following is not a part of CPU?

e. Modem
f. ALU
g. Control Unit

h. Memory

6) "int" is:

a. A derived data type
b. A built-in data type
c. Manual data type
d. All of the above

7) Traversing a data structure means:

e. to visit the elements stored in it
f. deleting it
g. creating it
h. None of the above

8) Searching a data structure means:

e. to find a particular element in the data structure
f. to search the location of that data structure
g. to search the structure of a data
h. none of the above

9) If the temperatures of a month are stored in an array and we are asked to arrange the elements of that array from coldest to hottest month, which data structure operation are you going to perform?

e. Searching
f. Sorting
g. Merging
h. Traversing

10) Data structures in C is essential:

e. To write the C programs in a better way
f. To store the data in a better way
g. To interact with the data in a better way
h. All of the above

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BRIDGE COURSE ASSESSMENT TEST
COMPUTER SCIENCE
Data Structures
Mark Statement

S.No	Student First Name	Student Last Name	Class & section	Marks
1	BHANU	SHREE	BCA-I-A	9
2	DURGA	DEEKSHITH N.M	BCA-I-A	9
3	CHANDANA	B	BCA-I-A	8
4	KUSUMA	N	BCA-I-A	10
5	ARUN	M	BCA-I-A	10
6	KARAN	R	BCA-I-A	7
7	ABDUR	RAHEEM	BCA-I-A	9
8	K. ABINAYA	SHREE	BCA-I-A	9
9	KAVITHA	S	BCA-I-A	8
10	DIVYA K	DIVYA K	BCA-I-A	7
11	KUSHAL	SINGH DHAMI	BCA-I-A	8
12	DANIES	BERNARD	BCA-I-A	9
13	VIJAY KUMAR	BV	BCA-I-A	9
14	HUMERA	SAIMA	BCA-I-A	9
15	ASFIYA	ASFIYA	BCA-I-A	9
16	ARCHANA	PARNOAL	BCA-I-A	9
17	AASHISH	S	BCA-I-A	9
18	ANUSHA. S	ANUSHA. S	BCA-I-A	8

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19	MADHU	MADHU	BCA-I-A	7
20	LAVAN	KISHORE	BCA-I-A	6
21	MANASA.J	MANASA.J	BCA-I-A	10
22	ABDUL	SHEKEERUDDIN J	BCA-I-A	8
23	DHANIYA	SHREE M	BCA-I-A	9
24	JOSEPHIN MARY D	MARY	BCA-I-A	8
25	ABHISHEK G	ABHISHEK	BCA-I-A	7
26	ABDUL	AZEEM	BCA-I-A	8
27	KUBRA	KHAN	BCA-I-A	10
28	DAVID	DAVID	BCA-I-A	7
29	DAFNY	FATHIMA	BCA-I-A	8
30	C PETRICK	JOSEPH	BCA-I-A	10
31	BATTA	ROHITH	BCA-I-A	7
32	CHANDAN	S	BCA-I-A	8
33	LALITH	KUMAR	BCA-I-A	7
34	ESHWAR	R	BCA-I-A	7
35	JASNA	RANI	BCA-I-A	9
36	JATHIN	M	BCA-I-A	10
37	ABUBAKAR SIDDIQ	KHAN	BCA-I-A	9
38	NISHA	CHAURASIYA	BCA-I-A	6
39	ANIRUDH	R	BCA-I-A	6
40	FRANCIS ARUN	ARUN	BCA-I-A	10
41	DIVYA	DIVYA	BCA-I-A	7
42	CHANDU	R	BCA-I-A	7
43	DHANUSHA	REDDY	BCA-I-A	9
44	ANSAR	ALAM	BCA-I-A	8
45	AMIT	KUMAR	BCA-I-A	8
46	DARSHAN KUMAR AR	DARSHAN KUMAR AR	BCA-I-A	8
47	DEEKSHITHA	K	BCA-I-A	9
48	G.R.	DEEPIKA	BCA-I-A	10

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49	AMEEN	BAIG	BCA-I-A	5
50	DIVYA	R	BCA-I-A	8
51	TEJAS	KUMAR	BCA-I-C	8
52	S.RUQAIYA	FARHEEN	BCA-I-C	10
53	SHAGUN	GUPTA	BCA-I-C	10
54	SARAH	ANAGA T	BCA-I-C	8
55	SARATH KUMAR	SARATH	BCA-I-C	10
56	RAJEEV	SHARMA.R	BCA-I-C	9
57	VEENA	KUMARI.R	BCA-I-C	9
58	UMME	AIMAN	BCA-I-C	10
59	TAPAN	SAHU	BCA-I-C	10
60	V DHANUSH	.	BCA-I-C	10
61	VISHALINI	S	BCA-I-C	9
62	TEJASHWINI	S	BCA-I-C	10
63	SURYA	NARAYANA	BCA-I-C	8
64	SANJANA	R	BCA-I-C	9
65	S	SHERWIN	BCA-I-C	9
66	RONALDO	DOMINIC	BCA-I-C	5
67	THANVANTH	V	BCA-I-C	9
68	RUMAISA	KHAN	BCA-I-C	10
69	SUMA	LATHA V	BCA-I-C	9
70	VISHAL	SINGH	BCA-I-C	3
71	ROSHNI KUMARI	ROSHNI KUMARI	BCA-I-C	7
72	Z. MOHAMMAD	TAHRIM	BCA-I-C	7
73	SUSAN	CATHARINE J	BCA-I-C	8
74	SINCHANA S N	SINCHANA S N	BCA-I-C	8
75	MOHAMMED	MAAZ	BCA-I-C	4
76	RAJESH	R	BCA-I-C	8
77	SOUNDARYA	K	BCA-I-C	10
78	VINAY	BAHADUR	BCA-I-C	10
79	ZOONI	ALIFOUUZIA	BCA-I-C	10

80	VANDANA	M	BCA-I-C	9
81	VINAY	.G	BCA-I-C	8
82	USHA	K	BCA-I-C	9
83	SMITHA	SHARON	BCA-I-C	9
84	SAGAR. R.	SAGAR. R	BCA-I-C	9
85	*yashaswini*	*CG*	BCA-I-C	10
86	DIPALI	WAGADARI	BCA-I-C	10
87	ROSHAN	BAM	BCA-I-C	8
88	VIGNESH	S	BCA-I-C	8
89	ZAIMA	SHAIK	BCA-I-C	10
90	RAKSHITHA.G	RAKSHITHA.G	BCA-I-C	8
91	REVANTH M	M	BCA-I-C	9
92	SUMAN JANA	SUMAN JANA	BCA-I-C	9
93	RUDRESH	M	BCA-I-C	8
94	SYED	TAQEEB	BCA-I-C	8
95	YUVARAJ	R	BCA-I-C	10
96	SYED RAQIB	JAMAL.S	BCA-I-C	7
97	RAKSHITH C	RAKSHITH	BCA-I-C	9
98	RITA	B	BCA-I-C	7
99	S	KAVITHA	BCA-I-C	8
100	SUMANTH GM	SUMANTH GM	BCA-I-C	10
101	YASHWANTH B S	YASHWANTH B S	BCA-I-C	8
102	SYED	TAHA	BCA-I-C	9
103	YASHODHA	YASHODHA	BCA-I-C	7
104	SRI VIDYA	VIDYA	BCA-I-C	9
108	GRISHAM	G	BCA-DS	10
109	JAMULA	M	BCA-DS	7
110	BHARATH	B	BCA-DS	8
111	SUMIT	KUMAR	BCA-DS	6
112	KRUSHNA	SONTAKKE	BCA-DS	5

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113	SANJANA	YADAV	BCA-DS	9
114	ALWYN	ANUSH	BCA-DS	8
115	LEKHANA	JAGADEESH	BCA-DS	9
116	BHUVANESH	S	BCA-DS	9
117	MUHAMMED	AYAAN SHERIFF	BCA-DS	8
118	MOHAMMED	HARIS	BCA-DS	8
119	ABID	AHMED	BCA-DS	8
120	VANDANA	K	BCA-DS	9
121	LIKITHA	SHREE	BCA-DS	10
122	MUBASHEER	AHMED.F	BCA-DS	9
123	RAMYA	BOMMA	BCA-DS	6
124	EDRENA	THANIYA	BCA-DS	7

Chakraborti
(sreeparna chakraborti)
Faculty-in-charge

Signature of HOD

Head
Department of Computer S
Indian Academy Degree C
Hennur Cross, Hennur Main Roa
Bangalore-560043

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Bangalore - 43.

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I semester BCA 'A' – Foundation Course Time Table

Date: 24/07/2023 to 28/07/2023

Room No. 408

Days	9.15 - 10.10 am	10.15 – 11.10 am	11.15 – 12.10 pm	12.15 – 01.10 pm
24/07/2023 Monday	C Programming (Sona)	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)
25/07/2023 Tuesday	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)	C Programming (Sona)
26/07/2023 Wednesday	C Programming (Sona)	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)
27/07/2023 Thursday	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)	C Programming (Sona)
28/07/2023 Friday	C Programming (Sona)	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)

22/7/23

Head of the Department

Head
Department of Computer Science
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Hennur Cross, Hennur Main Road
Bangalore-560043

22/7/23

Principal

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INDIAN ACADEMY
Degree College - Autonomous

Department of Computer Science

I semester BCA 'B' – Foundation Course Time Table

Date: 24/07/2023 to 28/07/2023

Room No. 409

Days	9.15 - 10.10 am	10.15 – 11.10 am	11.15 – 12.10 pm	12.15 – 01.10 pm
24/07/2023 Monday	Data Structure (Beena)	Discrete Structure (Shyba)	Generic English (Babeena)	C Programming (Sona)
25/07/2023 Tuesday	Discrete Structure (Shyba)	Generic English (Babeena)	C Programming (Sona)	Data Structure (Beena)
26/07/2023 Wednesday	Data Structure (Beena)	Discrete Structure (Shyba)	Generic English (Babeena)	C Programming (Sona)
27/07/2023 Thursday	Discrete Structure (Shyba)	Generic English (Babeena)	C Programming (Sona)	Data Structure (Beena)
28/07/2023 Friday	Data Structure (Beena)	Discrete Structure (Shyba)	Generic English (Babeena)	C Programming (Sona)

22/7/23

Head of the Department

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043.

Principal

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HENNUR MAIN ROAD
BENGALURU - 43

INDIAN ACADEMY
Degree College - Autonomous

Department of Computer Science

I semester BCA 'C' – Foundation Course Time Table

Date: 24/07/2023 to 28/07/2023

Room No. 415

Days	9.15 - 10.10 am	10.15 – 11.10 am	11.15 – 12.10 pm	12.15 – 01.10 pm
24/07/2023 Monday	Data Structure (Sreeparna)	Generic English (Lakshmi)	C Programming (Beena)	Discrete Structure (Lakshmikanthamma)
25/07/2023 Tuesday	C Programming (Beena)	Data Structure (Sreeparna)	Discrete Structure (Lakshmikanthamma)	Generic English (Lakshmi)
26/07/2023 Wednesday	Generic English (Lakshmi)	C Programming (Beena)	Data Structure (Sreeparna)	Discrete Structure (Lakshmikanthamma)
27/07/2023 Thursday	C Programming (Beena)	Data Structure (Sreeparna)	Discrete Structure (Lakshmikanthamma)	Generic English (Lakshmi)
28/07/2023 Friday	Generic English (Lakshmi)	C Programming (Beena)	Data Structure (Sreeparna)	Discrete Structure (Lakshmikanthamma)

22/7/23

Head of the Department

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22/7/23

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I semester B.Sc. Data Science – Foundation Course Time Table

Date: 24/07/2023 to 28/07/2023

Room No. 408

Days	9.15 - 10.10 am	10.15 – 11.10 am	11.15 – 12.10 pm	12.15 – 01.10 pm
24/07/2023 Monday	C Programming (Sona)	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)
25/07/2023 Tuesday	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)	C Programming (Sona)
26/07/2023 Wednesday	C Programming (Sona)	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)
27/07/2023 Thursday	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)	C Programming (Sona)
28/07/2023 Friday	C Programming (Sona)	Data Structure (Sreeparna)	Discrete Structure (Jannet)	Generic English (Lakshmi)

22/7/23

Head of the Department

Head
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Indian Academy Degree College
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Bangalore-560043

22/7/23

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Hennur Cross, Bengaluru - 560 043

Department of Computer science

Bridge course-BCA 2023-2027

Sem 1 Section C

Problem solving Technique Using C

Date 24/07/20123 -28/07/2023

Duration -05 Hrs

Handled By

Mrs Beena Uphale

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Bengaluru - 43.

HOD

Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road
Bangalore-560043

Mrs Anuradha P

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Computer Science

Bridge Course-BCA 2022-2023

Problem solving Technique Using C

Date 24/07/20123 -28/07/2023

Course Objectives

- To bridge the gap between knowledge
- To make students familiar with basics
- To make learner familiar with basic concepts
- To develop logic

Course Outcomes

- At the end of the courser student will be able to
- Understand the fundaments
- Understand the basics of programming
- Understand the basics building blocks of C programming

Course Content

- Basics of computers
- Algorithms
- Data types
- C programming concepts

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Bridge course-BCA 2023-2027 Pre Assessment Test
Sem 1 Section C
Problem solving Technique Using C Date-24/07/23

1)Who is father of computer?
a) Charles Babbage
b) Charls Dickenson

2)The Brain of computer
a) CPU
b) Monitor

3)Select input devices.
a) Keyboard
b) Mouse
c) Monitor
d) CPU

4)Select Output devices.
a) Mouse
b) Keyboard
c) Monitor
d) printer

5)Volatile memory
a) RAM
b) ROM

6)Non Volatile Memory
a) RAM
b) ROM

7)Sep by step solution to problem Witten in pseudo code
a) Algorithm
b) Program
c) Flowchart

8)Step by step solution to problem in diagrammatic representation format
a) Algorithm
b) Program
c) Flowchart

9)Solution to problem in C language
a) Algorithm
b) Program
c) Flowchart

10)Who invented C language?
a) Dennis Morris
b) Dennis M. Ritchie
c) Ritchie Mortis
d)

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Bridge course-BCA 2023-2027 Pre Assesment Marks
Sem 1 Section C
Problem solving Technique Using C

Sr No	Student Name	Score
1	Syed shoaib	5 / 10
2	Roshan Bam	7 / 10
3	Tapan Sahu	9 / 10
4	Shagun	8 / 10
5	Susan Catharine J	5 / 10
6	Ronald	7 / 10
7	Vishalini. S	9 / 10
8	RAKSHITH C	5 / 10
9	Sanjana	8 / 10
10	Syed Raqib Jamal.s	8 / 10
11	Vinay bahadur	6 / 10
12	Sheikh Farhan	7 / 10
13	Vandana M	6 / 10
14	Vishal singh	6 / 10
15	Sarah Anaga T	7 / 10
16	Vignesh s	8 / 10
17	Rajeev Sharma.R	5 / 10
18	Umme aiman	7 / 10
19	Revanth M	6 / 10
20	Zoonialifouzia	8 / 10
21	Sameer ulla	4 / 10
22	Suresh v	9 / 10
23	S.ruqaiya farheen	8 / 10
24	Zaima Shaik	8 / 10
25	Sumalatha v	6 / 10
26	Roshni kumari	5 / 10
27	Yashodha	7 / 10
28	Rita.b	7 / 10
29	Surya Naryana	6 / 10
30	Sarath Kumar	8 / 10
31	Suman Jana	6 / 10
32	Yashaswini C G	6 / 10
33	Tejashwini.s	5 / 10
34	Tejas Kumar D	9 / 10
35	V dhanush	9 / 10
36	Thanvanth V	10 / 10
37	Rudresh. M	9 / 10
38	Usha k	7 / 10
39	Yuvaraj.r	9 / 10
40	Smitha Sharon.R	5 / 10
41	Syed taqeeb	6 / 10
42	S. Kavitha	5 / 10
43	Syed taha	8 / 10
44	Sinchana SN	7 / 10
45	Vinay. G	6 / 10
46	Soundarya K	10 / 10
47	Wagadari Dipali Sidram	6 / 10
48	Veena Kumari.R	10 / 10
49	Sathya	5 / 10
50	Rajesh.R	7 / 10
51	Sherwin suresh	9 / 10

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Department of Computer Science
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Main Road

Who is the Father of the Computer?

Charles Babbage

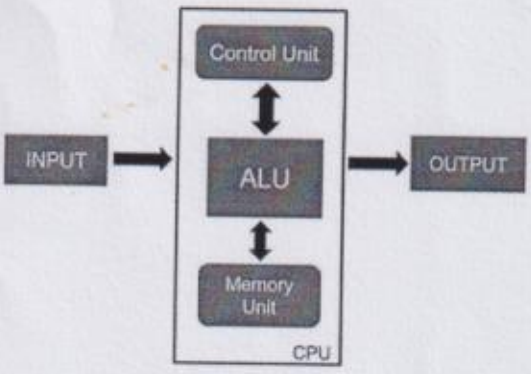
Computer is an automatic electronic machine that can store, recall and process data

Characteristics of Computers

- Speed -The ability to work fast .
- Storage-can store large amount of data
- Accuracy-The computer generated results are exact and without any mistakes
- Versatility-Computers seem capable of performing almost any task,
- Automation-perform tasks with where human input is minimize
- Diligence-a computer does not suffer from the human traits of tiredness and lack of concentration.
- Cost effectiveness -Computers reduce the amount of paper work and human effort, thereby reducing costs.

Functional components of a computer

- (working of each unit)
- Basically any computer is supposed to carry out the following functions.
- Ø Accept the data and program as input
- Ø Store the data, program and retrieve as and when required.
- Ø Process the data as per instructions given by the program and convert it into useful information
- Ø Communicate the information as output



block diagram of the computer

- Input Devices

An input device is any hardware component that allows you to enter data and instructions into a computer. Some of the widely used input devices are the keyboard, mouse, microphone, scanner, and Webcam.

Output Unit -An output device is any hardware component that conveys information to one or more people.in user understandable form. Commonly used output devices are printer, monitor and speakers

- **Central Processing Unit-**

CPU is the part of the computer that carries out the instructions of a computer program.

It is the unit that reads and executes program instructions. Hence it is known as the brain of the computer. It takes all major decisions,

Directs different parts of the computer

. It consists of arithmetic and logic units, control unit and internal memory (registers). The CPU controls and coordinates all the actions of the entire system.

- **Memory Unit** -Results obtained after processing will be in the primary memory, these data or information can be stored in the storage device/secondary memory units
- **Computer memory divided into two parts**

1. Volatile memory

- Volatile memory is a temporary memory that loses its contents when the computer or hardware device loses power.eg. RAM

2. Non-volatile memory

- Non-volatile memory keeps its contents even if the power is lost. Example: ROM is a good example of a non-volatile memory

Algorithms

Addition of two numbers

- INPUT a,b
- 2. c= a+b
- 3. OUTPUT a
- 5. STOP

Find the area of a circle.

1. INPUT radius
2. a = 3.142 * radius * radius
3. OUTPUT a
5. STOP

Write an algorithm

- Find the total of five subject
- Find the average of five subject
- Find the area of rectangle(A=L*B)
- Find the area of square(A=L*L)
- Find the area of triangle(A=0.5*b*h)
- find the volume of a cylinder(3.14*r*r*h)
- Find square 0f a number
- Find cube of a number
- Swap Two Variables using Third
- Calculate discount 2 %and final bill for given purchase amount

```
#include <stdio.h>

int main()
{
  printf("Hello World!");
  return 0;
}
```

```
#include <stdio.h>

void main()
{
  printf("Hello World!");

}
```

Line 1: #include <stdio.h> is a **header file library** that lets us work with input and output functions,

such as printf() (used in line 4). Header files add functionality to C programs.

Another thing that always appear in a C program, is main().

This is called a function. Any code inside its curly brackets {} will be executed.

printf() is a function used to output/print text to the screen. In our example it will output "Hello World!"

Data Types in C

A data type specifies the type of data that a variable can store such as integer, floating, character, etc.

Types	Data Types
Basic Data Type	int, char, float, double
Derived Data Type	array, pointer, structure, union
Enumeration Data Type	enum
Void Data Type	void

nt:

Integers are entire numbers without any fractional or decimal parts, and the ***int data type*** is used to represent them.

Char:

Individual characters are represented by the ***char data type***. Typically used to hold ***ASCII*** or ***UTF-8 encoding scheme characters***, such as ***letters, numbers, symbols***, or ***commas***. There are ***256 characters*** that can be represented by a single char, which takes up one byte of memory. Characters such as ***'A', 'b', '5',*** or ***'$'*** are enclosed in single quotes.

Float:

To represent integers, use the ***floating data type***. Floating numbers can be used to represent fractional units or numbers with decimal places.

The ***float type*** is usually used for variables that require very good precision but may not be very precise. It can store values with an accuracy of about ***6 decimal places*** and a range of about ***3.4 x 1038*** in ***4 bytes*** of memory.

- int age = 25;
- char grade = 'A';
- float temperature = 98.6;

Variables in C

A **variable** is a name of the memory location. It is used to store data. Its value can be changed, and it can be reused many times.

It is a way to represent memory location through symbol so that it can be easily identified.

Let's see the syntax to declare a variable:

1. int a;
2. float b;
3. char c;

Write a C program to add two numbers

```
#include <stdio.h>
void main()
{
int a,b,c;
 printf("enter value of a");
scanf("%d",&a);
printf("enter value of b");
scanf("%d",&b);
c=a+b;
printf("%d",c);
 getch();
}
```

Write a C program

- Find the total of five subject
- Find the average of five subject
- Find the area of rectangle(A=L*B)
- Find the area of square(A=L*L)
- Find the area of triangle(A=0.5*b*h)
- find the volume of a cylinder (3.14*r*r*h)
- Find square 0f a number
- Find cube of a number
- Swap Two Variables using Third
- Calculate discount 2 %and final bill for given purchase amount

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BRIDGE COURSE ASSESSMENT TEST

DEPARTMENT OF COMPUTER SCIENCE

POST ASSESSMENT TEST

B21 DC 1.2: Problem Solving Techniques using C

Date: 28/07/2023

Time: 30 Minutes **Max. Marks: 10**

1. Which of the following language does the computer understand?
   - Computer understands only C Language
   - Computer understands only Assembly Language
   - Computer understands only Binary Language
   - Computer understands only BASIC
2. Which of the following is not a function of the Input Unit?
   - It reads instructions and data from the outside world
   - It converts the data into computer acceptable format
   - It makes the data into user understandable format
   - It supplies the data and instructions to the computer for further processing
3. The process of producing useful information for the user is called_____
   - Controlling
   - Inputting
   - Outputting
   - Processing
4. Whish of the following is the brain of the computer?
   - Central Processing Unit
   - Arithmetic and Logic unit
   - Memory
   - Control unit
5. The two basic types of memory in a computer are _____
   - Primary and major

- Primary and Secondary
- Minor and Major
- Main and virtual

6. Storage which stores stores of retains data after power off is called.
   - Volatile storage
   - Non-volatile storage
   - Sequential storage
   - Direct storage
7. What is an algorithm?
   - A flowchart
   - A pseudo code
   - A decision
   - Step by step instruction used to solve a problem
8. In a Flowchart, a calculation (process) is represented by
   - A rectangle
   - A rhombus
   - A Parallelogram
   - A circle
9. _____ Symbol used when the decision or condition to be checked
   - Connector
   - Terminal Box
   - Input/output
   - Decision
10. Who invented C Language?
    - Charles Babbage
    - Grahame
    - Dennis Ritchie
    - Steve Jobs

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Department of Computer science

Bridge course-BCA 2023-2027 Bridge Course Attendance

Sem 1 Section C

Problem solving Technique Using C

Sl No	Name of the student	24/07	25/07	26/07	27/07	28/07
1	RAJEEV SHARMA	P	P	P	P	P
2	RAJESH R	A	A	P	A	P
3	RAKSHITH C	P	P	P	P	P
4	RAKSHITHA G	P	P	P	P	P
5	RAMYA R	P	P	P	P	P
6	REVANTH M	P	P	P	P	P
7	RISHIT REDDY R	A	A	A	A	A
8	RITA B	P	P	P	A	A
9	ROHIT S	P	P	P	P	P
10	RONALDO DOMINIC DOLL	P	P	P	P	P
11	ROSHAN BAM	P	P	P	P	P
12	ROSHNI KUMARI	P	P	P	P	P
13	RUDRESH M	P	P	P	P	P
14	RUMAISA KHAN	P	P	P	P	P
15	S RUQAIYA FARHEEN	P	P	P	P	P
16	S SHERWIN SURESH	P	P	P	P	P
17	S. KAVITHA	P	A	P	P	P
18	SAGAR R	P	P	P	P	P
19	SAMEER ULLA	P	A	P	P	A
20	SANJANA R	P	P	P	P	P
21	SANTHOSH KUMAR L	A	A	A	A	A
22	SARAH ANAGA T	P	P	P	P	P
23	SARATH KUMAR	P	P	P	P	P
24	SATYA S	P	P	P	P	A
25	SHAGUN B	P	P	P	P	P
26	SHEIKHFARHAN	A	P	P	A	A
27	SINCHANA S N	P	P	P	P	P
28	SMITHA SHARON	P	P	P	P	P
29	SOUNDARYA K	P	P	P	P	P
30	SRI VIDHYA S	P	P	P	P	P
31	SUMALATHA V	P	P	P	P	P
32	SUMANJANA	P	P	P	P	P
33	SURESH V	P	P	A	A	A
34	SURYANARAYANA	P	P	P	P	P
35	SUSAN CATHARINE J	P	P	P	P	P
36	SYED RAQIB JAMAL	P	P	P	P	P
37	SYED SHOAIB MEHDI	A	A	A	A	A
38	SYED TAHA USMAN	P	P	P	P	P
39	SYED TAQEEB	P	P	P	P	P
40	TAPAN SAHU	P	P	P	P	P
41	TEJAS KUMAR D	P	P	P	P	P
42	TEJASHWINI S	P	P	P	P	P
43	THANVANTH V	P	P	P	P	P

44	UMME AIMAN	P	P	P	P	P
45	USHA K	P	P	P	P	P
46	V DHANUSH	P	P	P	P	P
47	VANDANA M	P	P	P	P	P
48	VEENA KUMARI	P	P	P	P	P
49	VIGNESH	P	P	P	P	P
50	VINAY BAHADUR G	P	P	P	A	P
51	VINAY G	P	A	P	P	P
52	VISHAL SINGH	P	P	P	A	P
53	VISHALINI S	P	P	P	P	P
54	WAGADARI DIPALI SIDRAM	P	P	P	P	P
55	YASHASHWINI	P	P	P	P	P
56	YASHODHA.D	P	P	P	P	A
57	YASHWANTH B S	A	A	P	P	P
58	YUVARAJ R	P	P	P	P	P
59	Z MOHAMMED TAHRIM	P	P	P	P	P
60	ZAIMA SHAIK	P	P	P	P	P
61	ZOONI ALI FOUZIA	P	P	P	P	P
62	SYED SHOAIB MEHDI	P	A	A	P	A
63	MD SINAN	A	P	A	A	A
64	SUMANTH G M	A	A	A	P	P
65	MD MAAZ	A	A	A	P	P

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Bangalore-560043

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Hennur Cross, Bengaluru - 560 043
Department of Computer science
Bridge course-BCA 2023-2027 Post Assesment Marks
Sem 1 Section C
Problem solving Technique Using C

Sr No	Student Name	Score
1	Sanjana R	9 / 10
2	Susan Catharine J	7 / 10
3	Vandana M	8 / 10
4	Smitha Sharon.R	5 / 10
5	Shagun b	9 / 10
6	Tapan Sahu	10 / 10
7	Roshan Bam	6 / 10
8	Rajeev Sharma.R	10 / 10
9	Sarath Kumar	10 / 10
10	Usha k	7 / 10
11	Surya Narayana	8 / 10
12	Sarah Anaga T	10 / 10
13	Vishalini. S	10 / 10
14	Rumaisa khan	10 / 10
15	Vinay bahadur	6 / 10
16	V dhanush	10 / 10
17	Umme aiman	10 / 10
18	Revanth M	9 / 10
19	Ronaldo	10 / 10
20	Vishal singh	3 / 10
21	Zaima Shaik	7 / 10
22	Thanvanth V	10 / 10
23	Rajesh.R	8 / 10
24	yashwanth B S	6 / 10
25	Rudresh	10 / 10
26	Tejas kumar	7 / 10
27	Sumalatha v	8 / 10
28	Roshni kumari	8 / 10
29	Zoonialifouzia	7 / 10
30	Sherwin	10 / 10
31	Veena Kumari.R	9 / 10
32	Syed Raqib Jamal.s	9 / 10
33	Yuvaraj r	10 / 10
34	Syed taha usman	8 / 10
35	Yashswini	8 / 10
36	Tejashwini.s	9 / 10
37	Z mohammad Tahrim	9 / 10
38	Suman Jana	9 / 10
39	S ruqaiya farheen	7 / 10

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40	Vignesh s	9 / 10
41	Syed Taqeeb	6 / 10
42	Vinay.g	7 / 10
43	Sagar. R.	10 / 10
44	Soundarya K	10 / 10
45	S.Kavitha	8 / 10
46	Sinchana SN	7 / 10
47	Wagadari Dipali Sidram	10 / 10
48	RAKSHITH C	10 / 10
49	Sumanth GM	10 / 10
50	Rita.b	6 / 10
51	Rakshitha.G	7 / 10
52	Yashodha	7 / 10
53	Ramya	10 / 10
54	Sri vidya	10 / 10

Head
Department of Computer Science

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Department of Commerce (UG)

I. Name of the Department: UG Commerce

II. Title of Foundation Course: FINANCIAL ACCOUNTING (Basics Of Accounting)

III. Pre Assessment Test: Question Paper & Marks List Enclosed

IV. Total Number & Name List of Students: Attendance copy Enclosed

V. Syllabus for Foundation Course: Copy Enclosed

VI. Total No of Classes Handled: 10 (Attendance copy Enclosed)

VII. Study Material: Copy Enclosed

VIII. Name & Signature of the faculties handling the subjects.

Sl No	NAME OF THE FACULTY	SECTION	SIGNATURE
1	Prof. Arshadulla	'A'	Arsh.
2	Prof. Lakshmi	'B'	Lakshmi
3	Prof. Raghu Guda	C	Raghu P

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Magdalene Daniel
Signature of HOD

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Department of Commerce (UG)

FOUNDATION COURSE ON "BASICS OF ACCOUNTING"
FOR I BCOM ONLINE CLASSES
SCHEDULED HOURS - 10 Hrs.

BRIDGE COURSE:

With students coming from various academic backgrounds including Science, Commerce and Arts, a strong all-around foundation is important. The department conducts Bridge Course in accounting subject. This is to ensure that students are not left behind in subjects they may not have prior academic experience in, or in which strengthening of their foundation is required.

OBJECTIVE:

1. To bridge the gap between subjects studied at the pre-university level and subjects they would be studying at graduation.
2. To prepare themselves before the onset of courses for first-year degree programmes.
3. To give students the confidence and skills to successfully transition to college and new curriculum.

PROGRAMME OUTCOME:

1. The students will be equipped with the knowledge and the confidence needed to take on bigger challenges in future.
2. After completing the bridge course in accountancy, students better understand accounting concepts.

METHODOLOGY:

1. Theory with simple problems
2. PowerPoint presentation
3. Examples

EVALUATION:

- Post bridge course test is conducted after completion of bridge course syllabus to assess the ability of students and suggestions are given to students for improvisation.

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COURSE STRUCTURE AND SYLLABUS

BASICS OF ACCOUNTING

UNIT	CHAPTER	TOPICS	OBJECTIVES	OUTCOMES	No. of Hrs.
UNIT-1	THEORETICAL FRAMEWORK		• To understand the terms used in the accounting system • To familiarize students with the basic concepts of accounting. • To enable the students to develop cognizance of the importance of accounting in organization financial statements	• Acquire conceptual knowledge of basics of accounting • Record basic accounting transactions • Understand basic accounting terminology	
	Chapter-1	**INTRODUCTION TO ACCOUNTING** • Introduction • Objectives • Advantages and Limitations • Various terminology used in accounts			1 Hrs.
	Chapter-2	**THEORY BASE OF ACCOUNTING** • Accounting Assumptions • Accounting Principles • Accounting Cycle **ACCOUNTING EQUATION**			1 Hrs. 1 Hrs
UNIT-2	ACCOUNTING PROCESS		• To know how the accounting entries are posted in books • To give an insight into the basics of Accounting Principles to Prepare the Students to have a foothold in Accounts.	• Identify events that need to be recorded in the accounting records • Equip with the knowledge of accounting process and preparation of final accounts of a sole trader.	
	Chapter-3	**RECORDING OF TRANSACTIONS** • Golden Rules of Accounting • Personal Account • Real Account • Nominal Account • Assets Account • Liabilities Account • Capital Account • Revenue Account • Expenses Account			2 Hrs.
		• Single Entry System theory only • Double Entry System			1 Hrs
		• Journal • Ledger			2 Hrs

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		• Cash book • Trial Balance			2 Hrs

TOPICS IN FOUNDATION COURSE:

1. BASIC ACCOUNTING PRINCIPLES
    - Introduction
    - Various terminology used in accounts
2. OBJECTIVES
3. GOLDEN RULES OF ACCOUNTING
4. ACCOUNTING CYCLE
5. ACCOUNTING ASSUMPTIONS
6. RECORD OF TRANSACTIONS:
    - Assets Account
    - Liabilities Account
    - Capital Account
    - Revenue Account
    - Expenses Account
7. SYSTEMS OF RECORDING:
    - Single Entry System
    - Double Entry System
8. CLASSIFICATION OF ACCOUNTS:
    - Personal Account
    - Real Account
    - Nominal Account
9. JOURNAL
10. CASHBOOKBOOK
11. LEDGER:
    - Ledger posting
    - Balancing of Ledger Accounts
12. FINAL ACCOUNTS:
    - Trial Balance

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FOUNDATION COURSE ON "BASICS OF ACCOUNTING"
FOR I BCOM CLASSES STUDY MATERIAL-2023

Meaning Accounting
Accounting is the process of recording financial transactions pertaining to a business. The **accounting** process includes summarizing, analyzing and reporting these transactions to oversight agencies, regulators and tax collection entities.

Rules of accounting
Accounts are classified in to three namely real accounts, personal accounts and nominal accounts. There are separate rules for each type of accounts they are as follows

1. Real accounts
An account relating to an asset or property is called real account. Cash, furniture, plant & machinery etc are some examples of real accounts.
The rule of real account is
Debit what comes in
Credit what goes out

2. Personal accounts
It includes the account of person with whom the business deals. These accounts are classified in to three categories
a) Natural personal accounts –the term natural persons mean persons who are creation of god. For example Madhav's accounts Ram's accounts etc.
b) Artificial personal accounts-these accounts include accounts of corporate bodies or institutions
c) Representative personal account-these are accounts which represents certain person or group of persons. For example, salary due, rent outstanding etc.
The rule of personal account is
Debit the receiver
Credit the giver

3) Nominal accounts
Accounts relating to expenses and losses and incomes and gains are called nominal accounts. Salary accounts, commission account etc. are examples.
The rule of nominal account is
Debit all expenses and losses
Credit all incomes and gains.

RULES OF DEBIT AND CREDIT
Basically, debit means to enter an amount to the left side of an account and credit means to enter an amount to the right side of an account. In the abbreviated form Dr. Stands for debit and Cr. stands for credit. Both debit and credit may represent either increase or decrease depending upon the nature of an account. The Rules for Debit and Credit are given below:

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The Rules for Debit and Credit are given below :

Types of Accounts	Rules for Debit	Rules for Credit
(a) For Personal Accounts	Debit the receiver	Credit the giver
(b) For Real Accounts	Debit what comes in	Credit what goes out
(c) For Nominal Accounts	Debit all expenses and losses	Credit all incomes and gains

Posting

The term posting means transferring the debit and credit items from the journal to their respective accounts in the ledger. It is the process of recording the transaction from journal to ledger. The following rules should be observed while posting transactions in the ledger from the journal:

- Separate account should be opened in the ledger for posting transactions relating to different accounts recorded in the journal.
- The concerned account, which has been debited in the journal should also be debited in the ledger.
- The concerned account, which has been credited in the journal should also be credited in the ledger.

MEANING AND FORMAT OF A JOURNAL

Journal is a historical record of business transactions or events. The word journal comes from the French word "Jour" meaning "day". It is a book of original or prime entry written up from the various source documents. Journal is a primary book for recording the day to day transactions in a chronological order i.e. in the order in which they occur. The journal is a form of diary for business transactions. This is also called the book of first entry since every transaction is recorded firstly in the journal. The format of a journal is shown as follows:

Journal

Date	Particulars	L.F.	Debit (Rs.)	Credit (Rs.)

(a) **Date Column**: This column shows the date on which the transaction is recorded. The year and month is written once, till they change.

(b) **Particular Column**: Under this column, first the names of the accounts to be debited, then the names of the accounts to be credited and lastly, the narration (i.e. a brief explanation of the transaction) are entered.

(c) **L.F., i.e. Ledger Folio Column**: Under this column, the ledger page number containing the relevant account is entered at the time of posting.

(d) **Debit amount Column**: Under this column, the amount to be debited is entered.

(e) **Credit amount Column**: Under this column, the amount to be credited is entered.

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Three Column Cash Book

Three Column Book has three amount columns (one for cash, one for Bank, and one for Discount) on each side. All cash receipts, deposits into bank and discount allowed are recorded on debit side and all cash payments, withdrawals from bank and discount received are recorded on the credit side. In fact, a three-column cash book serves the purposes of Cash Account and Bank Account. Hence, there is no open these two accounts in the ledger.

Date	Particulars	L.F.	Dis.	Cash	Bank	Date	Particulars	L.F.	Dis.	Cash	Bank

TRIAL BALANCE

Trial balance is a statement containing the various ledger balances on a particular date. This statement is prepared to check the correctness of ledger posting and balancing of accounts. If the total of the debit balances is equal to the credit balances. It is implied that posting and balancing of accounts are correct.

Features of trial balance

1. It is prepared on a specific date
2. It is not a part of double entry and not an account
3. It is a statement of balance of all accounts or totals of ledger accounts
4. Total of the debit and credit columns of the trial balance must tally
5. If the debit and credit columns are equal it is presumed that accounts are arithmetically accurate
6. Difference in the debit and credit columns indicate that some mistakes have been committed
7. Tallying of trial balance is not a conclusive proof of accuracy of books of accounts; it serves to prove only the arithmetical accuracy of books

Objectives of trial balance

The following are the objectives of preparing trial; balance

1. To ascertain the arithmetical accuracy of the ledger accounts
2. To help in locating errors
3. To help in the preparation of final accounts

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Specimen of trial balance is given below Trial Balance as on .....

Account code	Name of the account	Debit Amount(Rs)	Credit Amount(Rs)
	Cash in hand	Xxx	
	Cash at bank	Xxx	
	Sundry debtors	Xxx	
	Sundry creditors		Xxx
	Sales		Xxx
	Sales returns	Xxx	
	Purchases	Xxx	
	Purchase returns		xxx
	Drawing	xxx	
	Capital		xxx
	Bills receivable	xxx	
	Bills payable		xxx
	Stock of goods	xxx	
	Bank loan/overdraft		Xxx
	Carriage inwards	xxx	
	Carriage outwards	xxx	
	Rent paid	xxx	
	Interest paid	xxx	
	Salary paid	xxx	
	Discount received		Xxx
	Commission received		xxx
	Plant and machinery	xxx	
	Buildings	xxx	
	Furniture	xxx	
	Vehicles	xxx	
	Goodwill	xxx	
	Provisions		Xxx
	Outstanding expenses		xxx
	Prepaid expenses	xxx	
	Accrued income	xxx	
	Pre received income		Xxx
	Reserve accounts		Xxx
	Advance from customers		xxx
		xxxx	xxxx

Final Accounts

The final object of every businessman is to earn profit. He is interested to know how much profit he has earned or how much loss he has incurred during the year. For the purpose income tax payment, financial position, distribution of dividend and for the future planning it becomes necessary to ascertain the profit or loss for the year. At the end of the year a trial balance is extracted from the ledger balances and then on the basis of the trial balance, closing entries are passed and final Accounts are prepared. The process of preparing Final Accounts from the original records is as under.

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Meaning of Journalizing

The process of recording a transaction in the journal is called journalizing. The various steps to be followed in journalizing business transactions are given below:

Step 1 Ascertain what accounts are involved in a transaction.

Step 2 Ascertain what is the nature of the accounts involved.

Step 3 Ascertain which rule of debit and credit is applicable for each of the accounts involved.

Step 4 Ascertain which account is to be debited and which is to be credited.

Step 5 Record the date of transaction in the 'Date column'

Step 6 Write the name of the account to be debited, very close to the left hand side i.e. the line demarcating the 'Date column' and the 'Particulars 13 column') along with the abbreviation 'Dr.' on the same line against the name of the account in the 'Particulars column' and the amount to be debited in the 'Debit Amount column' against the name of the account.

Step 7 Write the name of the account to be credited in the next line preceded by the word 'To' at a few spaces towards right in the 'Particulars column' and the amount to be credited in the 'Credit Amount column' against the name of the account.

Step 8 Write 'Narration' (i.e. a brief description of the transaction) within brackets in the next line in the 'Particulars column'.

Step 9 Draw a line across the entire 'Particulars column' to separate one Journal Entry from the other.

Advantages of Journal

1. The transactions are recorded in journal as and when they occur so the chances of error are minimized.
2. It helps in preparation of ledger.
3. Any transfer from one account to another account is made through Journal.
4. The entry recorded in journal is self explanatory as it includes narration also.
5. It can record any such transaction which cannot be entered in any other books of account.
6. Every transaction is recorded in chronological order (date wise) so the chances of manipulations are reduced.
7. Journal shows all information in respect of a transaction at one place.
8. The closing balances of previous year of accounts related to assets and liabilities can be brought forward to the next year by passing journal entry in journal.

CASH BOOK

Meaning of Cash Book

Cash book may be defined as the record of transactions concerning cash receipts and cash receipts and cash payments. In other words in Cash Book, all transactions (i.e., receipts and payments of cash) are recorded as soon as they take place.

Cash Book is in the form of an account and actually it serves the purpose of Cash Account also. It has two sides-debit and credit side. On the debit side, all receipts of cash are recorded while on the credit side, all the payments of cash are recorded. Items on the debit side of the cash book are posted on the credit side of the ledger accounts and items on the credit side are posted on the debit side of the ledger accounts.

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Features of cash book:

- Only cash transactions are recorded in the cash book.
- It performs the functions of both journal and ledger at the same time.
- All cash receipts are recorded in the debit side and all cash payments are recorded in the credit side.
- It records only one aspect of transactions i.e. cash.
- All cash transactions are recorded chronologically in the cash book.

Types of Cash Book

The various types of cash book from the point of view of uses may be as follows:

Single Column Book	Cash Book with discount	Cash Book with Bank &	Petty Cash Book

Single Cash Book

Single Column Book has one amount column on each side. All cash receipts are recorded on the side and all cash payments on the credit side. In fact, this book is nothing but a Cash Account. Hence, there is no needed to open this account in the ledger.

Format of Single Column Cash Book:

Single Column Cash Book

Date	Particulars	L.F.	Amount Rs	Date	Particulars	L.F.	Amount Rs

Cash Book with Discount Column

Cash book with discount Column has two amount columns (one for cash and another for discount) as each side. All cash receipts and cash discount allowed are recorded on the debit side and all cash payments and cash discount received are recorded on the credit side.

Format of Cash Book with Discount Column:

Cash Book with Discount Column

Date	Particulars	L.F.	Dis.	Cash	Date	Particulars	L.F.	Dis.	Cash

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Department of Commerce (UG)

I. Name of the Department: UG Commerce

II. Title of Foundation Course :Principles Of Management

III. Pre Assessment Test: Question Paper & Marks List Enclosed

IV. Total Number & Name List of Students : Attendance copy Enclosed

V. Syllabus for Foundation Course : Copy Enclosed

VI. Total No of Classes Handled: 10 (Attendance copy Enclosed)

VII. Study Material : Copy Enclosed

VIII. Name & Signature of the faculties handled the subjects.

Sl No	NAME OF THE FACULTY	SECTION	SIGNATURE
1	Prof. Venessa Priya	'A'	
2	Prof. Jaffer Sir	'B'	
3	Prof. Revathi	C	

Signature of HOD

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Department of Commerce (UG)

FOUNDATION COURSE ON "BASICS OF PRINCIPLES OF MANAGEMENT"
FOR I BCOM CLASSES
SCHEDULED HOURS - 10 Hrs.

BRIDGE COURSE:

With students coming from various academic backgrounds including Science, Commerce and Arts, a strong all-round foundation is important. The department conducts Bridge Course in accounting subject. This is to ensure that students are not left behind in subjects they may not have prior academic experience in, or in which strengthening of their foundation is required.

OBJECTIVE:

1. To bridge gap between subjects studied at pre-university level and subjects they would be studying in graduation.
2. To prepare themselves before the onset of courses for first year degree programmes.
3. To give students the confidence and skills to successfully transition to college and new curriculum.

PROGRAMME OUCOME:

1. The students will be equipped with the knowledge and the confidence needed to take on bigger challenges in future.
2. After completion of the bridge course, students have better understanding of Principles concepts.

METHODOLOGY:

1. Theory explanations
2. PowerPoint presentation
3. Examples

EVALUATION:

- Post bridge course test is conducted after completion of bridge course syllabus to assess the ability of students and suggestions are given to students for improvisation.

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COURSE STRUCTURE AND SYLLABUS

BASICS OF PRINCIPLES OF MANAGEMENT

SL NO.	CHAPTER	TOPICS	OBJECTIVES	OUTCOMES	No. of Hrs.
1	THEORETICAL FRAMEWORK		• To understand the terms used in principles of management • To familiarize students with the basic concepts of principles of management • To enable the students to develop cognizance of the importance of principles of management	• Acquire conceptual knowledge of basics of Principles of Management • To understand the applications • Understand basic terminology Identification of outcome from principles of management.	
	Chapter-1	**INTRODUCTION TO MANAGEMENT** • Need for principles of Management • Purpose for Principles of Management • Scope of Principles of Management • Objectives of Principles of Management			2Hrs.
2	Chapter-2	**BASICS OF PRINCIPLES OF MANAGEMENT** • Principles of management • How Principles of Management is useful for organization. • Benefits of Principles of Management.			2Hrs.
3	Chapter-3	**STRUCTURE OF PRINCIPLES OF MANAGEMENT** • Functions of Principles of Management • Levels of Management • HENRY FAYAL 14 Principles of Management • Group discussion on Management Principles • Authority powers in Management • Balancing authority and responsibility.	• To know how the processes are conducted • To give an insight into the basics of principles of management	• Identify and study the functions • Framework of the levels of management	6Hrs.

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TOPICS IN FOUNDATION COURSE:

1. INTRODUCTION TO MANAGEMENT
    - Introduction.
    - Various terminology used in POM.
    - Need for principles of management.
    - Purpose for principles of management.
    - Scope for principles of management.
    - Objectives for principles of management.

2. BASICS OF PRINCIPLES OF MANAGEMENT

    How principles of management is useful in an Organization.

3. STRUCTURE OF PRINCIPLES OF MANAGEMENT
    - Different levels of management.
    - Functions of principles of management.
    - Group discussion on management principles.
    - Balancing authorities and responsibility.
    - Powers of management.

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COURSE STRUCTURE AND SYLLABUS

BASICS OF PRINCIPLES OF MANAGEMENT

SL NO.	CHAPTER	TOPICS	OBJECTIVES	OUTCOMES	No. of Hrs.
1	**THEORETICAL FRAMEWORK**		• To understand the terms used in principles of management • To familiarize students with the basic concepts of principles of management • To enable the students to develop cognizance of the importance of principles of management	• Acquire conceptual knowledge of basics of Principles of Management • To understand the applications • Understand basic terminology Identification of outcome from principles of management.	
	Chapter-1	**INTRODUCTION TO MANAGEMENT** • Need for principles of Management • Purpose for Principles of Management • Scope of Principles of Management • Objectives of Principles of Management			2Hrs.
2	Chapter-2	**BASICS OF PRINCIPLES OF MANAGEMENT** • Principles of management • How Principles of Management is useful for organization. • Benefits of Principles of Management.			2Hrs.
3					
	Chapter-3	**STRUCTURE OF PRINCIPLES OF MANAGEMENT** • Functions of Principles of Management • Levels of Management • HENRY FAYAL 14 Principles of Management • Group discussion on Management Principles • Authority powers in Management • Balancing authority and responsibility.	• To know how the processes are conducted • To give an insight into the basics of principles of management	• Identify and study the functions • Framework of the levels of management	6Hrs.

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- Recording of transaction in Journal or Subsidiary books
- Postings into ledger from Journal or subsidiary books.
- Preparation of Trial balance from ledger accounts
- Preparation of Final Accounts on the basis of Trial balance and other information

To know the trading results (Profit or loss) for the accounting period and the financial position as it the end of accounting period the final accounts are prepared. The final accounts consists of : Manufacturing Account, Trading and Profit & Loss Account, Balance sheet.

The followings points must be considered while preparing final accounts from trial balance Debit items of Trial Balance:- The items of expenses or assets appear on debit side of Trial balance. The expenses (the benefit of which is derived within the accounting year in which they are incurred are called revenue expenses. These are debited either to trading account or profit & Loss Account.) Direct expenses such wages. Carriage inwards, freight etc. are debited to trading and indirect exp. such as salaries, rent repairs etc. are debited to profit & Loss account.

The expenses the benefit of which is derived in many years are called capital expenditure. This expenditure is called assets and they appear in the assets side of Balance sheet e.g. Building, Machinery, Furniture, Vehicle etc.

Credit items of Trial Balance: The items of incomes, gains or liabilities appear in the credit side of trial balance. The receipts are divided into two parts capital receipts and revenue receipts. Capital receipts are liabilities items they are mentioned in the liabilities side or deducted from the assets side of Balance sheet. Revenue receipts are called incomes. It is again divided into direct and indirect incomes. Direct incomes means sale proceeds of the goods which is credited to Trading Account. Indirect incomes are other incomes not directly related to the main business activities such as rent commission, interest, dividend etc received. These are credited to profit and loss account.

Trading Account: Trading Account is prepare to calculate gross profit. It can be prepared separately or combined with profit and loss account. Normally it is prepared jointly with profit and loss account. It is the first part of profit and loss account.

Trading Account A/c For the Year ending.....

Particulars	Rs.	Particulars	Rs.
To Opening Stock	-	By Sales -	
To Purchase -		Less: Returns Inward -	-
Less: Ret. Outward -	-	--------	
		By Goods Sent on Consignment	
To Wages	-	By Closing Stock	-
To Carriage	-	By Gross Loss c/d	-
To Fuel	-	(Balancing figure)	
To Motive Power	-		
To Octroi	-		
To Import Duty	-		
To Clearing Charges			

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To Dock Charges		-			
To Stores Consumed		-			
To Royalty based on Production	-	-			
To Manufacturing Exp.					
To Gross Profit c/d (Balancing figure)	-	-			

Profit and Loss Account: Profit and loss accounts is prepared to ascertain net profit or loss. This is the second stage of ascertaining trading results. Gross Profit calculated as per trading account is credited to Profit and loss account then all the indirect expenses are debited and all the indirect incomes are credited. The excess of credits side over debit side is called net Profit and vice versa. The format of P & L account is as under:

Profit and Loss A/c (For the year ending)

Particulars	Amt	Particulars	Amt
To Gross Loss	-	By Gross Profit	-
To Office Salaries & Wages	-	By Discount received	-
To Office Rent, Rates and Taxes	-	By Bad debts recovered	-
To Office Printing and Stationery	-	By Income from Investment	-
To Office Lighting	-	By Commission received	-
To Insurance Premium	-	By Interest on Deposits	-
To Repairs & Maintenance	-	By Profit on sale of fixed assets	-
To Postage & Telegram	-	By Apprenticeship Premium	-
To Legal expenses	-	By Interest on Drawings	-
To Trade expenses	-	By Net Loss (Transferred to	-
To Audit fees		Capital Account)	
To Telephone expenses			
To General expenses			
To Bank Charges			
To Discount allowed			
To Interest on Capital			
To Interest on loan			
To Discount of Rebate on bills of exchange			
To Carriage outward			
To Freight outward			
To Bad debts			
To Entertainment expenses			
To Travelling Expenses			
To Cost of Samples			
To Catalogue expenses			
To Salesmen's salaries			
To Expenses and commission To Advertising expenses			
To Depreciation on fixed Assets			
To Loss on sale of fixed assets			
To Net Profit (Transferred to capital account)			

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Balance Sheet

As on 31 March .....

Liabilities	Rs.	Assets	Rs.
Capital	-	Fixed Assets: Patent	-
Long term liabilities	-	Goodwill	-
Debentures	-	Land and Building Plant	-
Bank Loan Current	-	& Machinery Furniture	-
Liabilities: Advance	-	and fixtures	-
Income	-	Current Assets:	-
Outstanding expenses	-	Short terms Investment	-
Bank overdraft	-	Prepaid expenses)	-
Bills Payable Creditors	-	Accrued Income	-
Unearned Income	-	Debtors	-
	-	Closing Stock	-
		Bank Balance	-
		Cash Balance	

Closing Entries

At the end of the year after preparing trial balance a list of unrecorded items is prepared which is called list of adjustment for which adjustment entries are passed. Now closing entries will be passed. The purpose of closing entries is to closed all those accounts which comes in trading and profit & Loss and these accounts are mainly related to goods and expenses and incomes.

PROBLEMS

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FOUNDATION COURSE ON "BASICS OF ACCOUNTING"
Pre-Assessment Question Paper of 1st B. Com Online Classes for the Academic Year 2023-2024

Total Marks: 10 **Time: 30 minutes**

1. Which of the following accounts will be debited if a company purchases furniture for cash?
   a. Purchases A/c
   b. Furniture A/c
   c. Cash A/c
   d. Fixed Assets A/c

2. An entry of more than one debit or credit is known as
   a. Compound entry
   b. Multiple entry
   c. Single entry
   d. Double entry

3. Which among the following is true??
   a. Assets = Liabilities + Capital
   b. Liabilities = Assets- Capital
   c. Capital = Assets- Liabilities
   d. All of these

4. The rule "debit the receiver and credit the giver" relates to
   a. Personal account
   b. Real account
   c. Nominal account
   d. Capital account

5. Sales made to Akash is debited to
   a. Cash account
   b. Monish account
   c. Purchases account
   d. Sales account

6. Business enterprise is separate from its owner according to the Balance sheet
   a. Business entity concept
   b. Money measurement concept
   c. Matching concept
   d. Dual aspect concept

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7. If the selling price is Rs. 20,000 and the cost of goods sold is Rs. 18,000 then the result will be

a. Profit of Rs.2,000
b. Profit of Rs. 18,000
c. Loss of Rs.2,000
d. Loss of Rs.18,000

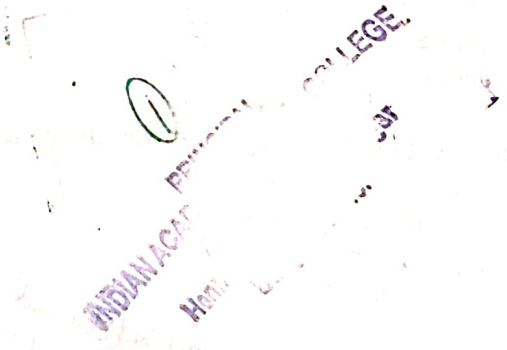
8. Which among the following is an intangible asset?
   a. Goodwill
   b. Working capital
   c. Net income
   d. Capital

9. Debit Balances in the ledger will be
   a. An expense or an asset
   b. An expense or a liability
   c. An income or an asset
   d. An income or a liability

10. Trial balance shows
   a. The balance of profit& loss a/c
   b. Arithmetical accuracy of journal entries
   c. Arithmetical accuracy of ledger accounts
   d. Balance between assets and liabilities



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FOUNDATION COURSE ON "BASICS OF ACCOUNTING"
Post Assessment Question Paper of 1st B. Com Online Classes for the Academic Year 2023-2024

Total Marks: 20 **Time: 30 minutes**

1. If the building is Rs 2,80,000, Bills Receivable is Rs 20,000 and Sundry Creditors is Rs 50,000 the owner's capital is Rs _____
   a. 1,70,000
   b. 2,30,000
   c. 1,10,000
   d. None of these

2. Which of the following is not a correct
   a. Axis Bank - Real A/c
   b. Outstanding Expenses - Personal A/c
   c. Purchases - Real A/c
   d. Salary - Nominal A/c

3. Purchase of goods from Rakesh on cash. Rakesh A/c will appear in
   a. Purchase ledger debit side
   b. Purchase ledger credit side
   c. Both the side
   d. None of the above

4. Reserve & surplus appears on :
   a. Trading A/c
   b. Profit & Loss A/c
   c. Balance sheet
   d. Cashbook

5. The Good will is
   a. An Asset
   b. A Liability
   c. A Direct Income
   d. An Indirect Income

6. Interest on Drawings is recorded in the Asset
   a. Trading A/c debit side
   b. Profit & Loss A/c debit side
   c. Profit & loss A/c credit side

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d. None of the Above

7. The summary of the closing balance of Ledger A/c is called?
   a. Journal
   b. Trial Balance
   c. Balance Sheet
   d. Trading A/c

8. The outstanding salary amount will be recorded in trail balance
   a. Debit Side
   b. Credit Side
   c. Both the side
   d. None of the above

9. The opening balance of cash is recorded in the
   a. Debit side of cash book
   b. Credit Side of cash book
   c. Both the side of cash book
   d. None of these

10. Salary paid appeared in the P/L balance
    a. Debit side
    b. Credit side
    c. Both A & B
    d. None of the these

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FOUNDATION COURSE ON "BASICS OF ACCOUNTING"

Post Assessment Marks List of 1st B.Com Online Classes for the Academic Year 2023-2024

CLASS: 1st B.COM C SEC
FACULTY: Mr.Raghu

Sl No	Name Of the student	Total Marks	Marks Score
1.	NITHISH PAUL P	20	8
2.	NOORUDDIN	20	6
3.	OMJI SINGH A	20	14
4.	PAMELA BENNY	20	14
5.	PASUPULETI BALAJI	20	6
6.	POOJA DAS M	20	4
7.	PRABHAS K	20	4
8.	PRASHANT K	20	12
9.	PUGALESH R	20	10
10.	R ABDUL LATEEF	20	8
11.	R CHETHAN	20	8
12.	R SYLVESTER KEVIN	20	8
13.	RAGUL.M	20	14
14.	RAHUL.M	20	12
15.	RAJA	20	12
16.	RAKESH G	20	10
17.	RIYAN BAIG	20	16
18.	ROQUAYA SABA	20	16
19.	ROSHAN KUMAR SHARMA	20	10
20.	S. VIJETHA SUSHMA	20	16
21.	SABARINATHAN S	20	0
22.	SACHIN.P	20	12
23.	SAFFIA JEENAN	20	10
24.	A SALIF SAIT	20	10
25.	SANDHIYA R	20	20
26.	SANJANA V	20	14
27.	SANTHOSH GOWDA B	20	18

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28.	SANTHOSH KUMAR.S	20	10
29.	SANTHOSH M	20	8
30.	SATHISH.K	20	6
31.	SATHISH R	20	12
32.	SEBASTINE A	20	10
33.	SHAIK MOHAMMAD AFNAN	20	16
34.	SHAIKH MUFEEZ AHMED	20	16
35.	SHAKTHI UMA MAHESHWARI H	20	16
36.	SHASHANK G	20	14
37.	SHASHI KIRAN B A	20	6
38.	SHEIKH USMAN	20	4
39.	SHIVA KUMAR M	20	12
40.	SIDDHARTH KUMAR	20	16
41.	SINDHU V	20	10
42.	SIVESH NATHAN A	20	8
43.	STALIN A	20	8
44.	SUBASH M	20	12
45.	SUMITH KUMAR CHOUDARY	20	10
46.	SUNIL KUMAR A	20	6
47.	SUNIL M	20	8
48.	SUPRIYA K	20	10
49.	SURYA R	20	8
50.	SURYA V	20	12
51.	SURYAN FATHIB ALAM KHAN	20	8
52.	SUSHMITHA S	20	20
53.	SWATHI K	20	20
54.	SWETHA.V	20	2
55.	SYED SHOAIB MEHDI	20	12
56.	SYED SULTAN SALAUDDIN	20	16
57.	TULAJA A	20	10
58.	VARUN KUMAR S	20	8
59.	VARUN V	20	8
60.	VENKITH GOWDA S	20	12
61.	VIDYA SHREE M	20	10
62.	VIGNESH.KS	20	6
63.	VIGNESH V	20	8

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64.	VIKAS N	20	10
65.	VIMAL RAO G	20	8
66.	VISHAL SHARMA	20	12
67.	VISHNUPRIYA.S	20	8
68.	VIVEK V	20	12
69.	YUVARAJ M	20	16
70.	ZAAKIA LATIEF	20	10
71.	JEEVARAJ V	20	8
72.	MOHAMMED WASEEULLA	20	8
73.	NITISH KUMAR R	20	12
74.	PAVANI S	20	10
75.	PRASHANTH S	20	6
76.	ROHITH ALWIN A	20	8
77.	SANDRA RITHIKA A	20	10
78.	SACHIN KUMAR R	20	8
79.	SARAN S	20	12

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FOUNDATION COURSE ON "BASICS OF ACCOUNTING"

Pre-Assessment Marks List of 1st B. Com Online Classes for the Academic Year 2023-2024

Sl No	Name Of the student	Total Marks	Marks Scored
1.	NITHISH PAUL P	10	1
2.	NOORUDDIN	10	2
3.	OMJI SINGH A	10	4
4.	PAMELA BENNY	10	3
5.	PASUPULETI BALAJI	10	4
6.	POOJA DAS M	10	6
7.	PRABHAS K	10	4
8.	PRASHANT K	10	4
9.	PUGALESH R	10	5
10.	R ABDUL LATEEF	10	4
11.	R CHETHAN	10	4
12.	R SYLVESTER KEVIN	10	5
13.	RAGUL.M	10	4
14.	RAHUL.M	10	5
15.	RAJA	10	3
16.	RAKESH G	10	2
17.	RIYAN BAIG	10	4
18.	ROQUAYA SABA	10	3
19.	ROSHAN KUMAR SHARMA	10	3
20.	S. VIJETHA SUSHMA	10	6
21.	SABARINATHAN S	10	4
22.	SACHIN.P	10	5
23.	SAFFIA JEENAN	10	3
24.	A SALIF SAIT	10	1
25.	SANDHIYA R	10	5
26.	SANJANA V	10	4
27.	SANTHOSH GOWDA B	10	3
28.	SANTHOSH KUMAR.S	10	3
29.	SANTHOSH M	10	6
30.	SATHISH.K	10	4
31.	SATHISH R	10	3

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32.	SEBASTINE A	10	5
33.	SHAIK MOHAMMAD AFNAN	10	3
34.	SHAIKH MUFEEZ AHMED	10	6
35.	SHAKTHI UMA MAHESHWARI H	10	4
36.	SHASHANK G	10	3
37.	SHASHI KIRAN B A	10	7
38.	SHEIKH USMAN	10	3
39.	SHIVA KUMAR M	10	5
40.	SIDDHARTH KUMAR	10	2
41.	SINDHU V	10	7
42.	SIVESH NATHAN A	10	2
43.	STALIN A	10	2
44.	SUBASH M	10	4
45.	SUMITH KUMAR CHOUDARY	10	2
46.	SUNIL KUMAR A	10	4
47.	SUNIL M	10	2
48.	SUPRIYA K	10	6
49.	SURYA R	10	5
50.	SURYA V	10	5
51.	SURYAN FATHIB ALAM KHAN	10	5
52.	SUSHMITHA S	10	5
53.	SWATHI K	10	3
54.	SWETHA.V	10	4
55.	SYED SHOAIB MEHDI	10	3
56.	SYED SULTAN SALAUDDIN	10	6
57.	TULAJA A	10	1
58.	VARUN KUMAR S	10	3
59.	VARUN V	10	7
60.	VENKITH GOWDA S	10	3
61.	VIDYA SHREE M	10	4
62.	VIGNESH.KS	10	4
63.	VIGNESH V	10	4
64.	VIKAS N	10	5
65.	VIMAL RAO G	10	1
66.	VISHAL SHARMA	10	5
67.	VISHNUPRIYA.S	10	7
68.	VIVEK V	10	5
69.	YUVARAJ M	10	7
70.	ZAAKIA LATIEF	10	7

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FOUNDATION COURSE ON "BASICS OF ACCOUNTING"
ATTENDANCE SHEET 1st B. Com C SECTION for the Academic Year 2023-2024

Sl No	NAME OF THE STUDENTS	DATE & TIME									
1	Nithin Kumar	1	2	3	4	5	6	7	8	9	10
2	Nithish paul	1	2	3	4	5	6	7	8	9	10
3	Nitish Kumar. R	1	2	3	4	5	6	7	8	9	10
4	Nooyuddin	1	2	3	4	5	6	7	8	9	10
5	Omji Singh	1	2	3	4	5	6	7	8	9	10
6	PN Chaitan	1	2	3	4	5	6	7	8	9	10
7	Pamela Benny	1	2	3	4	5	6	7	8	9	10
8	Pasupaleti Balaji	1	2	3	4	5	6	7	8	9	10
9	Pavani. S	1	2	3	4	5	6	7	8	9	10
10	Pooja Das. M	1	2	3	4	5	6	7	8	9	10
11	Pyabhas. k	1	2	3	4	5	6	7	8	9	10
12	Pyashanth. k	1	2	3	4	5	6	7	8	9	10
13	Pyashanth. S	1	2	3	4	5	6	7	8	9	10
14	Pugalesh. R	1	2	3	4	5	6	7	8	9	10
15	R. Abdul Lateef	1	2	3	4	5	6	7	8	9	10
16	R. Chethan	1	2	3	4	5	6	7	8	9	10
17	R. Sylvestery Kevin	1	A	A	2	3	4	5	6	7	8
18	Rahul. M	1	2	3	4	5	6	7	8	9	10
19	Rahul. M	1	A	2	3	4	5	6	7	8	9
20	Raja	1	A	2	3	4	5	6	7	8	9
21	Rakesh. G	1	2	3	4	5	6	7	8	9	10
22	Riyan Baig	1	2	3	4	5	6	7	8	9	10
23	Rohan Kumar	1	2	3	4	5	6	7	8	9	10
24	S. Vijetha Sushma	A	1	A	A	2	3	4	5	6	7
25	Sabarinathan. S	1	2	3	4	5	6	7	8	9	10
26	Sachin. P	1	2	3	4	5	6	7	8	9	10
27	Saffia Jeenan	1	2	3	4	5	6	7	8	9	10
28	Roguaya Saba	1	2	3	4	5	6	7	8	9	10
29	Salif Sait	1	2	3	4	5	A	A	A	A	A
30	Sandhiya. R	1	2	3	4	5	6	7	8	9	10
31	Sandhya. S	1	2	3	4	5	6	7	8	9	10
32	Sanjana K	1	2	3	4	5	6	7	8	9	10

Magdelendra
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Bangaloro - 43.

33	Sanjana. V	1	2	3	4	5	6	7	8	9	10
34	Santhosh Gowda. B	1	2	3	4	5	6	7	8	9	10
35	Santhosh Kumar. S	1	2	3	4	5	6	7	8	9	10
36	Santhosh. M	1	2	3	4	5	6	7	8	9	10
37	Sanjan. S	1	2	3	4	5	6	7	8	9	10
38	Sathish. k	1	2	3	4	5	6	7	8	9	10
39	Sabastine. A	1	2	3	4	5	6	7	8	9	10
40	Shaik Mohammed Afnan	1	2	3	4	5	6	7	8	9	10
41	Shaik Muteez Ahmed	1	2	3	4	5	6	7	8	9	10
42	Shakthi Uma Maheshwari	1	2	3	4	5	6	7	8	9	10
43	Shashank. G	1	2	3	4	5	6	7	8	9	10
44	Sheikh Usman	1	2	3	4	5	6	7	8	9	10
45	Shivakumar. M	1	2	3	4	5	A	6	7	8	9
46	Siddarth kumar	1	2	A	A	3	4	5	6	7	8
47	Sindhu. V	1	2	3	4	5	6	7	8	9	10
48	Sathish. R	1	2	3	4	5	6	7	8	9	10
49	Sivesh Nathan. A	1	2	3	4	5	6	7	8	9	10
50	Subash. M	1	2	3	4	5	6	7	8	9	10
51	Sumith kumar. C	1	2	3	4	5	6	7	8	9	10
52	Sunil Kumar. A	1	2	3	4	5	6	7	8	9	10
53	Sunil. M	1	2	3	4	5	6	7	8	9	10
54	Supriya. k	1	2	3	4	5	6	7	8	9	10
55	Suryd. V	1	2	3	4	5	6	7	8	9	10
56	Sushrouth. M	1	2	3	4	5	6	7	8	9	10
57	Suryan fathib										
58	Alam khan	1	2	3	4	5	6	7	8	9	10
59	Sushmitha. S	1	2	3	4	5	6	7	8	9	10
60	Swathi. K	1	2	3	4	5	6	7	8	9	10
61	Swetha. V	1	2	3	4	5	6	7	8	9	10
62	Syed Sulthan Salaudhin	A	A	1	2	3	4	5	6	7	8
63	Syeda Maheen Ayshad	1	2	3	4	5	6	7	8	9	10
64	Tulaja. A	1	2	3	4	5	6	7	8	9	10
65	Varun. V	1	2	3	4	5	A	6	7	8	9
66	Venkith Gowda. S	1	2	3	4	5	6	7	8	9	10
67	Vidya Shree. M	1	2	3	4	5	6	7	8	9	10
68	Vignesh. ks	1	2	3	4	5	6	7	8	9	10
69	Vignesh. V	1	A	A	2	3	4	5	6	7	8
70	Vikas. N	1	2	3	4	5	6	7	8	9	10
71	Vimal Rao. G	1	2	3	4	5	6	7	8	9	10
72	Vishal Sharma	1	2	3	4	5	6	7	8	9	10
73	Vishnupriya. S	1	2	3	4	5	6	7	8	9	10
74	Vivek. V	1	2	3	4	5	6	7	8	9	10
75	Zaakiya Lathief	1	A	2	3	4	5	6	7	8	9

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Degree College - Autonomous

DEPARTMENT OF COMPUTER SCIENCE

Bridge course- BCA 2023-2027

I SEM BCA 'B'

DATA STRUCTURES

Date 24/07/2023-28/07/2023

Duration -05 Hrs

Handled By

Ms. Beena Uphale

PRINCIPAL
INDIAN ACADEMY DEGREE COLLEGE
AUTONOMOUS
Hennur Cross, Kalyan Nagar
Bangalore - 43.

HOD

Mrs. Anuradha P

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road,
Bangalore-560043.

INDIAN ACADEMY
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Computer Science

Bridge Course-BCA 2022-2023

Data Structures

Date 24/07/20123 -28/07/2023

Course Objectives

- To bridge the gap between knowledge
- To make students familiar with basics
- To make learner familiar with basic concepts
- To develop logic

Course Outcomes

- At the end of the courser student will be able to
- Understand the fundaments
- Understand the basics of programming
- Understand the basics building blocks of C programming

Course Content

- Basics of computers
- Algorithms
- Data types
- C programming concepts
- Array
- Stacks

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Department of Computer science
Bridge course-BCA 2023-2027 Pre Assessment Test
Sem 1 Section B
Data structure Date-24/07/23

1)What is a variable?
Value changes
Value never changes

2)Integer variable
34

34.5

3)Float variable
34
34.5

4)Collection of items of same data type
Variable
Array

None

5) character variable
a
abcd

6)String variable
A
ABCD

7)In array
each item is contiguous.
each item is not contiguous.

8)We can do arithmetic operations on character variable
True
False

9)Each variable has a unique memory address
True
False

10)Traversing an array means
Searching an element
Accessing each element
Sorting an array

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Department of Computer science
Bridge course-BCA 2023-2027 Pre Assesment Marks
Sem 1 Section B Data Structures

Sr No	Student Name	Score
1	Moin Ahmed Khan	7 / 10
2	Mohammed huzaif	9 / 10
3	Priyanka M S	8 / 10
4	Mohammed Rehan	10 / 10
5	Nethravathi S	6 / 10
6	Nancy Nikhita.a	9 / 10
7	Nisha.R	9 / 10
8	Pruthvi Raj D	6 / 10
9	Narasimha B	6 / 10
10	Mohammed rehan	7 / 10
11	Thanyata .P.S	6 / 10
12	Mohammed wasil	10 / 10
13	Mohammed muzammil khan	7 / 10
14	Mubarak ali	6 / 10
15	p.sabarinatha	8 / 10
16	Md Imtiyaz	9 / 10
17	Muthu Lakshmi m	6 / 10
18	Nikhil sharma	5 / 10
19	Nitesh Rao S	4 / 10
20	N Faisal ahmed	6 / 10
21	Mohammed Abubakar Siddique	6 / 10
22	N.K FathimaTabassum	8 / 10
23	Mohammed Owais	9 / 10
24	Maqsood ali pathan	7 / 10
25	Priya T	8 / 10
26	M.Mohseena	9 / 10
27	Mohammed muzammil	9 / 10
28	Mohammed Ibrahim	9 / 10
29	Mohammed Hamza	2 / 10
30	A MD Zaid	10 / 10
31	Mohd Affan	8 / 10
32	Mohammed Abdul Wahid	7 / 10
33	MOHAMMED TAUSIF	6 / 10
34	Praveen. B	10 / 10
35	Manu srinivas	5 / 10
36	Mohammed Adnan	3 / 10
37	Monisha sharon	6 / 10
38	Momin Basha	7 / 10
39	Priyanka p	9 / 10
40	Mohammed rahim ul zaid	7 / 10
41	Mohammed mufasil hussain	8 / 10
42	Nafiha	10 / 10
43	Naziya arfa anjum	9 / 10
44	Owaiz ahmed	6 / 10
45	Nandini	9 / 10
46	Priyanka	7 / 10
47	Naveen	9 / 10

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Who is the Father of the Computer?

Charles Babbage

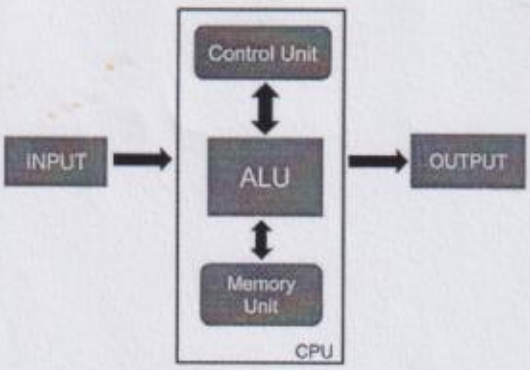
Computer is an automatic electronic machine that can store, recall and process data

Characteristics of Computers

- Speed -The ability to work fast .
- Storage-can store large amount of data
- Accuracy-The computer generated results are exact and without any mistakes
- Versatility-Computers seem capable of performing almost any task,
- Automation-perform tasks with where human input is minimize
- Diligence-a computer does not suffer from the human traits of tiredness and lack of concentration.
- Cost effectiveness -Computers reduce the amount of paper work and human effort, thereby reducing costs.

Functional components of a computer

- (working of each unit)
- Basically any computer is supposed to carry out the following functions.
- Ø Accept the data and program as input
- Ø Store the data, program and retrieve as and when required.
- Ø Process the data as per instructions given by the program and convert it into useful information
- Ø Communicate the information as output



block diagram of the computer

- Input Devices

An input device is any hardware component that allows you to enter data and instructions into a computer. Some of the widely used input devices are the keyboard, mouse, microphone, scanner, and Webcam.

Output Unit -An output device is any hardware component that conveys information to one or more people.in user understandable form. Commonly used output devices are printer, monitor and speakers

- **Central Processing Unit-**

CPU is the part of the computer that carries out the instructions of a computer program.

It is the unit that reads and executes program instructions. Hence it is known as the brain of the computer. It takes all major decisions,

Directs different parts of the computer

. It consists of arithmetic and logic units, control unit and internal memory (registers). The CPU controls and coordinates all the actions of the entire system.

- **Memory Unit** -Results obtained after processing will be in the primary memory, these data or information can be stored in the storage device/secondary memory units
- **Computer memory divided into two parts**

1. Volatile memory

- Volatile memory is a temporary memory that loses its contents when the computer or hardware device loses power.eg. RAM

2. Non-volatile memory

- Non-volatile memory keeps its contents even if the power is lost. Example: ROM is a good example of a non-volatile memory

Algorithms

Addition of two numbers

- INPUT a,b
- 2. c= a+b
- 3. OUTPUT a
- 5. STOP

Find the area of a circle.

1. INPUT radius

2. a = 3.142 * radius * radius

3.OUTPUT a

5. STOP

Write an algorithm

- Find the total of five subject
- Find the average of five subject
- Find the area of rectangle(A=L*B)
- Find the area of square(A=L*L)
- Find the area of triangle(A=0.5*b*h)
- find the volume of a cylinder(3.14*r*r*h)
- Find square 0f a number
- Find cube of a number
- Swap Two Variables using Third
- Calculate discount 2 %and final bill for given purchase amount

```
#include <stdio.h>

int main()
{
 printf("Hello World!");
 return 0;
}
```

```
#include <stdio.h>

void main()
{
 printf("Hello World!");

}
```

Line 1: #include <stdio.h> is a **header file library** that lets us work with input and output functions,

such as printf() (used in line 4). Header files add functionality to C programs.

Another thing that always appear in a C program, is main().

This is called a function. Any code inside its curly brackets {} will be executed.

printf() is a function used to output/print text to the screen. In our example it will output "Hello World!"

Data Types in C

A data type specifies the type of data that a variable can store such as integer, floating, character, etc.

Types	Data Types
Basic Data Type	int, char, float, double
Derived Data Type	array, pointer, structure, union
Enumeration Data Type	enum
Void Data Type	void

nt:

Integers are entire numbers without any fractional or decimal parts, and the ***int data type*** is used to represent them.

Char:

Individual characters are represented by the ***char data type***. Typically used to hold ***ASCII*** or ***UTF-8 encoding scheme characters***, such as ***letters, numbers, symbols***, or ***commas***. There are ***256 characters*** that can be represented by a single char, which takes up one byte of memory. Characters such as ***'A', 'b', '5',*** or ***'$'*** are enclosed in single quotes.

Float:

To represent integers, use the ***floating data type***. Floating numbers can be used to represent fractional units or numbers with decimal places.

The ***float type*** is usually used for variables that require very good precision but may not be very precise. It can store values with an accuracy of about ***6 decimal places*** and a range of about ***3.4 x 1038*** in ***4 bytes*** of memory.

- int age = 25;
- char grade = 'A';
- float temperature = 98.6;

Variables in C

A **variable** is a name of the memory location. It is used to store data. Its value can be changed, and it can be reused many times.

It is a way to represent memory location through symbol so that it can be easily identified.

Let's see the syntax to declare a variable:

1. int a;
2. float b;
3. char c;

Write a C program to add two numbers

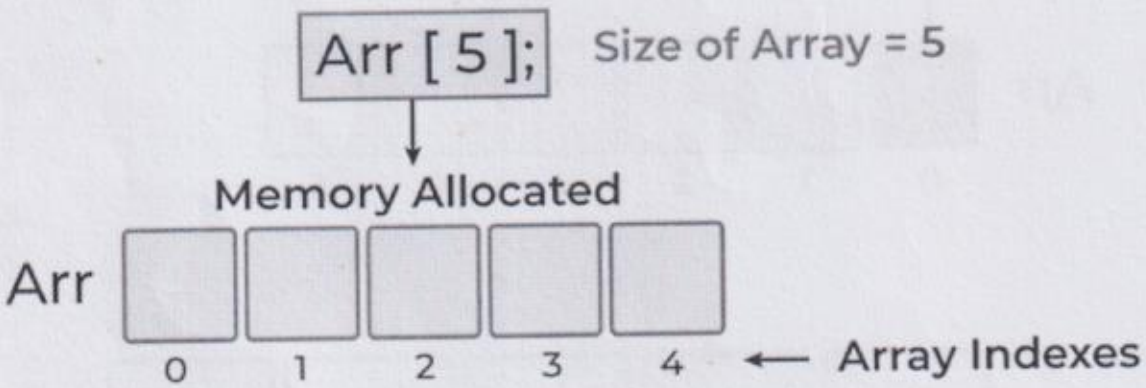
```
#include <stdio.h>
void main()
{
int a,b,c;
 printf("enter value of a");
scanf("%d",&a);
printf("enter value of b");
scanf("%d",&b);
c=a+b;
printf("%d",c);
 getch();
}
```

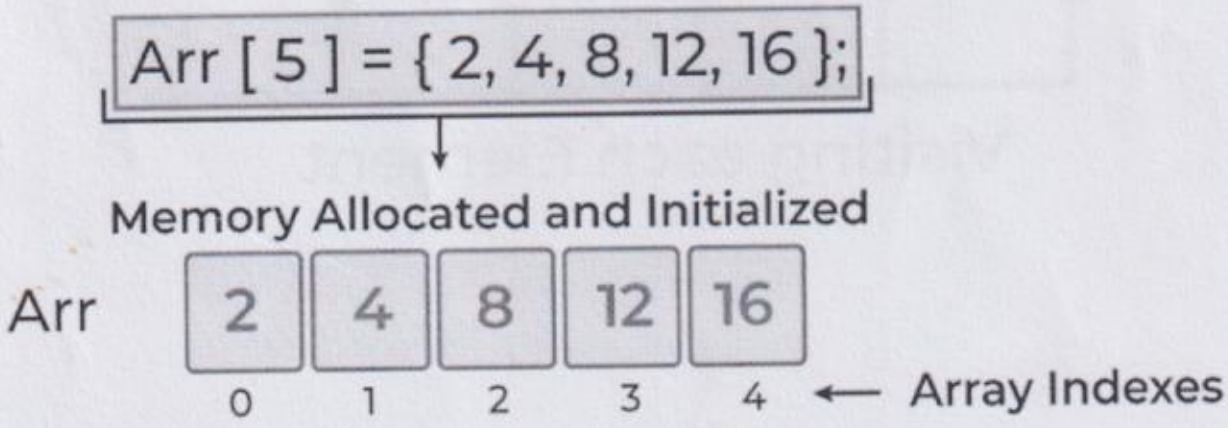
Write a C program

- Find the total of five subject
- Find the average of five subject
- Find the area of rectangle(A=L*B)
- Find the area of square(A=L*L)
- Find the area of triangle(A=0.5*b*h)
- find the volume of a cylinder (3.14*r*r*h)
- Find square 0f a number
- Find cube of a number
- Swap Two Variables using Third
- Calculate discount 2 %and final bill for given purchase amount

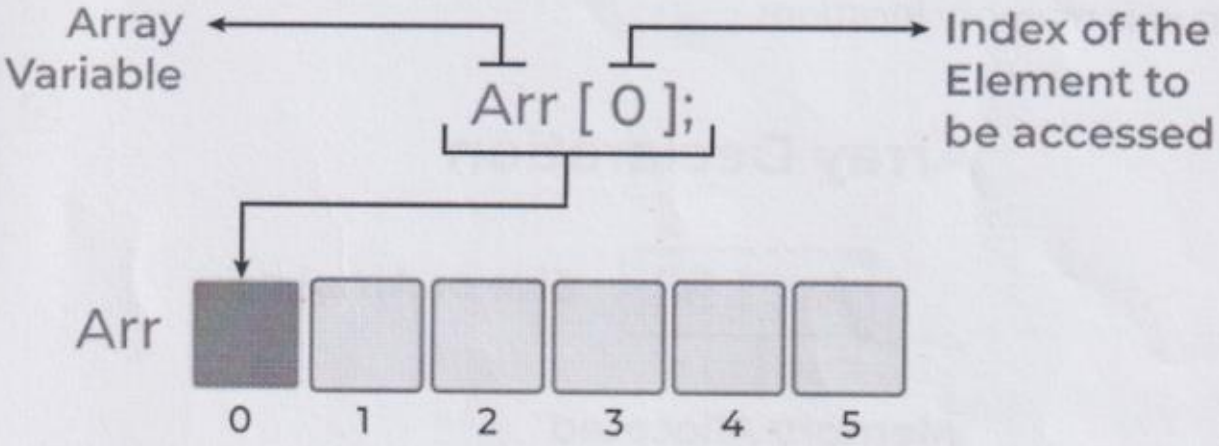
Array

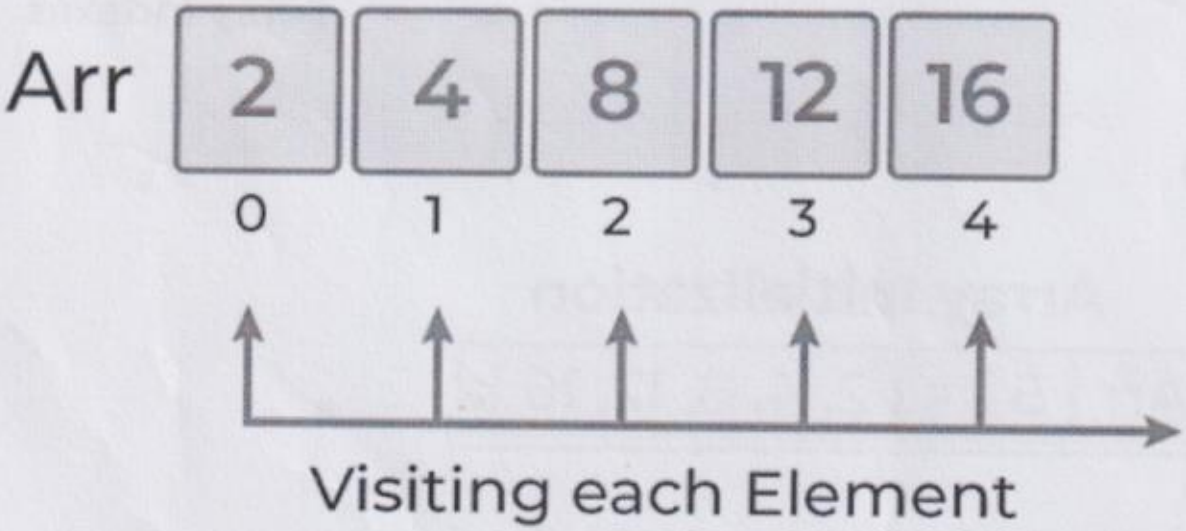
- **Array in C** is one of the most used data structures in C programming. It is simple and fast way of storing multiple values under a single name.
- An array in C is a fixed-size collection of similar data items stored in contiguous memory locations





Access Array Element





Traversing a Linear Array

Traversing is the process of visiting each subscript at least once from the beginning to last element

Algorithm:

Let A be a linear array with LB and UB as lower bound and upper

bound. This algorithm traverses the array A by applying the operation PROCES

to each element of A.

1. for LOC = LB to UB

PROCESS A[LOC]

End of for

2. Exit

Searching

Searching an element It refers to finding the location of the element in a linea array. There are many different algorithms. But the most common methods ar linear search and binary search.

Insertion an element

Insertion refers to inserting an element into the array. A new element can be done provided the array should be large enough to accommodate the new element. When an element is to be inserted into a particular position, all the elements from the asked position to the last element should be shifted into th higher order position

Elements of linear array are stored in consecutive memory locations. Let P be the location of the element. Address of first element of linear array A is given by Base(A) called the Base address of A. Using this we can calculate the addres of any element of A by the formula

LOC(A[P]) = Base(A) + W(P – LB)

Here W is the number of words per memory cell

Address	content	location
1000	A	S[0]
1001	B	S[1]
1002	C	S[2]
1003	D	S[3]
1004	E	S[4]

Address(S[3]) = Base(S) + W(P - LB)

Here W = 1 for characters

= 1000 + 1(3 - 0) = 1003

Basic operations on one-dimensional arrays

The following operations are performed on arrays

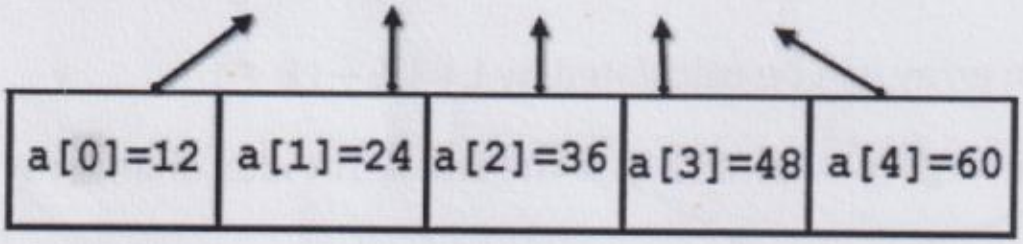
1. Traversing: Accessing each element of the array exactly once to do some operation.
2. Searching: Finding the location of an element in the array.
3. Sorting: Arranging the elements of the array in some order.
4. Insertion: Inserting an element into the array.
5. Deletion: Removing an element from the array.
6. Merging: Combining one or more arrays to form a single array.

An array is a collection of homogeneous elements with unique name and the elements are arranged one after another in adjacent memory location.

The data items in an array are called as elements.

These elements areaccessed by numbers called as subscripts or indices. Since the elements areaccessed using subscripts, arrays are also called as subscripte variables.

```
int a[5]={12,24,36,48,60}
```



Features:

- Array size should be positive number only.
- Array elements are counted from 0 to n-1.
- Useful for multiple reading of elements.

Types of Arrays:

There are three types of array:

- One-dimensional Array
- Two-dimensional Array
- Multi-dimensional array

One-dimensional Array

An array with only one row or column is called one-dimensional array. It is fini collection of n number of elements of same type such that

Elements are stored in contiguous locations

Elements can be referred by indexing Array can be denoted as:

data type Arrayname[size];

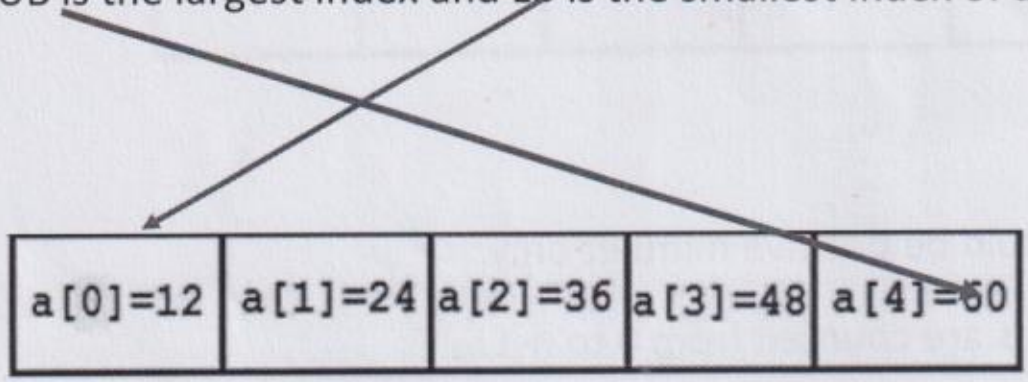
int a[5];

Calculating the length of Array

Arrays can store a list of finite number (n) of data items of same data typein consecutive locations. The number n is called size or length of the array.

The length of an array can be calculated by L = UB – LB + 1

Here, UB is the largest index and LB is the smallest index of an array.



UB = 4 and LB= 0

Size of the array L = 4 – 0 + 1 = 5

Total size in byte

Total size=length of array * size of data type

=4*2=8 bytes

Representation of one-dimensional arrays in memory

Stack

stack is an ordered collection of items where the addition of new items and the removal of existing items always take place at the same end.

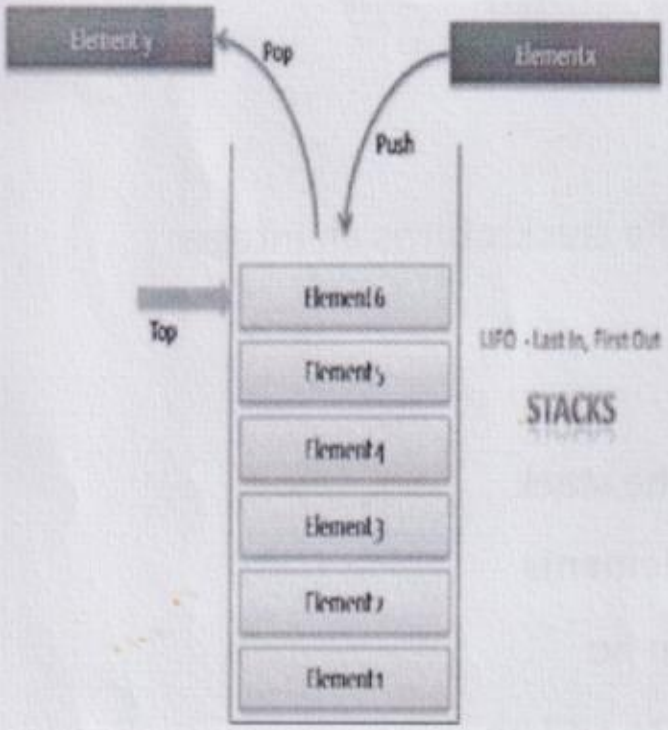
This end is commonly referred to as the “top”. The end opposite to top is known as the base

items stored in the stack that arecloser to the base represent those that have been in the stack the longest.

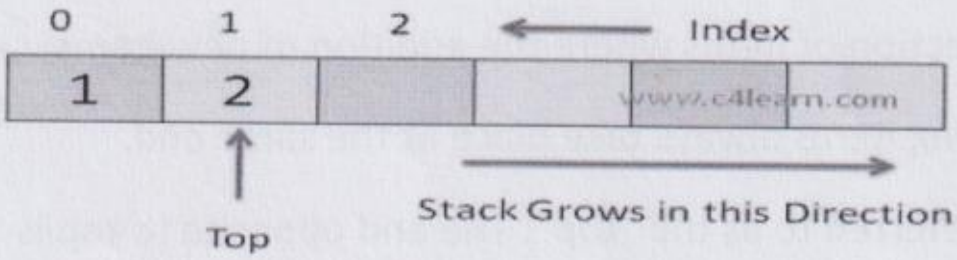
Themost recently added item is the one that is in position to be removed first.

This ordering principle is sometimes called LIFO,

last-in first-out



Array Representation of a Stack



Operation Stack

stack() creates a new stack that is empty.

- push(item) adds a new item to the top of the stack. It needs the item
- pop() removes the top item from the stack.

returns the item. The stack is modified.

- peek() returns the top item from the stack but does not remove it. The stac is not modified.
- isEmpty() tests whether the stack is empty.

and returns a Boolean value.

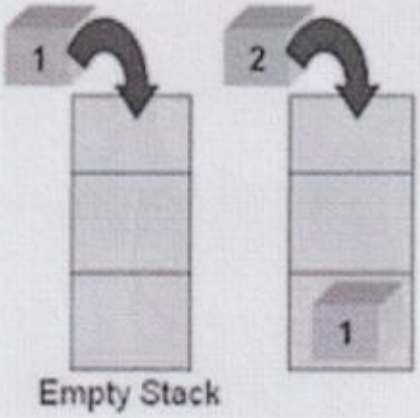
- size() returns the number of items on the stackreturns an integer

PUSH Operations

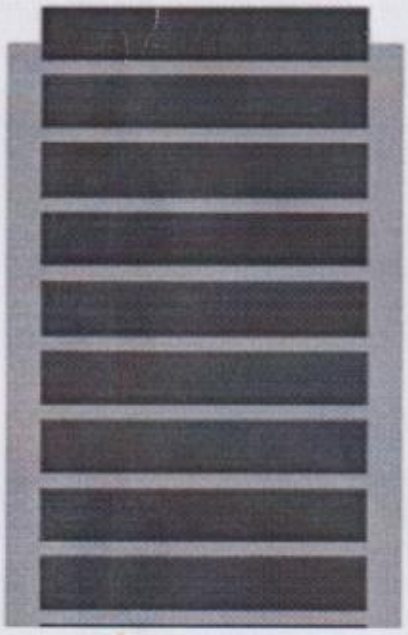
PUSH adds a new element at the TOP of the stack.

It is an insertion operation. We can add elements to a stack until it is full. A stack is full when no more elements can be added to it. Trying to add an element to a full stack results in an exception called 'overflow'.

PUSH Operation

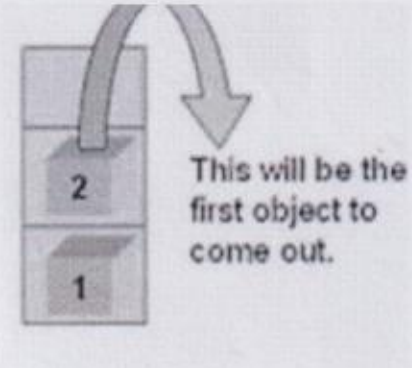


Stack overflow



POP Operations

POP operation is used to remove the top most element of the stack, that is, the element at the TOP of the stack. It is a delete operation. We can delete elements from a stack until it is empty i.e. there is no element in it. Trying to delete an element from an empty stack results in an exception called 'underflow'.



Application of Stacks

"undo" mechanism in text editors;

Backtracking in games

Array

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Department of Computer science

Bridge course-BCA 2023-2027 Bridge Course Attendance

Sem 1 Section B

Data Structures

Sl No	Name of the student	24/07	25/07	26/07	27/07	28/07
1	MANU S	P	P	P	P	P
2	MAQSOOD ALI	P	P	A	A	A
3	MOHAMMED ABDUL WAHID	P	P	P	P	P
4	MOHAMMED ABUBAKAR SIDDIQUE	P	P	P	P	P
5	MOHAMMED ADNAN	P	P	P	A	P
6	MOHAMMED AFFAN	P	P	P	P	P
7	MOHAMMED AFZAL	P	P	P	P	P
8	MOHAMMED ALI	P	A	P	P	P
9	MOHAMMED HAMZA	P	P	P	A	P
10	MOHAMMED HUZAIF	P	A	P	P	P
11	MOHAMMED IBRAHIM	P	A	P	A	A
12	MOHAMMED IMTIYAZ	P	P	P	P	P
13	MOHAMMED MUFASIL HUSSAIN	P	P	P	A	P
14	MOHAMMED MUZAMMIL KHAN	P	P	A	P	P
15	MOHAMMED OWAIS	P	P	P	P	P
16	MOHAMMED RAHIM UL ZAID	P	P	P	P	P
17	MOHAMMED REHAN	P	P	P	P	P
18	MOHAMMED REHAN	P	P	P	P	P
19	MOHAMMED TAHIR	A	P	P	P	P
20	MOHAMMED TAUSIF	P	A	A	A	A
21	MOHAMMED UMAR FAROOQ	A	A	A	P	A
22	MOHAMMED WASIL	P	P	P	P	P
23	MOHAMMED YASEER	P	A	A	A	A
24	MOHAMMED ZAID	P	P	P	P	P
25	MOHAMMED ZAID KHAN	A	A	A	A	A
26	MOHSEENA	P	A	A	A	P
27	MOIN AHMED KHAN	P	P	A	A	P
28	MOMIN BASHA	P	P	A	A	P
29	MONISHA M	P	P	P	P	P
30	MONISHA SHARON	A	A	A	A	A
31	MUBARAK	P	P	A	A	p
32	MUHAMMED SINAN A	P	P	A	A	p

33	MUSTABSHIRA	P	P	A	A	p
34	MUTHU LAKSHMI . M	P	P	P	A	A
35	N FAISAL AHMED	P	P	P	A	A
36	N K FATHIMA TABASSUM	P	P	P	P	P
37	NAFIHA	P	P	P	P	P
38	NANCY NIKITA A	P	P	P	P	P
39	NANDINI	P	P	P	P	P
40	NARASIMHA B	P	A	P	P	P
41	Naresh Kumar	P	A	A	P	A
42	NAVEEN T	P	P	P	P	P
43	NAYANATHARA R	A	P	P	A	A
44	NAZIYA ARFA ANJUM	P	P	A	P	A
45	NETHRAVATHI.S	P	P	P	P	P
46	NIKHIL SHARMA	P	P	P	P	P
47	NISHA R	P	P	P	P	A
48	NITESH RAO S	P	P	P	P	P
49	OWAIZ AHMED	P	A	P	P	P
50	P SABARINATHAN	P	P	P	P	P
51	P.S.THANYATA	P	P	P	P	P
52	PAVITHRA V	A	A	A	P	P
53	PRAKRUTHI	A	A	A	A	A
54	PRATIKSHA SINGH	P	P	A	P	P
55	PRAVEEN	P	A	P	P	A
56	PRIYA T	P	P	A	P	P
57	PRIYANKA M S	P	P	P	P	P
58	PRIYANKA P	P	P	P	P	P
59	PRIYANKA SAMI KOUNDER	P	P	A	P	P
60	PRUTHVIRAJ D	P	P	P	P	P
61	KABIR ULLA	P	P	P	P	P

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Hennur Cross, Kalyan Nagar
Bangalore - 43.

Head
Department of Computer Science
Indian Academy Degree College
Hennur Cross, Hennur Main Road,
Bengaluru-560043

INDIAN ACADEMY
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BRIDGE COURSE POST ASSESSMENT TEST
COMPUTER SCIENCE
DATA STRUCTURES

1) What is the full form of CPU?

a. central processing unit
b. common processor unit
c. central programming unit
d. None of the above

2) Why do we need to study computer programming?

a. to solve problems
b. to pass a set of instructions to the computer
c. to build software
d. all of the above

3) To use "printf" and "scanf" in our program, which header file do we use?

a. std.h
b. stdio.h
c. inputoutput.h
d. io.h

4) Which of the following statements is true?

e. "if" is a loop
f. "else if" is compulsory with "if"
g. "if" is a conditional statement
h. None of the above

5) Which of the following is true related to "for"?

e. "for" is a loop
f. "for" is a conditional statement
g. It is optional to give an exit condition in "for"
h. None of the above

6) Array is:

e. A built-in data type
f. A derived data type
g. Manual data type
h. All of the above

7) Traversing a data structure means:

e. to visit the elements stored in it
f. deleting it
g. creating it
h. None of the above

8) Searching a data structure means:

e. to find a particular element in the data structure
f. to search the location of that data structure
g. to search the structure of a data
h. none of the above

9) If the temperatures of a month are stored in an array and we are asked to arrange the elements of that array from coldest to hottest month, which data structure operation are you going to perform?

e. Searching
f. Sorting
g. Merging
h. Traversing

10) Data structures in C is essential:

e. To write the C programs in a better way
f. To store the data in a better way
g. To interact with the data in a better way
h. All of the above

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Hennur Cross, Bengaluru - 560 043
Department of Computer science
Bridge course-BCA 2023-2027 Post Assesment Marks
Sem 1 Section B Data Structures

Sr No	Student Name	Score
1	Narasimha B	7 / 10
2	Mohammed huzaif	10 / 10
3	Pruthvi Raj D	9 / 10
4	Nafiha	9 / 10
5	Nancy Nikhita.a	10 / 10
6	Owaiz ahmed	4 / 10
7	Nandini	10 / 10
8	M.Mohseena	8 / 10
9	Manu srinivas	10 / 10
10	Mohammed Owais	10 / 10
11	Priyanka M S	9 / 10
12	Mohammad Ali	8 / 10
13	Muthu Lakshmi.m	8 / 10
14	Thanyata. P.S	9 / 10
15	A MD Zaid	10 / 10
16	Mohammed Rehan	9 / 10
17	Priyanka p	9 / 10
18	Monisha sharon	9 / 10
19	N.K Fathima Tabassum	8 / 10
20	Priya T	9 / 10
21	Mohammed rehan	10 / 10
22	p.sabarinathan	9 / 10
23	Md Imtiyaz	10 / 10
24	Mohammed afzal	9 / 10
25	Mohd Affan	9 / 10
26	Mohammed Abdul Wahid	9 / 10
27	Mohammed Adnan	9 / 10
28	Mohammed Hamza	8 / 10
29	Pratiksha singh	9 / 10
30	Nikhil sharma	10 / 10
31	Mohammed mufasil hussain	10 / 10
32	Naveen	10 / 10
33	Mubarak ali	10 / 10
34	Nethravathi S	8 / 10
35	Mohammed Rahim ul zaid	9 / 10
36	Priyanka sami kounder	9 / 10
37	Mohammed Abubakar Siddiqu	9 / 10
38	Momin Basha	10 / 10
39	Pavithra	9 / 10
40	Sinan	10 / 10
41	Nayanathara R	10 / 10
42	Mohammed umar farooq	10 / 10

Head
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Indian Academy Degree College
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lore-560043.

INDIAN ACADEMY
Degree College - Autonomous

Department Of Mathematics

FOUNDATION COURSE FOR DISCRETE STRUCTURES

(I BCA-July-2023)

Resource Person: Ms. Lakshmikanthamma P K ,

Mrs. Lourdhu Jannet Vinoli X & Mrs. Shyba. P

Aim: To encourage and enable students to recognise the basic Mathematical concepts.

Objective: To make students recapitulate the fundamentals of basic Mathematics.

Learning Outcome: By the end of the course students should be capable of solving simple problems related to the topics of the foundation course.

Syllabus:

1. Number System (02 hours)
2. Theory of Equations (02 hours)
3. Basics of set theory (01hour)

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INDIAN ACADEMY
Degree College - Autonomous

Department Of Mathematics

I BCA Foundation Course – Discrete Structures

Pre-Assessment Mark Sheet

Total Marks: 15

Date: 25/07/2023

Sl No	Name of the Student	Class and Section	Marks Scored
1.	B Ramya	BCA A	4/15
2.	Anirudh R	BCA A	6/15
3.	Jasna Rani	BCA A	3/15
4.	Dhanya Shree M	BCA A	4/15
5.	kavitha s	BCA A	9.00 / 15
6.	Abhishek G	BCA A	5.00 / 15
7.	AMIT kumar	BCA A	2.00 / 15
8.	Eshwar	BCA A	6.00 / 15
9.	C Petrick Joseph	BCA A	7.00 / 15
10.	David	BCA A	4.00 / 15
11.	Josephin Mary D	BCA A	1.00 / 15
12.	Darshan kumar AR	BCA A	5.00 / 15
13.	Dafny Fathima	BCA A	3.00 / 15
14.	Abdur Raheem	BCA A	4.00 / 15
15.	Lalithkumar	BCA A	9.00 / 15
16.	Chandanagowda Chandana	BCA A	9.00 / 15
17.	Kushal Singh Dhami	BCA A	9.00 / 15
18.	Humera saima	BCA A	3.00 / 15
19.	Abubaker siddiq khan	BCA A	5.00 / 15
20.	Mohammed Izhaan	BCA A	8.00 / 15
21.	Karan.r	BCA A	3.00 / 15
22.	Kusuma	BCA A	7.00 / 15
23.	Lavan Kishore	BCA A	3.00 / 15
24.	Asfiya	BCA A	2.00 / 15
25.	Muhammed Ayaan Sheriff	BCA A	4.00 / 15
26.	Archana parnoal	BCA A	7.00 / 15
27.	Danies B	BCA A	9.00 / 15
28.	Divya k	BCA A	9.00 / 15
29.	AbinayaShree	BCA A	8.00 / 15
30.	Vijay Kumar BV	BCA A	5.00 / 15
31.	Ansar Alam	BCA A	7.00 / 15

32.	Divya R	BCA A	7.00 / 15
33.	divyaarumugam097@gmail.com	BCA A	4.00 / 15
34.	G.R.Deekshitha	BCA A	7.00 / 15
35.	Bhanushree	BCA A	9.00 / 15
36.	Manasa.j	BCA A	6.00 / 15
37.	Chandan.s	BCA A	5.00 / 15
38.	Chandu R	BCA A	7.00 / 15
39.	Deekshitha k	BCA A	6.00 / 15
40.	Madhu	BCA A	4.00 / 15
41.	Ankitha sushma Raj D.L	BCA A	7.00 / 15
42.	Ashish	BCA A	8.00 / 15
43.	JATHIN.M	BCA A	8.00 / 15
44.	Faizan shariff	BCA A	9.00 / 15
45.	Batta rohith	BCA A	2.00 / 15
46.	Anusha. S	BCA A	7.00 / 15
47.	Kubra Khan	BCA A	8.00 / 15
48.	Abdul shekeeruddin j	BCA A	9.00 / 15
49.	AKMAL SHARIFF	BCA A	10.00 / 15

Name of the Faculty with Signature: Mrs. Lourdhu Jannet Vinoli X

Name of the HOD with Signature:

HEAD
Department of Chemistry
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INDIAN ACADEMY
Degree College - Autonomous

Department Of Mathematics

I BCA Foundation Course – Discrete Structures

Post-Assessment Mark Sheet

Total Marks: 15 Date: 28/07/2023

Sl No	Name of the Student	Class and Section	Marks Scored
1.	Kavitha S	I BCA-A	7 / 15
2.	Eshwar R	I BCA-A	8 / 15
3.	Abdur Raheem	I BCA-A	9 / 15
4.	Josephin Mary D	I BCA-A	6 / 15
5.	G.R.Deekshitha	I BCA-A	11 / 15
6.	Bhanushree	I BCA-A	11 / 15
7.	Dafny Fathima	I BCA-A	7 / 15
8.	Kusuma N	I BCA-A	11 / 15
9.	Lalithkumar	I BCA-A	11 / 15
10.	Lavan kishore	I BCA-A	3 / 15
11.	Nisha Ramanand Chaurasiya	I BCA-A	6 / 15
12.	Kushal Singh Dhami	I BCA-A	8 / 15
13.	Karan	I BCA-A	10 / 15
14.	Abubakar siddiq khan	I BCA-A	14 / 15
15.	Chandana B	I BCA-A	10 / 15
16.	Asfiya	I BCA-A	8 / 15
17.	Madhu	I BCA-A	6 / 15
18.	C Petrick Joseph	I BCA-A	7 / 15
19.	Anirudh	I BCA-A	8 / 15
20.	Darshan kumar AR	I BCA-A	3 / 15
21.	Aashish	I BCA-A	10 / 15
22.	Chandan.s	I BCA-A	7 / 15
23.	Abdul Azeem	I BCA-A	12 / 15
24.	AMIT kumar	I BCA-A	8 / 15
25.	Ansar Alam	I BCA-A	10 / 15
26.	Chandu R	I BCA-A	6 / 15
27.	Jasna	I BCA-A	5 / 15
28.	Divya k	I BCA-A	7 / 15
29.	BV vijay	I BCA-A	10 / 15
30.	Dhaniya shree.M	I BCA-A	9 / 15
31.	Batta rohith	I BCA-A	8 / 15

32.	Durga Deekshith N.M	I BCA-A	8 / 15
33.	Anusha. S	I BCA-A	3 / 15
34.	Divya	I BCA-A	7 / 15
35.	FRANCIS ARUN	I BCA-A	6 / 15
36.	Kubra Khan N S	I BCA-A	14 / 15
37.	Dhanusha	I BCA-A	8 / 15
38.	Jathin.m	I BCA-A	13 / 15
39.	Abdul shekeeruddin j	I BCA-A	12 / 15
40.	K. Abinayashree	I BCA-A	12 / 15
41.	Danies B	I BCA-A	7 / 15
42.	Humera saima	I BCA-A	4 / 15
43.	Manasa.J	I BCA-A	7 / 15
44.	Arun	I BCA-A	13 / 15
45.	David	I BCA-A	7 / 15
46.	Archana parnoal	I BCA-A	11 / 15
47.	Kavitha S	I BCA-A	7 / 15
48.	Eshwar R	I BCA-A	8 / 15
49.	Abdur Raheem	I BCA-A	9 / 15
50.	Josephin Mary D	I BCA-A	6 / 15
51.	G.R.Deekshitha	I BCA-A	11 / 15

Name of the Faculty with Signature: Mrs. Lourdhu Jannet Vinoli X

Name of the HOD with Signature:

Department of Chemistry
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Department of Mathematics		
Foundation Course		
I BCA-B Pre - Assessment Marks		
Sl No	**Name of the student**	**Score**
1	Fgh	7 / 15
2	Mohammed muzammil khan	8 / 15
3	Mohammed Owais	11 / 15
4	Md Imtiyaz	12 / 15
5	M.Mohseena	6 / 15
6	Mustabshira	6 / 15
7	Mohammed rehan	5 / 15
8	Mohammed Ibrahim	4 / 15
9	Md wasil	6 / 15
10	Nafiha	10 / 15
11	Nayanathara R	5 / 15
12	Momin Basha	10 / 15
13	Nandini	6 / 15
14	Mohd Affan	10 / 15
15	Thanyata. P.S	7 / 15
16	Mohammed Tahir	11 / 15
17	N Faisal Ahmed	7 / 15
18	Monisha sharon	9 / 15
19	Nancy nikhita.a	7 / 15
20	Nisha.R	7 / 15
21	Priyanka M S	8 / 15
22	Naveen	6 / 15
23	P.sabarinathan	7 / 15
24	Priya T	7 / 15
25	Muthu Lakshmi.m	6 / 15
26	A MD Zaid	1 / 15
27	N.k Fathima Tabassum	9 / 15
28	Moin Ahmed Khan	8 / 15
29	Nitesh Rao S	8 / 15
30	Maqsood ali pathan	7 / 15
31	Manu srinivas	11 / 15
32	Nethravathi.S	8 / 15
33	Mubarak	4 / 15
34	Pruthvi Raj D	12 / 15
35	Mohammed rahim ul zaid	9 / 15
36	Mohammed mufasil hussain	7 / 15
37	Mohammed Abubakar Siddiqu	5 / 15
38	Mohammed Rehan	10 / 15
39	Pratiksha singh	7 / 15
40	Priyanka p	11 / 15
41	Priyanka sami kounder	8 / 15
42	Mohammed Abdul Wahid	11 / 15

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Subject Teacher : Shyba. P

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INDIAN ACADEMY
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Department of Mathematics

Foundation Course

I BCA- B Post assessment Test

Sl NO	Name of the student	Score
1	Nayanathara R	4 / 15
2	Mohd Affan	14 / 15
3	Owaiz ahmed	2 / 15
4	Momin Basha	14 / 15
5	Nancy Nikhita.a	12 / 15
6	MUSTABSHIRA	10 / 15
7	Mohammed Owais	14 / 15
8	Manu . s	11 / 15
9	Pruthvi Raj D	12 / 15
10	Mohammed wasil	11 / 15
11	Priya T	10 / 15
12	Md Imtiyaz	13 / 15
13	Mohammed Tahir	12 / 15
14	Mohammed rehan	9 / 15
15	Priyanka p	13 / 15
16	Muthu Lakshmi	12 / 15
17	Priyanka M S	9 / 15
18	Monisha sharon	11 / 15
19	Maqsood ali pathan	10 / 15
20	Nafiha	13 / 15
21	Nandini	8 / 15
22	Priyanka sami kounder	10 / 15
23	Nikhil sharma	11 / 15
24	Mohammed Abdul Wahid	13 / 15
25	A MD Zaid	6 / 15
26	M Mohseena	12 / 15
27	P.sabarinathan	11 / 15
28	Narsimha B	8 / 15
29	Mubarak ali	11 / 15
30	Hamza	12 / 15
31	Naveen	11 / 15
32	Pratiksha Singh	6 / 15
33	Mohammed mufasil hussain	6 / 15
34	Mohammed Rahim ul zaidd	6 / 15
35	Mohammad Ali	8 / 15
36	Mohammed Adnan	9 / 15
37	Mohammad afzal	10 / 15
38	Mohammed Abubakar Siddiqu	12 / 15
39	Naziya arfa anjum	12 / 15
40	Mohammed huzaif	11 / 15
41	Mohammed Rehan	8 / 15
42	Sinan	12 / 15
43	Thanyata. P.S	11 / 15
44	N.k Fathima Tabassum	12 / 15
45	Nethravathi S	12 / 15
46	Pavithra v	9 / 15

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Department of Chemistry
I.A.D.C. and Centre For
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Bangalore - 560 043

Subject Teacher : Shyba P

Foundation Course For Discrete Structures.

INDIAN ACADEMY
Degree College - Autonomous

SL NO	Student Name	24/7/2022 11:15	25/7/22 10:15	26/7 11:15	27/7 12:15	28/7 11:15	Student Sign
1	Abdul Shekeeruddin J	P	P	A	P	P	
2	Abdur Raheem	P	P	P	A	P	
3	Abshiek G	P	P	P	A	A	
4	Abubaker Siddiq Khan	P	P	P	A	P	
5	Afzah Anjum	A	A	A	A	A	
6	Akmal Shariff	P	P	A	A	A	
7	AKSHAY JAYAN	A	A	A	A	A	
8	Ameen ulla baig	P	P	P	A	A	
9	Amit Kumar	A	P	A	A	P	
10	Anirudh R	P	P	P	P	P	
11	ANKITHA SUSHMA RAJ D.L	P	P	P	P	A	
12	Ansar Alam	P	P	P	P	P	
13	Anusha S	P	P	A	P	P	
14	Archana Parnoal	P	P	P	A	P	
15	Arun M Rudrakshi	P	P	P	P	P	
16	Asfiya	P	P	P	P	P	
17	Ashish S	P	P	P	P	P	
18	Ayyappa G S	A	A	A	A	A	
19	~~B V~~ Vijay Kumar B.V	P	P	P	P	P	
20	Batta Rohith	P	P	P	P	P	
21	Bhanushree D	P	P	P	P	P	
22	C PETRICK JOSEPH	P	P	P	P	P	
23	Chandan S	P	P	P	P	P	
24	Chandhana B	P	P	P	P	P	
25	Chandu R	A	P	A	P	P	
26	Chaurasia Nisha Ramanand	A	A	P	P	P	
27	Dafny Fathima	P	P	P	P	P	
28	Danies B	P	P	P	P	P	
29	DANISH MALLIK A	P	A	P	P	A	
30	Darshan Kumar A R	P	P	P	P	P	
31	David R	P	P	P	P	P	
32	Deekshitha K	P	P	P	P	P	
33	Dhaniya shree M	A	P	A	P	P	
34	DHANUSHA R	P	P	P	P	P	
35	Divya A	P	P	P	P	P	

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36	Divya K	P	P	P	P	P	Divya.K
37	Divya R		P	P	A	A	Divya.R
38	Durga Deekshith N M	P	A	P	P	P	Deekshith
39	ESHWAR	P	P	P	P	P	
40	Faizan Shariff	P	P	A	A	A	Faizan
41	G R DEEKSHITHA	P	P	P	P	P	
42	Goulanin Moya Herman	A	A	A	A	A	
43	Humera Saima Shaikh	P	P	P	P	P	P
44	Hurain Fathima A S	P	A	P	P	A	
45	Janani R	P	A	P	A	A	
46	JASNA RANI SAHOO B S	P	P	P	P	P	Jasna Rani Sahoo.B.S
47	Josephin Mary D	P	P	P	P	P	Josephin
48	K Abinayashree	P	P	P	P	P	Abinaya.
49	K Mohammed Izhaan	P	P	A	A	A	
50	Karan R	P	P	P	P	P	Karan.R
51	Kavitha S	P	P	P	P	P	Kavitha.S
52	Kubra Khan N S	P	P	P	P	P	
53	Kushal Singh Dhami	A	P	P	A	P	Kushal
54	KUSUMA N	P	P	P	P	P	
55	Lakish Kumar S	A	A	A	P	A	Lakish.S
56	Lalith kumar M	P	P	P	A	P	Lalith
57	Lavan kishore C B	A	P	P	P	P	
58	Madhu J N	P	P	P	P	P	
59	Mahalakshmi	A	A	A	A	A	
60	Manasa J	P	P	P	P	P	Manasa J
61	Francis Arun S	P	P	P	P	P	Francis
62	Jathin M	P	P	P	P	P	Jathin
63	Abdul Azeem					P	Abdul Azeem

Signature of the Subject Teacher & Program Coordinator.

Signature of the HOD

INDIAN ACADEMY DEGREE COLLEGE AUTONOMOUS

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INDIAN ACADEMY
Degree College - Autonomous

Department of Mathematics

I BCA - B Foundation Course Attendance

SL NO	Student Name	24-07-2023	25-07-2023	26-07-2023	27-07-2023	28-07-2023	Signature
1	Manu Srinivas	P	P	P	P	P	Manu S.
2	Maqsood Ali	P	P	A	A	P	Maqsood
3	Mohamed Abdul Wahid	P	P	P	P	P	MAW
4	Mohammed Abubakar Siddique	P	P	P	P	P	
5	Mohammed Adnan	P	P	A	P	P	Adnan
6	Mohammed Affan	P	P	P	P	P	
7	Mohammed Afzal	P	P	P	P	P	Mohammed Afzal
8	Mohamed Ali	P	A	P	P	P	Ali
9	Mohammed Hamza	P	P	A	P	P	Hamza
10	Mohammed Huzaif	P	A	P	P	P	
11	Mohammed Ibrahim	P	P	P	A	A	
12	Mohammed Imtiyaz	P	P	P	P	P	MA Imtiyaz
13	Mohammed Mufasil	P	P	P	P	P	
14	Mohammed Muzammil	P	P	A	P	P	
15	Mohammed owais	P	P	P	P	P	Owais
16	Mohammed Rahim Ul	P	P	P	P	P	Rahim
17	Mohammed Rehan	P	P	P	P	P	
18	Mohammed Rehan	P	P	P	P	P	
19	MohammedTahir	A	P	P	P	P	
20	Mohammed Tausif	P	A	A	A	A	
21	Mohammed Umar Farooq	A	A	A	P	P	
22	Mohamed Wasil	P	P	P	P	P	Md Wasil
23	Mohammed Yaseer	A	A	A	A	A	
24	Mohammed Zaid	P	P	P	P	P	Zaid
25	Mohammed Zaid Khan	A	A	A	A	A	
26	Mohseena	P	P	A	A	P	
27	Moin Ahmed Khan	P	P	A	A	P	
28	Momin Basha	P	P	P	P	P	
29	Monica.M	A	A	A	A	A	
30	Monisha Sharon	P	P	P	A	P	
31	Mubarak Ali	P	P	P	P	P	

32	Muhammed Sinan A	A	A	P	A	P	
33	Mustabshira	P	P	P	A	A	
34	Muthu Lakshmi . M	P	P	P	P	P	
35	N Faisal Ahmed	P	P	P	A	A	
36	N K Fathima Tabassum	P	P	P	P	P	
37	Nafiha	P	P	P	P	P	
38	Nancy Nikita A	P	P	P	P	P	
39	Nandini	P	P	P	P	P	
40	Narasimha B	P	A	P	P	P	
41	Naresh Kumar S	A	A	A	A	A	—
42	Naveen P	P	P	P	P	P	
43	Nayanathara R	P	P	P	A	A	
44	Naziya Arfa Anjum	P	A	P	A	P	
45	Nethravathi.S	P	P	P	P	P	
46	Nikhil Sharma	P	P	P	P	P	
47	Nisha R	P	P	P	P	A	
48	Nitesh Rao S	P	P	P	P	A	
49	Owais Ahmed	P	A	P	P	P	
50	P Sabarinathan	P	P	P	P	P	
51	P.S.Thanyatha	P	P	P	P	P	
52	Pavithra V	A	A	A	P	P	
53	Prakruthi	A	A	A	A	A	—
54	pratiksha singh	P	P	P	P	P	
55	Praveen	P	A	P	A	A	
56	Priya T	P	P	A	P	P	
57	Priyanka M S	P	P	P	P	P	
58	Priyanka p	P	P	P	P	P	
59	Priyanka sami kounder	P	P	A	P	P	
60	Pruthviraj D	P	P	P	P	P	

61. Lavankishore

62. Madhu. J.N

Subject Teacher :- Shyba-P

HEAD
Department of Chemistry
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INDIAN ACADEMY DEGREE COLLEGE
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INDIAN ACADEMY
Degree College - Autonomous

Department of Computer Science

Discrete Mathematics-Foundation Course

Attendance sheet for I Semester BCA-C

Name of the Subject Teacher: Prof. Lakshmikanthamma P K

SL NO	Student Name	24-07-2023	24-07-2023	24-07-2023	24-07-2023	24-07-2023	Signature
1	Rajeev Sharma	1	2	3	4	5	Rajeev
2	Rajesh R	1	2	3	4	5	R
3	Rakshith C	1	2	3	4	5	RAKSHITH
4	Rakshitha G	1	2	3	4	5	Rakshitha.G
5	Ramya R	1	2	3	4	5	Ramya.R
6	Revanth M	1	2	3	4	5	Revanth.M
7	Rishit Reddy R	0	0	0	0	0	
8	Rita B	1	2	3	0	0	Rita.B
9	Rohit S	1	2	0	0	0	Rohit
10	Ronaldo Dominic Doll	1	2	3	4	5	R
11	ROSHAN BAM	1	2	3	4	5	Roshan
12	Roshni Kumari	1	2	3	4	5	Roshni
13	Rudresh M	1	2	3	0	4	R
14	Rumaisa Khan	1	2	3	0	4	rd
15	S Ruqaiya Farheen	1	2	3	4	5	Ruqaiya.
16	S Sherwin Suresh	1	2	3	0	4	Sherwin
17	S. KAVITHA	1	0	2	3	4	S.Kavitha.
18	Sagar R	1	2	3	4	5	Sagar.R
19	Sameer Ulla	1	0	2	3	0	
20	Sanjana R	1	2	3	4	5	Sanjana
21	Santhosh Kumar L	0	0	0	0	0	
22	Sarah Anaga T	1	2	3	4	5	Sarah Anaga
23	Sarath kumar	1	2	3	4	5	Sarath.N
24	Satya S	1	2	3	4	0	Sathya.
25	Shagun B	1	2	3	4	5	Shagun

26	SheikhFarhan	1	2	0	0	0	S. Farhan
27	Sinchana S N	1	2	3	4	5	Not Coming
28	Smitha Sharon	1	2	3	4	5	Smitha
29	SOUNDARYA K	1	2	3	4	5	Soundarya.K
30	Sri Vidhya S	1	2	3	4	5	SRIVIDYA.S
31	Sumalatha v	1	2	3	4	5	Sumalatha V
32	SumanJana	1	2	3	4	5	SumanJana
33	SURESH V	1	2	0	0	0	
34	Suryanarayana	1	2	3	4	5	Suryanarayana
35	Susan Catharine J	1	2	3	0	4	Susan Catharine J
36	Syed Raqib jamal	1	2	3	4	5	Syed
37	SYED SHOAIB MEHDI	1	0	0	0	0	Not Coming
38	Syed Taha Usman	1	0	2	3	0	
39	Syed Taqeeb	1	2	3	4	5	Syed Taqeeb
40	Tapan Sahu	1	2	3	4	5	
41	Tejas Kumar D	1	2	3	4	0	Tejaskumar
42	TEJASHWINI S	1	2	3	4	5	Tejas
43	Thanvanth V	1	2	3	4	5	Thanvanth.V
44	Umme Aiman	1	2	3	4	5	Umme Aiman
45	Usha K	1	2	3	0	4	Usha K
46	V Dhanush	1	2	3	4	5	V.Dhanush
47	Vandana M	1	2	3	4	5	Vandana
48	Veena Kumari	1	2	3	4	5	
49	Vignesh.S	1	2	3	4	5	
50	Vinay Bahadur G	1	2	3	0	4	vinay
51	Vinay G	1	2	3	4	5	
52	Vishal Singh	1	2	3	0	0	
53	Vishalini S	1	2	3	4	5	Vishalini.S
54	Wagadari Dipali Sidram	1	2	3	4	5	D.S.Wagadari
55	Yashashwini	1	2	3	4	5	Yashaswini G.
56	Yashodha.D	1	2	3	4	0	Yashodha.D
57	Yashwanth B S	0	0	1	2	0	Yashwanth

58	Yuvaraj R	1	2	3	4	5	Yuvaraj R
59	Z Mohammed Tahrim	1	2	0	3	0	
60	Zaima Shaik	1	2	3	4	5	
61	Zooni Ali Fouzia	1	2	3	4	5	

Signature of the Subject Teacher: Lavkeerty P.K.

Signature of the Program Coordinator:

Signature of the HoD:

62. Sumanth G M 1 2 sumanth.G.M

63. Md. Maaz 1 2 Not coming

HEAD
Department of Chemistry
I.A.D.C. and Centre For
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INDIAN ACADEMY DEGREE COLLEGE
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INDIAN ACADEMY
Degree College - Autonomous

Department Of Mathematics

I B.Sc. – Data Science

Foundation Course

Attendance Sheet

Sl No	Name of the Student	24-7-23	25-7-23	26-7-23	27-7-23	28-7-23	Signature
1.	Abid Ahmed Shariff	P	P	P	P	P	
2.	Sumit Kumar	P	P	P	P	P	Sumit Kumar
3.	Mohammed Haris	P	P	P	P	P	Haris
4.	Rachitha Reddy GV	P	P	P	P	P	
5.	Maged	A	A	A	A	A	
6.	Muhammed Ayaan Sheriff	P	P	P	P	P	Ayaan Sheriff
7.	Abhisha B	A	A	A	A	A	
8.	Krushna Santosh	P	P	P	P	P	
9.	Bhuvanesh	P	P	P	P	P	
10	Vandana K	P	P	P	P	P	
11	Lekhana Jagadeesh	P	P	P	P	P	
12	Ayush Singh	P	P	P	P	P	Ayush
13	Jamula.M	P	P	P	P	P	M. Jamula
14	Hepzibah Vincy	P	P	P	P	P	
15	Mubasheer Ahmed.F	P	P	P	P	P	Mubasheer
16	Likitha Shree M	P	P	P	P	P	Likithashree M.
17	Bomu Ramya	P	P	P	P	P	B. Ramya
18	Grisham G	P	P	P	P	P	Grisham G
19	Bharath.B	P	P	P	P	P	
20	Edreena Thaniya M	P	P	P	P	P	Edreena
21	Sanjana Yadav	P	P	P	P	P	Sanjana yadav

22 Alwyn Anush. A.R.

Name and Signature of the Subject Teacher:

Name and Signature of the Program Coordinator:

Name and Signature of the HOD:

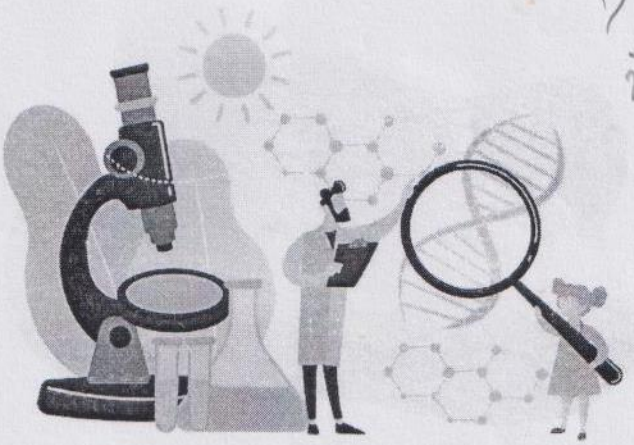
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BENGALURU - 83

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Department of Chemistry
I.A.D.C. and Centre For
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Bangalore—560 043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences



BRIDGE Course

I Semester BSc (NEP)

Combinations – GBT and BCMB

Batch: 2023-2027

(Academic year 2023-24)

Department of Life Sciences
IADCA

ABOUT THE COURSE

A bridge course for newly admitted students is conducted every year before the commencement of the first semester classes. This course was offered to I Semester BSc students from 31 July 2023 to 5 August 2023. The main objective of the course is to bridge the gap between subjects studied at Pre-university level and subjects they would be studying in Graduation. The syllabus for the course is framed in such a way that they get basic knowledge on the subjects which they would be learning through graduation. This course provides a better transition phase to prepare themselves before the onset of course for first semester.

OBJECTIVES OF THE COURSE

- To improve and broaden the knowledge of students in life sciences.
- To give the students confidence to successfully transition to college and new curriculum.
- To bridge the gap between subjects studied at pre-university level and subjects they would be studying in B.Sc. course.

OUTCOMES OF THE COURSE

At the end of the course, students would be able to

- to develop confidence and skills to successfully transition to college
- to become familiarized with college and its resources for a life in a structured & supportive learning community
- to enhance critical thinking skills through self exploration & class experiences

METHODOLOGY

During the first week after the commencement of the classes, the bridge course curriculum is delivered to the students in various disciplines. A curriculum is framed separately in each of the subjects of biotechnology, microbiology, genetics and biochemistry, for the Bridge Course. A pre assessment test is conducted before the course. A post bridge course test is also conducted after the completion of the course to assess the students.

Dates: 31 July to 5 August 2023

Duration: 6 days

Faculty in charge: Dr. Divya, Dr. Suma T.K., Dr. Anu Kiruthika and Prof. Cynthia Irene

Class: BSc Gbt and BCMB students



INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFE SCIENCES
BRIDGE COURSE
for 1st SEMESTER B.Sc. BCMB
A.Y 2023-24

Days	Date	10.15-11.15	11.15-11.30	11.30-1.00
Monday	31.7.2024	Fundamentals of biochemistry (Dr. Suma T.K.)	BREAK	BIOCHEMISTRY LAB SESSION
Tuesday	1.8.2024	Fundamentals of biochemistry (Dr. Suma T.K.)		BIOCHEMISTRY LAB SESSION
Wednesday	2.8.2024	Fundamentals of microbiology (Dr. Anu Kiruthika)		MICROBIOLOGY LAB SESSION
Thursday	3.8.2024	Fundamentals of microbiology (Dr. Anu Kiruthika)		MICROBIOLOGY LAB SESSION
Friday	4.8.2024	Fundamentals of Biochemistry (Dr. Suma T.K.)		BIOCHEMISTRY LAB SESSION
Saturday	5.8.2024	Fundamentals of microbiology (Dr. Anu Kiruthika)		MICROBIOLOGY LAB SESSION

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Department of Life Sciences IADCA

Principal

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Bangalore - 43.

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFE SCIENCES
BRIDGE COURSE
for 1st SEMESTER B.Sc. GBT
A.Y 2023-24

Days	Date	10.15-11.15	11.15-11.30	11.30-1.00
Monday	31.7.2024	Fundamentals of Biotechnology (Dr. Divya)	BREAK`	BIOTECHNOLOGY LAB SESSION
Tuesday	1.8.2024	Fundamentals of genetics (Prof. Cynthia Irene)		GENETICS LAB SESSION
Wednesday	2.8.2024	Fundamentals of Biotechnology (Dr. Divya)		BIOTECHNOLOGY LAB SESSION
Thursday	3.8.2024	Fundamentals of genetics (Prof. Cynthia Irene)		GENETICS LAB SESSION
Friday	4.8.2024	Fundamentals of Biotechnology (Dr. Divya)		BIOTECHNOLOGY LAB SESSION
Saturday	5.8.2024	Fundamentals of genetics (Prof. Cynthia Irene)		GENETICS LAB SESSION

Head of Department
Department of Life Sciences
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Bangalore - 560043

Department of Life Sciences IADCA

Principal

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Bangalore - 43.

[NEP 2023 Batch] BRIDGE COURSE for I sem B.Sc. (BcMb)

REGISTER OF ATTENDANCE & FEES FOR THE MONTH OF July - August 2023

Name of the Institute: IADCA

Section: I st sem BSc BcMb Place: Bangalore

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs. P.	Date of payment
			1			2				3				4		5				6																	
			31.7.23		1.8.23			2.8.23			3.8.23					4.8.23			5.8.23																	
	23IADSc																																			
1.	001	Arpan Pathra	1		2			3			4					5			6																	
2.	002	Deekshaswini. N.	1		2			3			4					5			6																	
3.	003	Joyce Christy. S.	1		2			3			4					5			6																	
4.	004	Malathi. R.	1		2			3			4					5			6																	
5.	005	Sai Keerthana	1		2			3			4					5			6																	
6.	006	Pavithra. K.	1		2			3			4					5			6																	

Fundamentals of Biochemistry Dr. Suma.T.K. | Fundamentals of Biochemistry Dr. Suma.T.K. | Fundamentals of Microbiology Dr. Anu Kirthika | Fundamentals of microbiology Dr. Anu Kirthika

Fundamentals of Biochemistry Dr. Suma.T.K. | Fundamentals of Microbiology Dr. Anu Kirthika

Number present M / Daily E

Initial M / E — TKS | TKS | | | TKS | |

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Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Average Attendance during the month: | No. on Roll during month:

(NEP 2023 Batch) BRIDGE COURSE for Ist sem B.Sc. (GBt)

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF July - August 2023

Name of the Institute IADCA

Section 1st sem BSc GBt Place Bangalore

Sl. No.	Admission No.	NAMES	31.7.23	1.8.23	2.8.23	3.8.23	4.8.23	5.8.23	No. of days present	FEES Rs. P	Date of payment
			1	2	3	4	5	6			
	23IABSc										
1.	007	A. Gagan	1	2	3	4	5	6			
2.	008	Abdul Rayan. J.	1	2	3	4	5	6			
3.	009	Aishwarya. K.	1	2	3	4	5	5			
4.	010	Aliya Shariff	1	2	3	4	5	6			
5.	011	Hafsa Kowser	1	2	3	4	5	6			
6.	012	Jayapradeepa. S.	1	2	3	4	5	6			
7.	013	Kushal Kumar. S.	1	2	3	4	5	6			
8.	014	Ligodi. N. Divine	1	2	3	4	5	6			
9.	015	M. Rahul Krishna	1	2	3	4	5	6			
10.	016	Mohammed Zaki. W.	1	2	3	4	5	6			
11.	017	Poorvi Shetty. A.V.	1	2	3	4	5	6			
12.	018	Prabash Ranjan. P.	1	2	3	4	5	6			
13.	019	Sana Hayath. S.H.	1	2	3	4	5	6			
14.	020	Shziya Afreen	1	2	3	4	5	6			
15.	021	Sudheer. H.	1	2	3	4	5	6			
16.	022	Umme Asma. G.	1	2	3	3	4	5			
17.	023	Venkatarayu. V.	1	2	3	3	4	5			
			Fundamentals of Biotechnology Dr. Divya	Fundamentals of Genetics Dr. Vanitha	Fundamentals of Biotechnology Dr. Divya	Fundamentals of Genetics Prof. Cynthia	Fundamentals of Biotechnology Dr. Divya	Fundamentals of Genetics Prof. Cynthia			

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Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Number present M / Daily E

Total M / E

No. on roll at the beginning of month

No. Of Working days

Average Attendance during the month

No. on roll closing month

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

BRIDGE Course

for I Semester BSc (GEBT)

Batch: 2023-2027

(Academic year 2023-24)

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Department of Life Sciences IADCA

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc

(Academic year 2023-24)

Student list

(GEBT combination)

Sl. No.	Name of student
1	A GAGAN
2	ABDUL RAYAN J
3	AISHWARYA K
4	ALIYA SHARIFF
5	HAFSA KOWSER
6	JAYAPRADEEPA S
7	KUSHAL KUMAR S
8	LIGODI NKABAKULE DIVINE
9	M RAHUL KRISHNA
10	MOHAMMED ZAKI WAJAHATH
11	Poorvi shetty Av
12	PRABASH RANJAN PRADHAN
13	SANA HAYATH S H
14	SHAZIYA AFREEN
15	UMME ASMA G
16	VENKATRAJU V

Faculty signature

Program Coordinator

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangaloie - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc (GEBT)

(Academic year 2023-24)

Pre-assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 marks. **(10x2=20M)**

1. All viruses consists of
   a) RNA and protein coat
   b) DNA and protein coat
   c) a nucleic acid and a protein coat
   d) Polysaccharides and proteins

2: A small circle of DNA found outside the main chromosome in bacteria is called a
   a) genetic fingerprint
   b) episome
   c) plasmid
   d) protein

3. Which of the following are prokaryotic cells?
   a) yeast
   b) bacteria
   c) plants
   d) animals

4. Biological catalysts which increase rates of reactions are called
   a) Proteins
   b) Vitamins
   c) Enzymes
   d) Hormones

5. The biological function of chloroplasts in plant cells is
   a) Digestion
   b) Nitrogen fixation
   c) Photosynthesis
   d) ATP generation

6. Using living organisms for developing products is known ——— process
   a) bioengineering
   b) biotechnology
   c) genome engineering
   d) medical engineering

7. Which of the following scientist was discovered Mold Penicillium?
    a) Alexander Fleming
    b) Louis Pasteur
    c) Charles Darwin
    d) Chaim Weizmann

8. The enzymes that specifically cut DNA at particular sites are called
    a) restriction enzmyes
    b) DNA polymerase
    c) viral enzyme
    d) DNA ligase

9. Retroviruses have _____ as genetic material
    a) DNA
    b) RNA
    c) Protein
    d) Both DNA and RNA

10. A technique used to make numerous copies of a specific segment of DNA quickly is the
    a) DNA replication
    b) Polymerase Chain Reaction
    c) Translation
    d) Ligation

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc (Academic year 2023-24)

Pre-assessment test marks

Sl. No	Name of student	Pre-assessment marks
1	A GAGAN	18
2	ABDUL RAYAN J	12
3	AISHWARYA K	12
4	ALIYA SHARIFF	14
5	HAFSA KOWSER	14
6	JAYAPRADEEPA S	12
7	KUSHAL KUMAR S	10
8	LIGODI NKABAKULE DIVINE	10
9	M RAHUL KRISHNA	20
10	MOHAMMED ZAKI WAJAHATH	14
11	Poorvi shetty Av	16
12	PRABASH RANJAN PRADHAN	14
13	SANA HAYATH S H	12
14	SHAZIYA AFREEN	12
15	UMME ASMA G	18
16	VENKATRAJU V	10

Faculty signature

Program Coordinator

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
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Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc (GEBT)

(Academic year 2023-24)

M. Rahul Krishna

20/20 // 24

Pre-assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 marks. **(10x2=20M)**

1. All viruses consists of
   a) RNA and protein coat
   b) DNA and protein coat
   c) a nucleic acid and a protein coat ✓
   d) Polysaccharides and proteins

2: A small circle of DNA found outside the main chromosome in bacteria is called a
   a) genetic fingerprint
   b) episome
   c) plasmid ✓
   d) protein

3. Which of the following are prokaryotic cells?
   a) yeast
   b) bacteria ✓
   c) plants
   d) animals

4. Biological catalysts which increase rates of reactions are called
   a) Proteins
   b) Vitamins
   c) Enzymes ✓
   d) Hormones

5. The biological function of chloroplasts in plant cells is
   a) Digestion
   b) Nitrogen fixation
   c) Photosynthesis ✓
   d) ATP generation

6. Using living organisms for developing products is known ——— process
   a) bioengineering
   b) biotechnology ✓
   c) genome engineering
   d) medical engineering

7. Which of the following scientist was discovered Mold Penicillium?
   a) Alexander Fleming
   b) Louis Pasteur
   c) Charles Darwin
   d) Chaim Weizmann

8. The enzymes that specifically cut DNA at particular sites are called
   a) restriction enzmyes
   b) DNA polymerase
   c) viral enzyme
   d) DNA ligase

9. Retroviruses have _____ as genetic material
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   b) RNA
   c) Protein
   d) Both DNA and RNA

10. A technique used to make numerous copies of a specific segment of DNA quickly is the
   a) DNA replication
   b) Polymerase Chain Reaction
   c) Translation
   d) Ligation

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc (GEBT)

(Academic year 2023-24)

Post-assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 mark. **(10x2=20M)**

1. Technology that uses living components for the welfare of human kind is called
   a) Biology
   b) Botany
   c) Bioinofrmatics
   d) Biotechnology

2. Which of the following organelles is considered the protein factories of the cell?
   a) Nucleus
   b) Endoplasmic reticulum
   c) Ribosomes
   d) Mitochondria

3. Restriction enzymes are also known as
   a) molecular glue
   b) molecular scissors
   c) polymerase
   d) ligase

4. Which of the following blood cells play a role in immunity?
   a) RBCs
   b) Platelets
   c) Brain cells
   d) WBCs

5. The main molecule that stores and carries genetic information between generations is
   a) Protein
   b) DNA
   c) RNA
   d) ATP

5. DNA has a unique structure called the
   a) helix
   b) double helix

c) triple helix
d) none of the above

6. Who coined the term biotechnology for the first time?
   a) Louis Pasteur
   b) Alexander Fleming
   c) Gregor Mendel
   d) Károly (Karl) Ereky

7. Which of the following is the product of biotechnology
   a) Skin
   b) Bacteria
   c) Plants
   d) Vaccine

8. Name the technique which is used to overcome the limitation of traditional hybridization procedures.
   a) Genetic Engineering
   b) Cell biology
   c) Immunology
   d) Modern hybridization

9. Name the genetically modified crop.
   a) Golden rice
   b) Bt-cotton
   c) Bt-brinjal
   d) All of the above

10. Excision and insertion of a gene is known as
   a) Genetic engineering
   b) Biotechnology
   c) Gene therapy
   d) Cytogenetics

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc (Academic year 2023-24)

Post-assessment test marks and attendance

Sl. No	Name of student	Post-assessment marks	Attendance %
1	A GAGAN	18	100
2	ABDUL RAYAN J	16	100
3	AISHWARYA K	16	100
4	ALIYA SHARIFF	16	100
5	HAFSA KOWSER	16	100
6	JAYAPRADEEPA S	14	100
7	KUSHAL KUMAR S	12	100
8	LIGODI NKABAKULE DIVINE	12	100
9	M RAHUL KRISHNA	20	100
10	MOHAMMED ZAKI WAJAHATH	14	100
11	Poorvi shetty Av	16	100
12	PRABASH RANJAN PRADHAN	16	100
13	SANA HAYATH S H	16	100
14	SHAZIYA AFREEN	16	100
15	UMME ASMA G	18	100
16	VENKATRAJU V	12	100

Faculty signature

Program Coordinator

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

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Degree College - Autonomous

16/20

Department of Life Sciences - Biotechnology

Bridge Course for I Semester BSc (GEBT)

(Academic year 2023-24)

Abdul Rayan J

Post-assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 mark. **(10x2=20M)**

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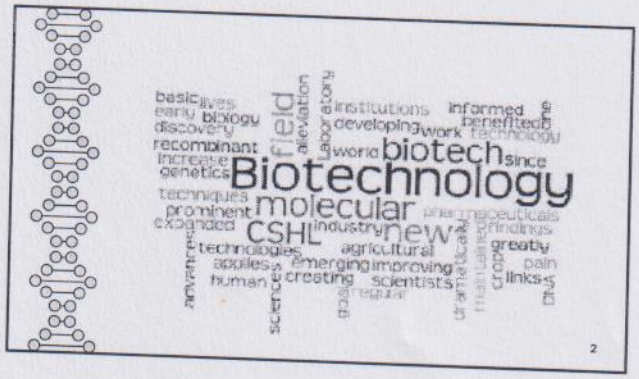
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DEPARTMENT OF LIFE SCIENCES

A Hearty welcome to
1st year B.Sc students
2023 Batch

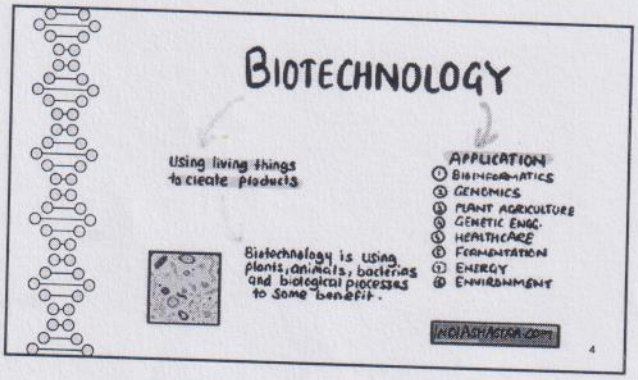
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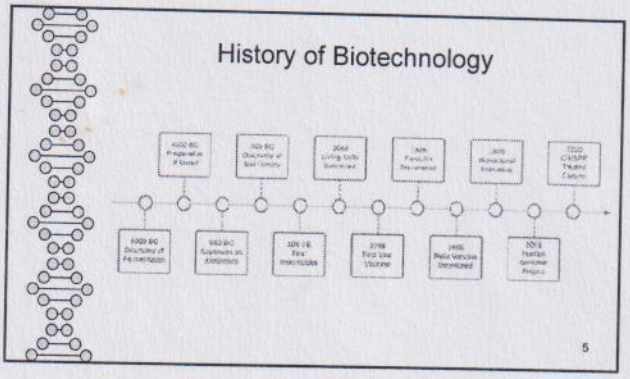
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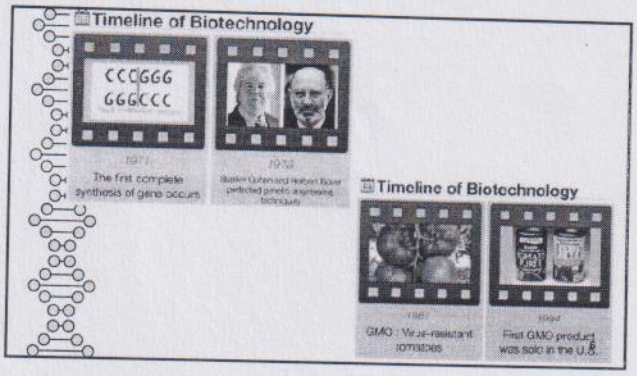
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4



5



Department of Life Sciences
IADCA

Timeline of Biotechnology



1980
First transgenic animals are produced



1983
Polymerase Chain Reaction (PCR) technique by Kary Mullis



1997
The first cloned animal from an adult cell : Dolly



1998
Human Embryonic Stem Cell Lines are established

7

Timeline of Biotechnology

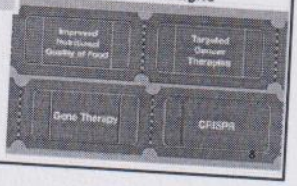


1990
The Human Genome Project is launched



2012
Draft version of THGP is published

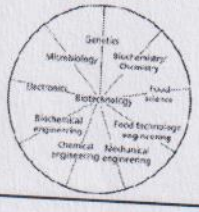
Recent Breakthroughs



8

The interdisciplinary nature of biotechnology

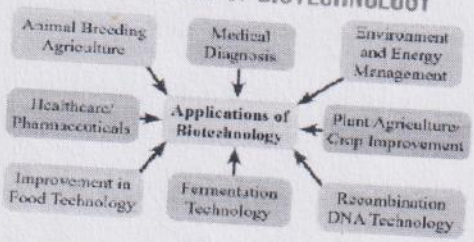
Organisation/coordination



- It involves the marshalling of concepts and methodologies from a number of separate disciplines and applying them to a specific problem in another area.
- Unlike a single scientific discipline, biotechnology can draw upon a wide array of relevant fields, such as microbiology, biochemistry, molecular biology, cell biology, immunology, protein engineering, enzymology, classified breeding techniques, and the full range of bioprocess technologies.

9

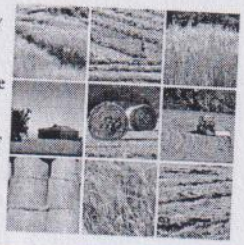
APPLICATIONS OF BIOTECHNOLOGY



10

Agricultural Biotechnology

- Agricultural biotechnology includes a range of tools that scientists employ to understand and manipulate the genetic make-up of organisms for use in the production or processing of agricultural products.



11

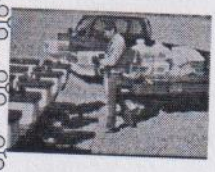
What are the new products of agricultural biotechnology?



- Herbicide tolerant crops, e.g., Roundup Ready soybeans and corn and Liberty Link corn
- Virus resistant Plants

12

What are the new products of agricultural biotechnology?



- Insect resistant crops commercially available, e.g., Bt corn, cotton, and potatoes
- Corn rootworm resistance in 2001?

13

Applications of Industrial Biotechnology

Industrial use of biological systems (whole cells or enzymes)

- Waste recycling
- Chiral synthesis
- Textile treatment
- Food enzymes
- etc., etc.



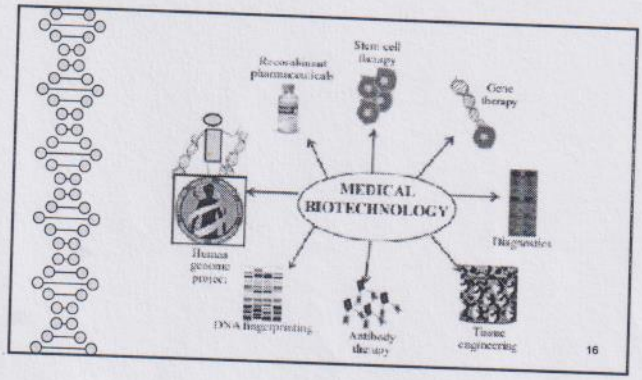
14

Why environmental biotechnology?

- It is needed to:
  - eliminate the hazardous wastes produced by our other technologies.
  - distinguish between similar species and ensure species are not at risk of extinction.
  - create alternative energy sources (i.e. Biofuel).



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- *biotechnology is a mix of disciplines*
  - *Genetics*
  - *Molecular Biology*
  - *Biochemistry*
  - *Embryology*
  - *Cell biology*
  - *Linked with chemical engineering,*
  - *Information technology*
  - *Robotics*

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Modern biotechnology - Integration of new with approaches of traditional Biotechnology such as

- *Plant breeding*
- *Animal breeding*
- *Food production*
- *Fermentation products and processes*
- *Production of pharmaceuticals and fertilizers*

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Key components of Modern Biotechnology

* (i) Genomics



* Genomics is the study of all the genetic material in an animal, plant or microbe. (famous- Human Genome Project)
* It helps in investigating genetic composition of the animal, plant or microbe to generate innovative products and techniques
  - Eg: Stress-tolerant crop varieties
  - Genetic sequence of rice to boost its Vitamin A
  - Pharmacogenomics



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Key components of Modern Biotechnology

* Bioinformatics

* The assembly of data from genomic analysis into accessible forms, involving the application of information technology to analyze and manage large data sets resulting from gene sequencing or related techniques.
* It is a new science that combines the concepts of life sciences to solve biological problems Eg: Maize and Citrus Species



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Key components of Modern Biotechnology

* Bioinformatics

* The IRRI (Philippines)- Worked on the complete genome of Rice.
* Brazilian scientists have already completed the gene sequence of X.fastidiosa, a plant pathogen that infects Citrus plants.
* Teams from many worked on sequencing all 840 million base pairs of DNA on Potato's 12 chromosomes.







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Key components of Modern Biotechnology

* (iii) Transformation:

* Plant transformation is a way to insert gene of interest (part of DNA) from one organism to another organism
* Eg: *Stilbene synthase* from Grape into Tomato (to enable the production resveratrol)

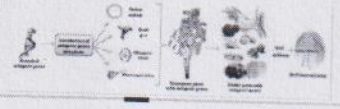


22

* Key components of Modern Biotechnology

Vaccine technology

* The use of modern immunology to develop recombinant deoxyribonucleic acid (rDNA) vaccines for improved control of livestock and fish diseases.
* Eg: Plant based vaccines (administered orally or to other mucosal surfaces)



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Some terms

- 1-Term Biotech - given by—Hungarian Engineer —Karl Ereky
- 2-Father of Biotech(r-DNA tech)/Genetic engineering—Paul Berg (1972)
- 3-First Construction of r-DNA (Recombinant DNA) —Stanley Cohen & Herbert Boyer (1972).This is done by adding antibiotic resistance gene with plasmid of Salmonella typhimurium Bacteria.
- 4-Gel Electrophoresis–developed by— A.Tiselius (1937)
- 5-Restriction Endonuclease–first observed by— W.Arber (1962)
- 6-First Restriction Endonuclease (Hind II)–isolated by— H.Smith
- 7-Reverse Transcriptase first discovered by— Temin & Baltimore
- 8- Polymerase chain reaction (PCR)–developed by—Kary Mullis (1985)
- 9-Hybridoma technology of MAB production—developed by Georges Kohler & Cesar Milstein (1970)
- 10-RNAi –discovered by American scientists Andrew Fire and Craig Mello (1998) in Caenorhabditis elegans

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- 1-Cloning Vector - Gene taxi/Vehicle of DNA/Carrier of DNA
- 2-PBR-322 - Most widely used constructed plasmid/Work house for gene cloning
- 3- Restriction Endonuclease - Molecular or Biological Scissors/Chemical Scalpels/Chemical Knives
- 4-Ligases - Molecular Glue/Sealing or joining Enzymes for DNA segments
- 5-Natural Genetic Engineer - Agrobacterium tumifaciens
- 6-Mobile genetic element - Transposons
- 7-Ri-plasmid - Root inducing plasmid found in Agrobacterium rhizogenes bacteria
- 8- Ti-plasmid - Tumor inducing plasmid found in Agrobacterium tumifaciens bacteria
- 9-Bt - Bacillus thuringiensis

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- 10-Cry - Crystal
- 11-T-DNA - transfer DNA
- 12-EFB - European federation of biotechnology
- 13-dNTPs - deoxynucleoside triphosphate (such as dATP,dGTP,dTTP,dCTP)
- 11-Si-RNA - small interference RNA
- 13-mi-RNA - micro RNA
- 14-pi-RNA - piwi RNA
- 15-RNAi - RNA interference/gene silencing/antisense RNA tech/ post-transcriptional gene silencing
- 16-GEAC - Genetic engineering approval committee
- 17-Alien DNA - Foreign DNA/Passenger DNA/Gene of Interest/DNA to be cloned
- 18-Agar - obtained from Sea weeds/Red Algae – Gracilaria & Gelidium

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- 19-ADA - deaminase/Adenosine aminohydrolase Enzyme
- 20-ampr & tetr - ampicillin & tetracycline resistance gene
- 21-GMOs - Genetically Modified Organisms (Plants/animals/Fungi/Microbes) such as Bt-cotton, Golden Rice etc
- 22-ELISA - enzyme linked immune sorbents assay
- 23-PCR - Polymerase chain reaction/ People choice reaction
- 24-MAB - monoclonal antibody
- 25-PEG - polyethylene glycol (fusion promoting substance)
- 26-HAT - hypoxanthine-aminipterine-thymidine
- 27-IGF - insulin like growth factor

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Equipment

1.Autoclave

A heated and pressurised container used to sterilize equipment and kill any living organisms left.



2.Water bath

Heats items up to a specific temperature and keeps it at that temperature.



3.Hot plate

An electrical device used to heat things up.



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4.Microscope

An instrument used to see things not visible to the naked eye.



5.Incubator

An apparatus used to control the environment to culture and grow bacteria and hatching eggs artificially or to provide a stable environment for a reaction.



6.Micropipette

Used to measure Exact amounts of Small liquids



9.Centrifuge

An apparatus consisting essentially of a compartment spun at high speeds to help separate liquids from solids



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20.Laminar air flow chamber

Used to prevent contamination of semiconductors wafers biological samples or any particle sensitive device.



22.Micro centrifuge Tubes

Used to hold small measures of liquids to be used in a centrifuge



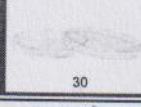
23.Electrophoresis Chamber

A chamber used in gel electrophoresis that conducts an electrical current.



10.Petri Dish

Holds specimens for observation and growth culture



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HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
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INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

BRIDGE Course

for I Semester BSc (BCMB)

Batch: 2023-2027

(Academic year 2023-24)

Department of Life Sciences IADCA

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Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

Student list (BCMB combination)

Sl. No.	Name of student
1	Arpan Patra
2	Deekshaswini N
3	Joyce Christy S
4	Malathi R
5	Nichenametla Sai Keerthana
6	Pavithra K

Faculty signature

Program Coordinator

Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology
Bridge Course for I Semester BSc (Academic year 2023-24)

Name of student :
Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20 marks**
Answer all the questions. Each question carries 2 mark. **(10x2=20M)**

1. What is the study of microorganisms called?
   A) Ecology
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   C) Biology
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2. Which of the following is a prokaryotic microorganism?
   A) Fungi
   B) Virus
   C) Bacteria
   D) Algae

3. What structure protects bacterial cells from environmental stress?
   A) Cell membrane
   B) Cell wall
   C) Nucleus
   D) Cytoplasm

4. What is the primary stain used in the Gram staining procedure?
   A) Crystal violet
   B) Safranin
   C) Methylene blue
   D) Iodine

5. Which of the following is a method of bacterial reproduction?
   A) Binary fission
   B) Budding
   C) Fragmentation
   D) All of the above

6. What is the function of plasmids in bacteria?
   A) Energy production
   B) Protein synthesis
   C) Genetic exchange
   D) Cell division

7. Which of the following microorganisms is commonly used in fermentation?
   A) *Escherichia coli*
   B) *Saccharomyces cerevisiae*
   C) *Staphylococcus aureus*
   D) *Clostridium botulinum*

8. What is the role of ribosomes in a cell?
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9. Which type of microorganism is most commonly associated with food spoilage?
   A) Viruses
   B) Bacteria
   C) Fungi
   D) Protozoa

10. What is a pathogen?
   A) A harmless microorganism
   B) A disease causing microorganism
   C) A beneficial microorganism
   D) A type of virus

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

Pre-assessment test marks

Sl. No	Name of student	Pre-assessment marks
1	Arpan Patra	11
2	Deekshaswini N	16
3	Joyce Christy S	17
4	Malathi R	10
5	Nichenametla Sai Keerthana	16
6	Pavithra K	19

Faculty signature

Program Coordinator

Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences Microbiology

Bridge Course for I Semester BSc

(Academic year 202324)

Name of student :

Date :

Post assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 mark. **(10x2=20M)**

1. How do antibiotics work?
   A) Kill viruses
   B) Kill bacteria
   C) Boost immune response
   D) Prevent DNA replication

2. Which of the following is NOT a type of virus?
   A) Bacteriophage
   B) Retrovirus
   C) Yeast
   D) Influenza virus

3. What is pasteurization?
   A) A method of sterilization
   B) A heat treatment to kill pathogens
   C) A method to enhance flavor
   D) A fermentation process

4. What is an opportunistic pathogen?
   A) A pathogen that causes disease in healthy individuals
   B) A harmless microorganism
   C) A pathogen that causes disease only in immunocompromised individuals
   D) A beneficial microorganism

5. Which of the following is a characteristic of fungi?
   A) They are prokaryotic
   B) They reproduce by photosynthesis
   C) They have cell walls made of chitin

D) They are multicellular only

6. What is a biofilm?
   A) A single type of bacteria
   B) A community of microorganisms adhering to surfaces
   C) A type of virus
   D) A method of sterilization

7. Which microorganism is commonly used in the production of yogurt?
   A) Lactobacillus
   B) Streptococcus
   C) Bacillus
   D) Saccharomyces

8. What does the term "aseptic technique" refer to?
   A) A method to sterilize equipment
   B) A technique to prevent contamination
   C) A type of fermentation
   D) A method to enhance growth

9. What role do decomposers play in an ecosystem?
   A) They produce oxygen
   B) They recycle nutrients
   C) They cause disease
   D) They enhance photosynthesis

10. Which of the following is a common method for isolating bacteria?
    A) Serial dilution
    B) Centrifugation
    C) Freezing
    D) Filtration

INDIAN ACADEMY
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Department of Life Sciences Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)
Assessment test marks and attendance

Sl. No	Name of student	Preassessment marks	Post assessment marks	Attendance %
1	Arpan Patra	11	13	100
2	Deekshaswini N	16	18	100
3	Joyce Christy S	17	19	100
4	Malathi R	10	13	100
5	Nichenametla Sai Keerthana	16	18	100
6	Pavithra K	19	20	100

Faculty signature

Program Coordinator

Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
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Department of Life Sciences
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INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

Post-assessment test marks and attendance

Sl. No	Name of student	Post-assessment marks	Attendance %
1	Arpan Patra	13	100
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4	Malathi R	13	100
5	Nichenametla Sai Keerthana	18	100
6	Pavithra K	20	100

Faculty signature

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Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
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19/20

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

Name of student : Pavithra.k

Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20**

marks

Answer all the questions. Each question carries 2 mark.

(10x2=20M)

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D) A type of virus

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

16/20

Name of student : Deekshaswini N

Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20**

marks

Answer all the questions. Each question carries 2 mark.

(10x2=20M)

1. What is the study of microorganisms called?
   A) Ecology
   ~~B)~~ Microbiology
   C) Biology
   D) Botany

2

2. Which of the following is a prokaryotic microorganism?
   A) Fungi
   B) Virus
   ~~C)~~ Bacteria
   D) Algae

2

3. What structure protects bacterial cells from environmental stress?
   A) Cell membrane
   ~~B)~~ Cell wall
   C) Nucleus
   D) Cytoplasm

2

4. What is the primary stain used in the Gram staining procedure?
   ~~A)~~ Crystal violet
   B) Safranin
   C) Methylene blue
   D) Iodine

2

5. Which of the following is a method of bacterial reproduction?
   A) Binary fission
   ~~B)~~ Budding

2

C) Fragmentation
D) All of the above

6. What is the function of plasmids in bacteria?
A) Energy production
B) Protein synthesis
C) Genetic exchange
D) Cell division

7. Which of the following microorganisms is commonly used in fermentation?
A) *Escherichia coli*
B) *Saccharomyces cerevisiae*
C) *Staphylococcus aureus*
D) *Clostridium botulinum*

8. What is the role of ribosomes in a cell?
A) DNA replication
B) Protein synthesis
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9. Which type of microorganism is most commonly associated with food spoilage?
A) Viruses
B) Bacteria
C) Fungi
D) Protozoa

10. What is a pathogen?
A) A harmless microorganism
B) A disease causing microorganism
C) A beneficial microorganism
D) A type of virus

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

10/20

Name of student : Malathi.R

Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20**

marks

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INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

16/20

Name of student : N. sai keerthana.

Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20**

marks

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INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

Name of student : Arpan

Date :

11/20

Pre-assessment test

Time: 20 minutes **Max Marks: 20**

marks

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INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (Academic year 2023-24)

16/20

Name of student : Joyce Charity .S
Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20**
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(10x2=20M)

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INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Microbiology

Bridge Course for I Semester BSc (BCMB)

(Academic year 2023-24)

INTRODUCTION TO MICROBIOLOGY

Microbiology is a branch of science that deals with the structure, function, classes and economic importance of microorganisms. Microbes play a major role in our day to day life. This chapter introduces the subject of microbiology to the undergraduate beginners who have little knowledge about this subject.

DEFINITION OF MICROBIOLOGY: Microbiology is defined as the study of organisms and agents that are too small to be seen clearly by the unaided eye. To be simpler, microbiology is the study of microorganisms which are the living organisms of microscopic size.
Microorganisms are the living organisms that are less than 1 millimeter in diameter which cannot be seen by our naked eye. Microorganisms can be viewed through microscopes and they can exist as single cells or clusters. Microorganisms include the cellular organisms like bacteria, fungi, algae and protozoa. Viruses are also included as one of the microorganism but they are acellular.

DIFFERENCE BETWEEN MICROBIAL CELL AND PLANT/ANIMAL CELL

Sl. No.	Microbial cell	Plant/Animal cell
1.	A microbial cell can live alone	Plant or animal cell exist only as part of organisms
2.	Growth, energy generation and reproduction by a microbial cell are independent	Plant or animal cell depend on other cells for all processes

OCCURRENCE OF MICROORGANISMS

Microorganisms occur everywhere, even in the atmosphere, water and soil. Almost all natural surfaces are colonized by microbes. Some microorganisms are even adapted to live comfortably in boiling hot springs and frozen sea ice.

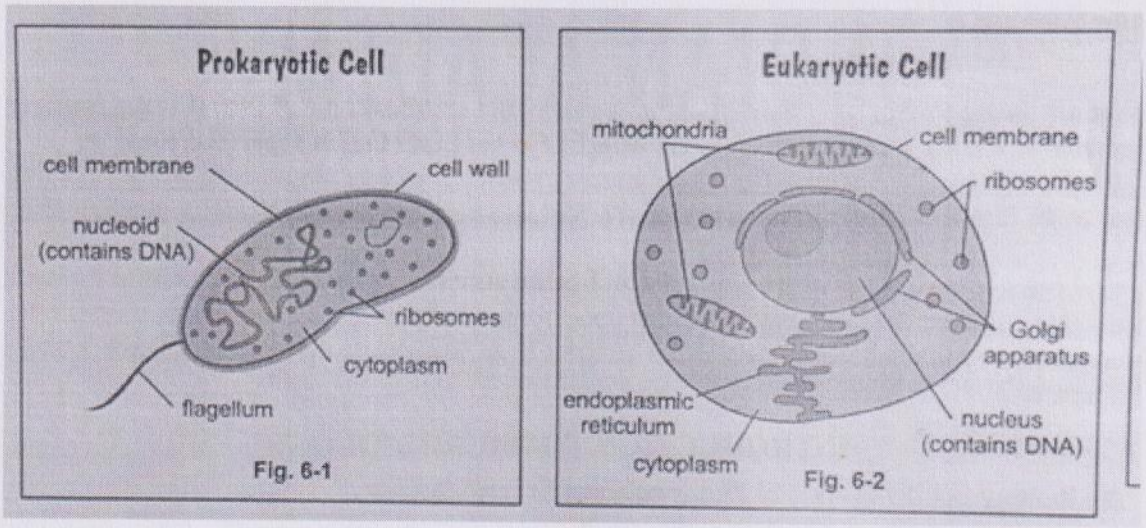
MEMBERS OF THE MICROBIAL WORLD

Based on the structure of nucleus, fundamentally two types of cells exist. They are Prokaryotes and Eukaryotes

PROKARYOTIC CELLS: Prokaryote is a Greek word, pro - before and karyon - nut or kernel. Prokaryotes are the organisms with a primordial nucleus. They have a much simpler morphology than eukaryotic cells and lack a true membrane bound nucleus and cell organelles like mitochondria, Golgi bodies, endoplasmic reticulum, etc. All bacteria and Archaea are prokaryotic.

EUKARYOTIC CELLS: Eukaryote is a Greek word, eu - true and karyon - nut or kernel. Eukaryotes posses a membrane enclosed nucleus and cell organelles. They are more complex morphologically and are usually larger than prokaryotes. Algae, fungi, protozoa, higher plants and animals are eukaryotic.

Department of Life Sciences IADCA



DIFFERENCES BETWEEN PROKARYOTES AND EUKARYOTES

Characteristics	Prokaryotes	Eukaryotes
Cell size	Generally 1 to 10 μm in linear dimension	Generally 5 to 100 μm in linear dimension
Cell division	Binary fission	Mitosis
Cellular organism	Unicellular	Mostly multicellular with differentiation of many types
Cell wall	Complex structure with peptidoglycan layer, protein and lipids	Absent or composed of cellulose or chitin
Plasma membrane	Present, no sterols except in mycoplasma	Present, contain sterols
Metabolism	Anaerobic or aerobic	Aerobic
DNA	Circular DNA in cytoplasm	Very long, linear DNA molecule bounded by nuclear envelope
Membrane bound	Absent	Present nucleus and nucleoli
Extra chromosomal DNA	Present (Plasmid)	Absent
Histones	Absent	Present
RNA and protein	RNA and protein synthesized in same compartment	RNA synthesized and processed in nucleus; proteins synthesized in cytoplasm
Membrane bound organelles	Absent	Present(Nucleus, mitochondria, chloroplast, endoplasmic reticulum, etc.)
Ribosomes	70S type	80S type
Lysosomes	Absent	Present
Locomotion	Rotating flagella and gliding movement	Undulating flagella and cilia and amoeboid movement

Flagella	Consists of two protein building blocks	Consists of multiple microtubules
Pili	Present	Absent
Glyocalyx	Present as a slime layer or capsule	Present in some cells that lacks cell wall
Site for cellular respiration	Cell membrane	Mitochondria
Sexual reproduction	Conjugation	Meiosis
Examples	Bacteria and Archaea	Fungi, Algae and Protozoa

MICROBIAL GROUPS

Based on the morphological, phylogenetic and physiological characteristics, microorganisms are divided into six distinct groups; they are as follows- 1) Bacteria 2) Archaea 3) Fungi 4) Protozoa 5) Algae 6) Viruses

1. BACTERIA are prokaryotes that are usually single celled organisms. They multiply by binary fission and reproduces asexually. They are the most dominant group of microorganisms in soil, water and air. Some bacteria even live in environment that has extreme temperatures, pH or salinity. Many of them play more beneficial roles in nutrient cycling, decomposition of organic matter, production of commercial industrial products like vitamins, antibiotics, etc. Wherein, some of them cause diseases and food spoilage. Ex: Bacillus, Pseudomonas.

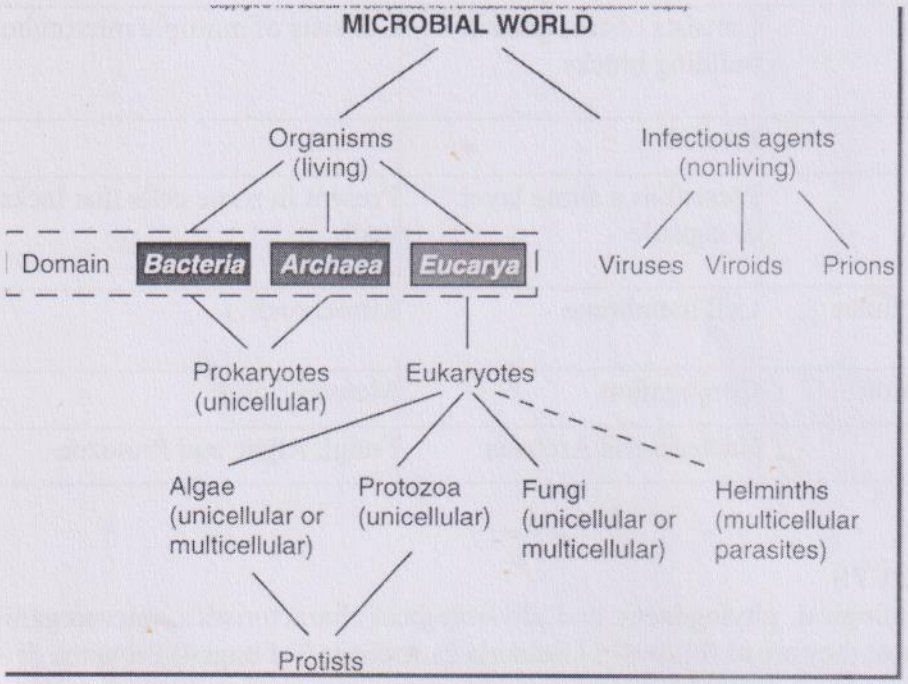
2. ARCHAEA are phylogenetically related prokaryotes that are distinguished from bacteria by many features, most notably their unique ribosomal RNA sequences. Many archaea are found in extreme environments. Some have unusual metabolic characteristics, such as the methanogens, which generate methane gas. Ex: Methanobacterium.

3. ALGAE are eukaryotes that contain chlorophyll and are capable of performing photosynthesis. Algae are found most commonly in aquatic environments. They reproduce either sexually or asexually. Mostly they are used as food supplements. They are mainly used in the preparation of agar. Ex: Spirulina, Gelidium.

4. FUNGI are eukaryotes. Next to bacteria, they are the most dominant organism in the soil. In general, fungi range in size and shape from single-celled microscopic yeasts to giant multicellular mushrooms. They possess filamentous mycelium composed of individual hyphae and reproduce either sexually or asexually by fission, budding or by means of spores borne on fruiting structures. Unicellular fungi like yeast are involved in the production of alcoholic beverages like wine and beer. Multicellular fungi like molds are useful for industrial production of antibiotics like penicillin. Ex: Mucor, Rhizopus.

5. PROTOZOA are unicellular eukaryotes that are usually motile and lack cell wall. Many free living protozoa function as the primary hunters and grazers of the microbial world. They can be found in many different environments and some are normal inhabitants of the intestinal tracts of animals, where they aid in digestion of complex materials such as cellulose. Some of them are parasitic and can cause diseases. Ex: Amoeba, Paramecium.

6. VIRUSES are acellular (non-cellular) organisms that are too small and can be visualized only using electron microscope. All are obligate parasites that require a living cell for reproduction. They are pathogenic to plants, animals and humans. At most of the cases they cause human diseases. Ex: Cauliflower mosaic virus, Cucumber mosaic virus.



HISTORY OF MICROBIOLOGY

ROBERT HOOKE (1635 – 1700) Hooke was the first person to discover the cell (honey comb like structures) from the cross sections of a cork.

ANTONY VAN LEEUWENHOEK (1632 – 1723): praised as the Father of Microbiology. He has constructed simple microscopes and was the first to describe the protozoa and bacteria and named them as animalcules.

THE THEORY OF SPONTANEOUS GENERATION (ABIOGENESIS)

After the discovery of microorganisms by Leeuwenhoek, scientists began to investigate about the origin of microbes. Francesco Redi (1626) and John Needham (1749) supported the appearance of microorganisms spontaneously.

THEORY OF BIOGENESIS: LAZZARO SPALLANZANI (1729-1799) and Louis

Pasteur proved that every form of life takes its origin from their parents, germ cells or seeds.

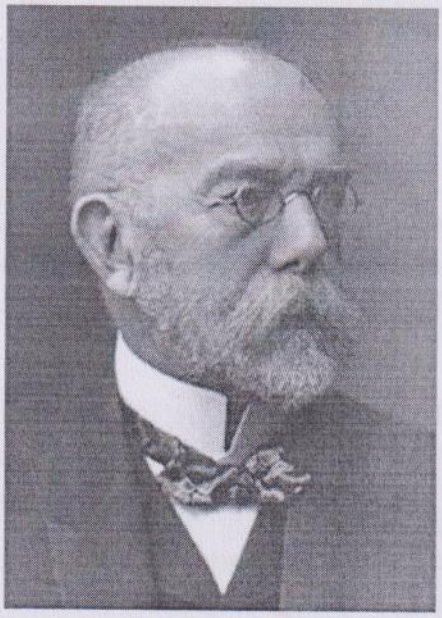
LOUIS PASTEUR (1822-1895): He is considered as "Pioneer of Microbiology", as his contribution led to the development of Microbiology as a separate scientific discipline. He has discovered Fermentation, Pasteurization, and a founder of "Germ theory of disease". He has developed vaccines and gave the term Vaccination.

JOHN TYNDALL (1820-1893): has developed a technique of sterilization called Tyndallization (discontinuous heating).

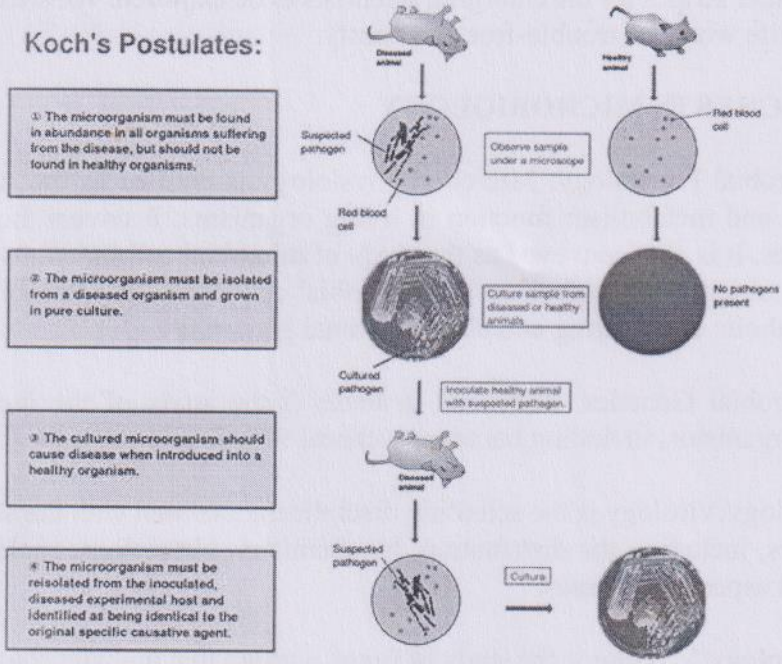
ROBERT KOCH (1843-1912): known as "Father of Bacteriology". He has proved Germ Theory of disease and gave Koch's Postulates, introduced staining techniques and culture methods for bacteria. He has discovered the process of Delayed Hypersensitivity.

EDWARD JENNER (1749-1823) discovered a safe and efficient vaccination against small pox which ultimately led to the eradication of small pox (Variola).

JOSEPH LISTER (1827-1912) is popularly known as "Father of antiseptic surgery" who prevented post-operative sepsis by introducing antiseptic techniques.



Robert Koch (1843 - 1910)



IWANOWSKY (1892) Dmitri Iwanowsky, discovered viruses which were called as "Contagium vivum fluidum" by BEIJERINCK (1898) and Stanley (1935) crystallized the virus.
SELMAN A. WAKSMAN (1945) and his colleagues identified soil organisms producing antibiotics.
ALEXANDER FLEMMING (1881-1955) discovered lysozyme and penicillin.

SCOPE OF MICROBIOLOGY

Currently, we are in the era of Microbiology. Microorganisms are recognized as the basic research tools as they help to understand the chemical and physical basis of life as they are the dominant group of living organisms in the biosphere and are actively involved in our day to day activities.
Microbiology primarily paves way to analyze the biochemical and genetic background of living things. Moreover as microbes are the excellent models for understanding the cell functions and as they play important role in the field of medicine, agriculture and industry that assures human welfare, microbiology is considered as one of the vital branch of science with utmost promising scopes. Microbiology is not just one small subject to be explored. The major branches of Microbiology are as follows-

1. Agricultural Microbiology deals with soil nutrient cycling by microbes, microbial decomposition of organic wastes, plant associated microbes that enhance soil fertility, etc.
2. Food Microbiology covers information about the microbes involved in food spoilage, food borne diseases, commercial food products prepared using microbes, etc.
3. Industrial Microbiology explores the utility of microbes in the production of antibiotics, enzymes, alcoholic beverages, fermented food products, etc.
4. Medical Microbiology deals with the studies related to the microbes that causes diseases, their diagnostic and preventive measures, drug designing, etc.
5. Aquatic Microbiology deals with water purification and biological degradation of wastes in aquatic ecosystems by microbes.
6. Aero Microbiology talks about the microorganisms prevalent in air, their abundance and beneficial or harmful issues.
7. Exomicrobiology is all about the exploration of life in outer space.
8. Geochemical Microbiology analyses the microbial life and their contribution in coal, oil and gas formation areas.

As each branch of microbiology have got their own specialization that contribute to the development of science and technology, always microbiology are crowned as innovate, ever green branch of biology that

have wider scopes for the emerging scientists to be explored. We are living in the world of microbes without which life won't be trouble-free and comfy.

BRANCHES IN MICROBIOLOGY

1. Microbial Physiology: Microbial physiology is defined as the study of how microbial cell structures, growth and metabolism function in living organisms. It covers the study of viruses, bacteria, fungi and parasites. It is also conveyed as the study of microbial cell functions which includes the study of microbial growth, microbial metabolism and microbial cell structure. Microbial physiology is important in the field of metabolic engineering and also functional genomics.

2. Microbial Genetics: Microbial genetics is the study of the mechanisms of heritable information in microorganisms, including bacteria, archaea, viruses and some protozoa and fungi.

3. Virology:Virology is the scientific discipline concerned with the study of the biology of viruses and viral diseases, including the distribution, biochemistry, physiology, molecular biology, ecology, evolution and clinical aspects of viruses.

4. Mycology:Mycology, the study of fungi, a group that includes the mushrooms and yeasts. Mycology also has important applications in the dairy, wine, and baking industries and in the production of dyes and inks. Medical mycology is the study of fungus organisms that cause disease in humans.

5. Bacteriology: The science and study of bacteria and their relation to medicine and to other areas such as agriculture (e.g., farm animals) and industry. Bacteria are single-celled microorganisms which can live as independent organisms or, dependently, as parasites.

6. Microbial Taxonomy: Microbial taxonomy is a means by which microorganisms can be grouped together. Organisms having similarities with respect to the criteria used are in the same group, and are separated from the other groups of microorganisms that have different characteristics. There are a number of taxonomic criteria that can be used.

7. Phycology or Algology: Phycology, also called algology, the study of algae, a large heterogeneous group of chiefly aquatic plants ranging in size from microscopic forms to species as large as shrubs or trees. The discipline is of immediate interest to humans because of algae's importance in ecology.

8. Molecular Biology: Molecular Biology is the field of biology that studies the composition, structure and interactions of cellular molecules – such as nucleic acids and proteins – that carry out the biological processes essential for the cell's functions and maintenance.

9. Microbial Ecology: Microbial ecology is the study of the interactions of microorganisms with their environment, each other, and plant and animal species. It includes the study of symbioses, biogeochemical cycles and the interaction of microbes with anthropogenic effects such as pollution and climate change.

10. Protozoology: Protozoology is a branch of biology that deals with protozoa. Protozoa are eukaryotic organisms belonging to a group characterized for being single-celled, most of them motile and heterotrophic.

11. Parasitology: Parasitology is the scientific discipline concerned with the study of the biology of parasites and parasitic diseases, including the distribution, biochemistry, physiology, molecular biology, ecology, evolution and clinical aspects of parasites, including the host response to these agents.

12. Microbial Evolution: Microbial evolution refers to the genetically driven changes that occur in microorganisms and that are retained over time. Some microbial changes can be in response to a selective pressure. The best examples of this are the various changes that can occur in bacteria in response to the

presence of antibiotics. These changes can make an individual bacterium less susceptible or completely resistant to the killing action of one or more antibiotics.

BASIC TERMS IN MICROBIOLOGY

- A-B exotoxin: class of exotoxin that contains A subunits, which enter the cell and disrupt cellular activities, and B subunits, which bind to host cell receptors
- ABO blood group system: set of glycoprotein antigens found on the surface of red blood cells; the presence or absence of specific carbohydrates determining blood type
- Acid-fast stain: a stain that differentiates cells that have waxy mycolic acids in their gram-positive cell walls
- Acquired immunodeficiency syndrome (AIDS): disease caused by HIV, characterized by opportunistic infections and rare cancers
- Active immunity: stimulation of one's own adaptive immune responses
- Aflatoxin: chemical produced by the fungus Aspergillus flavus; both a toxin and the most potent known natural carcinogen
- Agarose gel electrophoresis: a method for separating populations of DNA molecules of varying sizes by differential migration rates caused by a voltage gradient through a horizontal gel matrix
- Agglutination: binding of different pathogen cells by Fab regions of the same antibody to aggregate and enhance elimination from body
- Allergy: hypersensitivity response to an allergen
- Alphaproteobacteria: class of Proteobacteria that are all oligotrophs
- Amensalism: type of symbiosis in which one population harms the other but remains unaffected itself
- Amoebic dysentery: severe form of intestinal infection caused by Entamoeba histolytica, characterized by severe diarrhea with blood and mucus
- Amphipathic: a molecule containing both polar and nonpolar parts
- Anaerobic respiration: use of a non-oxygen inorganic molecule, like CO2, nitrate, nitrite, oxidized iron, or sulfate, as the final electron acceptor at the end of the electron transport system
- Anthrax: a disease caused by Bacillus anthracis; the cutaneous form causes a skin lesion to develop; gastrointestinal and inhalation anthrax have high mortality rates
- Antibody: Y-shaped glycoprotein molecule produced by B cells that binds to specific epitopes on an antigen
- Antigen (also, immunogen): a molecule that stimulates an adaptive immune response
- Antimicrobial drugs: chemical compounds, including naturally produced drugs, semisynthetic derivatives, and synthetic compounds, that target specific microbial structures and enzymes, killing specific microbes or inhibiting their growth
- Antisense RNA: small noncoding RNA molecules that inhibit gene expression by binding to mRNA transcripts via complementary base pairing
- Antisense strand: transcription template strand of DNA; the strand that is transcribed for gene expression
- Antiserum: serum obtained from an animal containing antibodies against a particular antigen that was artificially introduced to the animal
- Ascus: structure of ascomycete fungi containing spores
- Asepsis: sterile state resulting from proper use of microbial control protocols
- Attachment: binding of phage or virus to host cell receptors
- Attenuation: regulatory system of prokaryotes whereby secondary stem-loop structures formed within the 5' end of an mRNA being transcribed determine both if transcription to complete the synthesis of this mRNA will occur and if this mRNA will be used for translation
- Autotroph: organism that converts inorganic carbon dioxide into organic carbon
- Auxotroph: nutritional mutant with a loss-of-function mutation in a gene encoding the biosynthesis of a specific nutrient such as an amino acid

- β-oxidation: process of fatty acid degradation that sequentially removes two-carbon acetyl groups, producing NADH and FADH2, on entry into the Krebs cycle
- B lymphocyte: antibody-producing cells of humoral immunity; B cell
- Bacteremia: condition marked by the presence of bacteria in the blood
- Bacteriochlorophylls: green, purple, or blue pigments of bacteria; they are similar to chlorophyll of plants
- Barophile: organism that grows under high atmospheric pressure
- Basal body: component of eukaryotic flagellum or cilium composed of nine microtubule triplets and attaches the flagellum or cilium to the cell
- Betaproteobacteria: class of Proteobacteria that are all eutrophs
- Binary fission: predominant form of bacterial reproduction in which one cell divides into two daughter cells of equal size, which separate, each offspring receiving a complete copy of the parental genome
- Binocular: having two eyepieces
- Binomial nomenclature: a universal convention for the scientific naming of organisms using Latinized names for genus and species
- Biofilm: complex ecosystem of bacteria embedded in a matrix
- Bioremediation: use of microbes to remove xenobiotics or environmental pollutants from a contaminated site
- Botulism: form of flaccid paraylsis caused by the ingestion of a neurotoxin produced by Clostridium botulinum
- Brightfield microscope: a compound light microscope with two lenses; it produces a dark image on a bright background
- Budding: unequal reproductive division in which a smaller cell detaches from the parent cell
- Calvin-Benson cycle: most common CO2 fixation pathway in most photoautotrophs; involves light-independent reactions of photosynthesis that occur in the cytoplasm of photosynthetic bacteria and in the stroma of eukaryotic chloroplasts
- Capsule: type of glycocalyx with organized layers of polysaccharides that aid in bacterial adherence to surfaces and in evading destruction by immune cells
- Carcinogen: agent that causes cancer
- Catabolism: chemical reactions that break down complex molecules into simpler ones
- Cell envelope: the combination of external cellular structures (e.g., plasma membrane, cell wall, outer membrane, glycocalyces) that collectively contain the cytoplasm and internal structures of a cell
- Chemotaxis: directional movement of a cell in response to a chemical attractant
- Chemotroph: organism that gets its energy from the transfer of electrons originating from chemical compounds
- Chickenpox: common childhood disease caused by the varicella-zoster virus and marked by the formation of pustular lesions on the trunk
- Chitin: polysaccharide that is an important component of fungal cell walls
- Chlorophyll: a type of photosynthetic pigment found in some prokaryotic and eukaryotic cells
- Cholera: gastrointestinal illness caused by Vibrio cholere characterized by severe diarrhea
- Chromosome: discrete DNA structure within a cell that controls cellular activities
- Cilia (singular: cilium): short filamentous structures found on some eukaryotic cells; each is composed of microtubules in a 9+2 array, and may be used for locomotion, feeding, and/or movement of extracellular particles that come in contact with the cell
- Clone: a genetically identical cell or individual
- Codon: three-nucleotide sequence within mRNA that specifies a particular amino acid to be incorporated into the polypeptide being synthesized
- Coenocyte: multinucleated eukaryotic cell that forms as a result of multiple rounds of nuclear division without the accompanying division of the plasma membrane

- Coenzyme: organic molecule required for proper enzyme function that is not consumed and is reusable
- Cofactor: inorganic ion that helps stabilize enzyme conformation and function
- Colony-forming unit (CFU): a counting quantity represented by a colony formed on solid medium from a single cell or a few cells
- Commensalism: type of symbiosis in which one population benefits and the other is not affected
- Communicable: able to be transmitted directly or indirectly from one person to another
- Competitive inhibitor: molecule that binds to an enzyme's active site, preventing substrate binding
- Complement system: series of proteins that can become activated in the presence of invading microbes, resulting in opsonization, inflammation, and lysis of pathogens
- Complementary base pairs: base pairing due to hydrogen bonding that occurs between a specific purine and a specific pyrimidine; A bonds with T (in DNA), and C bonds with G
- Compound microscope: a microscope that uses multiple lenses to focus light from the specimen
- Conjugation: mechanism of horizontal gene transfer in bacteria in which DNA is directly transferred from one bacterial cell to another by a conjugation pilus
- Contagious: easily spread from person to person
- Contractile vacuoles: organelles found in some cells, especially in some protists, that take up water and then move the water out of the cell for osmoregulatory purposes (i.e., to maintain an appropriate salt and water balance)
- Contrast: visible differences between parts of a microscopic specimen
- Culture medium: combination of compounds in solution that supports growth
- Cyanobacteria: phototrophic, chlorophyll-containing bacteria that produce large amounts of gaseous oxygen
- Cysts: microbial cells surrounded by a protective outer covering; some microbial cysts are formed to help the microbe survive harsh conditions, whereas others are a normal part of the life cycle
- Cytoplasm: the gel-like material composed of water and dissolved or suspended chemicals contained within the plasma membrane of a cell
- Dengue fever: mosquito-borne viral hemorrhagic disease; also known as breakbone fever
- Dioecious: refers to sexually reproducing organisms in which individuals have either male or female reproductive organs (not both)
- Diphtheria: serious infection of the larynx, caused by the toxigenic bacterium Corynebacterium diphtheriae
- Diploid: having two copies of each chromosome
- Disinfectant: antimicrobial chemical applied to a fomite during disinfection that may be toxic to tissues
- Doubling time: the time it takes for the population to double; also referred to as generation time
- Drug resistance: ability of a microbe to persist and grow in the presence of an antimicrobial drug
- Dysentery: intestinal inflammation that causes diarrhea with blood and mucus
- Ectoplasm: outer, more gelatinous layer of cytoplasm under a protist cell membrane
- Electron microscope: a type of microscope that uses short-wavelength electron beams rather than light to increase magnification and resolution
- Endemic disease: an illness that is constantly present (often at low levels) in a population
- Endoplasm: inner, more fluid layer of cytoplasm under a protist cell membrane (inside of the ectoplasm)
- Endospore: a cellular structure formed by some bacteria in response to adverse conditions; preserves DNA of the cell in a dormant state until conditions are favorable again
- Enzyme: catalyst for biochemical reactions inside cells
- Enzyme-linked immunosorbent assay (ELISA): specialized form of EIA in which either the primary antibody or the antigen is first attached to a solid surface such as the well of a microtiter plate
- Epidemiology: the study of where and when infectious diseases occur in a population and how they are transmitted and maintained in nature
- Epiphyte: a plant that grows on another plant

- Immunology: the study of the immune system
- in vitro: outside the organism in a test tube or artificial environment
- in vivo: inside the organism
- Incubation period: the first stage of acute disease, during which the pathogen begins multiplying in the host and signs and symptoms are not observable
- Infectious disease: disease caused by a pathogen
- Influenza: highly contagious and acute viral disease of the respiratory tract caused by the influenza virus
- Interferons: cytokines released by cells that have been infected with a virus; stimulate antiviral responses in nearby cells as well as the cells secreting the interferons
- Ionizing radiation: high-energy form of radiation that is able to penetrate surfaces and sterilize materials by damaging microbial cell components and DNA
- Jaundice: yellowish color of the skin and mucous membranes caused by excessive bilirubin caused by a failure of the liver to effectively process the breakdown of hemoglobin
- Larynx: region of the respiratory tract containing the vocal cords; also referred to as the voice box
- Leprosy: Hansen's disease, caused by Mycobacterium leprae
- Lichen: symbiotic association of a fungus with an algae or cyanobacterium
- Lipid: macromolecule composed primarily of carbon and hydrogen; source of nutrients for organisms, a storage form for carbon and energy, a part of the structure of membranes, and may function as hormones, pharmaceuticals, fragrances, and pigments
- Lymph nodes: bean-shaped organs situated throughout the body that contain areas called germinal centers, which are rich in B and T lymphocytes; also contain macrophages and dendritic cells for antigen presentation
- Lyophilization: rapid freezing, followed by placement under a vacuum, of a material so that water is lost by sublimation, thereby inhibiting microbial growth
- Lysis: destruction of the host cell
- Lysosome: an organelle of the endomembrane system that contains digestive enzymes that break down engulfed material such as foodstuffs, infectious particles, or damaged cellular components
- Macromolecule: polymer assembled from of individual units, monomers, that bind together like building blocks
- Macronutrient: element required in abundance in cells; account for approximately 99% of the cell's dry weight
- Malaria: potentially fatal, mosquito-borne protozoan infection caused by several species of Plasmodium and characterized by a relapsing fever, nausea, vomiting, and fatigue
- Measles: highly contagious respiratory disease caused by the measles virus (MeV); marked by an intense macular rash and high fever; also known as rubeola
- Memory: the ability of the specific adaptive immune system to quickly respond to pathogens to which it has previously been exposed
- Meninges: membranes that surround the brain
- MERS: Middle East respiratory syndrome; first described in Saudi Arabia in 2013; caused by a zoonotic coronavirus that results in flu-like symptoms
- Mesophile: a microorganism that grows best at moderate temperatures, typically between about 20 °C and 45 °C
- Metagenomics: the sequencing of genomic fragments from microbial communities, allowing researchers to study genes from a collection of multiple species
- Micelle: simple spherical arrangement of amphipathic lipid molecules with nonpolar tails aggregated within the interior and polar heads forming the outer surface
- Microbe: generally, an organism that is too small to be seen without a microscope; also known as a microorganism
- Microbial ecology: study of the interactions between microbial populations microbiology the study of microorganisms

- Microbiome: all prokaryotic and eukaryotic microorganisms that are associated with a certain organism
- Micronutrient: indispensable element present in cells in lower amounts than macronutrients; also called trace element
- Microorganism: generally, an organism that is too small to be seen without a microscope; also known as a microbe
- Mold: a multicellular fungus, typically made up of long filaments
- Mumps: a viral illness that causes swelling of the parotid glands
- Mutation: heritable change in the DNA sequence of an organism
- Mutualism: type of symbiosis in which two populations benefit from, and depend on, each other
- Mycoses (mycosis, sing.): refers to diseases caused by fungi
- Mycotoxin: biologically active product of pathogenic fungi that causes adverse changes in the host cells
- Nematoda: phylum comprising roundworms
- Neutralism: type of symbiosis that does not affect either of the two populations
- Nonionizing radiation: low-energy radiation, like ultraviolet light, that can induce dimer formation between two adjacent pyrimidine bases, resulting in DNA polymerase stalling and possible formation of a frameshift mutation
- Nosocomial disease: disease acquired in a hospital setting
- Obligate aerobe: organism that requires oxygen for growth
- Obligate anaerobe: organism that dies in the presence of oxygen
- Oligotroph: organism capable of living in low-nutrient environments
- Operon: a group of genes with related functions often found clustered together within the prokaryotic chromosome and transcribed under the control of a single promoter and operator repression sequence
- Organotroph: chemotroph that uses organic molecules as its electron source; also known as chemoheterotroph
- Osmosis: diffusion of water across a semipermeable membrane
- Pandemic disease: an epidemic that is worldwide as opposed to regional
- Parasitism: type of symbiosis in which one population benefits while harming the other parasitology the study of parasites
- Pasteurization: form of microbial control using heat that is applied to foods; kills pathogens and reduces the number of spoilage-causing microbes while maintaining food quality
- Pathogen: a disease-causing microorganism
- Phagocytosis: a type of endocytosis in which large particles are engulfed by membrane invagination, after which the particles are enclosed in a pocket, which is pinched off from the membrane to form a vacuole
- Pharynx: region connecting the nose and mouth to the larynx: the throat
- Phenotype: observable characteristics of a cell or organism
- Photosynthesis: process whereby phototrophic organisms convert solar energy into chemical energy that can then be used to build carbohydrates
- Phototroph: organism that gets its energy from light
- Phylogeny: the evolutionary history of a group of organisms
- Phytoplankton: photosynthetic plankton
- Plague: infectious epidemic disease caused by Yersinia pestis
- Plasma: fluid portion of the blood that contains all clotting factors
- Plasmid: small, circular, double-stranded DNA molecule that is typically independent from the bacterial chromosome
- Platelets: cell fragments in the peripheral blood that originate from megakaryocyte cells in the bone marrow; also called thrombocytes
- Platyhelminthes: phylum comprising flatworms
- Pneumonia: pulmonary inflammation that causes the lungs to fill with fluids

- Poliomyelitis (polio): disease caused by an infection of the enteric polio virus characterized by inflammation of the motor neurons of the brain stem and spinal cord; can result in paralysis
- Prion: a subviral infectious particle consisting of just proteins that can cause progressive diseases in animals and humans
- Prokaryote: an organism whose cell structure does not include a membrane-bound nucleus
- Proteobacteria: phylum of gram-negative bacteria
- Protozoans: informal term for some protists, generally those that are nonphotosynthetic, unicellular, and motile protozoology the study of protozoa
- Purines: nitrogenous bases containing a double-ring structure with a six-carbon ring fused to a five-carbon ring; includes adenine and guanine
- Pyrimidines: nitrogenous bases containing a single six-carbon ring; includes cytosine and thymine in DNA
- Quarantine: the isolation of an individual for the purpose of preventing the spread of disease
- Quorum sensing: cell-to-cell communication in bacteria; enables a coordinated response from cells when the population reaches a threshold density
- Rabies: contagious viral disease primarily transmitted by the bite of infected mammals that can cause acute encephalitis resulting in madness, aggressiveness, coma, and death
- Replication: process by which DNA is copied
- Reservoir: a living host or nonliving site in which a pathogenic organism can survive or multiply
- Resident microbiota: microorganisms that constantly live in the human body
- Rh factor: red blood cell surface antigen that can trigger type II hypersensitivity reactions
- Ringworm: a tinea (cutaneous mycosis of the skin), typically characterized by a round, red, slightly raised lesion that heals outward from the center, giving it the appearance of a round worm
- rRNA: type of stable RNA that is a major constituent of ribosomes, ensuring proper alignment of the mRNA and the ribosomes as well as catalyzing the formation of the peptide bonds between two aligned amino acids during protein synthesis
- Rubella: German measles, caused by the rubella virus
- Salmonellosis: gastrointestinal illness caused by Salmonella bacteria
- Sanitization: protocol that reduces microbial load on inanimate surfaces to levels deemed safe for public health
- Saprozoic: refers to protozoans that ingest small, soluble food molecules
- SARS: severe acute respiratory syndrome; caused by a zoonotic coronavirus that results in flu-like symptoms
- Sebaceous gland: a gland located in hair follicles that secretes sebum
- Sebum: lipid-rich substance secreted by the sebaceous glands of the skin
- Semiconservative DNA replication: pattern of DNA replication process whereby each of the two parental DNA strands acts as a template for new DNA to be synthesized, producing hybrid old- and new-strand daughter molecules
- Serotype: strain or variation of the same species of bacteria; also called serovar
- Serum: fluid portion of the blood after clotting has occurred; generally lacks clotting factors
- Shigellosis: gastrointestinal illness caused by Shigella bacteria, also called bacillary dysentery
- Simple microscope: a type of microscope with only one lens to focus light from the specimen
- Slime layer: a type of glycocalyx with unorganized layers of polysaccharides that aid bacterial adherence to surfaces
- Smear: a thin layer of a specimen on a slide
- Spirochetes: a group of long, thin, spiral-shaped fastidious bacteria that includes the human pathogens that cause syphilis, Lyme disease, and leptospirosis
- Spleen: abdominal organ consisting of secondary lymphoid tissue that filters blood and captures pathogens and antigens that pass into it; also contains specialized macrophages and dendritic cells that are crucial for antigen presentation
- Sporadic disease: an illness that occurs at relatively low levels with no discernible pattern or trend, frequently with no geographic focus

- Spores: specialized cells that may be used for reproduction or may be specialized to withstand harsh conditions
- Stage: the platform of a microscope on which slides are placed\
- Staining: the addition of stains or dyes to a microscopic specimen for the purpose of enhancing contrast
- Sterilization: protocol that completely removes all vegetative cells, endospores, and viruses from an item
- Strep throat (streptococcal pharyngitis): bacterial pharyngitis caused by Streptococcus pyogenes
- Substrate: chemical reactants of an enzymatic reaction
- Sweat gland: one of numerous tubular glands embedded in the dermis that secretes the watery substance known as perspiration
- Symbiosis: any interaction between different species within a community
- Symptom: subjective experience of disease felt by the patient
- Synapse: junction between a neuron and another cell
- Syncytia: multinucleated cells that form from the fusion of normal cells during infections or other processes
- Syndrome: group of signs and symptoms characteristic of a particular disease
- Syphilis: a Sexually transmitted infection caused by the bacterium Treponema pallidum
- Taeniasis: infection caused by Taenia or Diphyllobothrium
- Tapeworms: segmented, hermaphroditic, parasitic flatworms (Platyhelminthes)
- Tartar: calcified heavy plaque on teeth, also called dental calculus taxonomy the classification, description, identification, and naming of living organisms
- Tetanus: bacterial disease caused by exotoxin produced by Clostridium tetani that causes a rigid paralysis
- Toxemia: presence of toxins in the blood
- Toxigenicity: ability of a pathogen to produce toxins to cause damage to host cells
- Toxin: poison produced by a pathogen
- Toxoid vaccine: vaccine that contains inactivated bacterial toxins
- Toxoplasmosis: typically asymptomatic protozoan infection caused by Toxoplasma spp. and transmitted through contact with cysts in cat feces; infections in pregnant women may cause birth defects or miscarriage
- Trace element: indispensable element presentin cells in lower amounts than macronutrients; also called micronutrient
- Transduction: mechanism of horizontal gene transfer in bacteria in which genes are transferred through viral infection
- Transfection: the introduction of recombinant DNA molecules into eukaryotic hosts
- Transformation: mechanism of horizontal gene transfer in bacteria in which naked environmental DNA is taken up by a bacterial cell
- Transgenic: describing an organism into which foreign DNA from a different species has been introduced
- Transient microbiota: microorganisms, sometimes pathogenic, that are only temporarily found in the human body
- Translation (protein synthesis): process of protein synthesis whereby a ribosome decodes an mRNA message into a polypeptide product
- Transmission electron microscope (TEM): a type of electron microscope that uses an electron beam, focused with magnets, that passes through a thin specimen
- Transport vesicle: membranous sac that carries molecules between various components of the endomembrane system
- Transposon (transposable element): molecule of DNA that can independently excise from one location in a DNA molecule and integrate into the DNA elsewhere

- tRNA: small type of stable RNA that carries the correct amino acid to the site of protein synthesis in the ribosome and base pairs with the mRNA to allow the amino acid it carries to be inserted in the polypeptide chain being synthesized
- Trophozoite: a life cycle phase in which protists are actively feeding and growing
- Tuberculosis: life-threatening form of microbial infection marked by the presence of acid- fast bacteria growing in nodules (especially in the lungs)
- Tularemia: infection of the lymphatic system by Francisella tularensis; also known as rabbit fever
- Tumor: collection or aggregate of cells; can be benign (noncancerous) or malignant (cancerous)
- Typhoid fever: serious illness caused by infection with certain serotypes of Salmonella
- Ulcer: open sore
- Unit membrane: biological membrane composed of two layers of phospholipid molecules with the nonpolar tails associating to form a hydrophobic barrier between the polar heads; also called lipid bilayer
- Unsaturated fatty acid: lipid with hydrocarbon chains containing one or more carbon- carbon double bonds and subsequently fewer than the maximum number of hydrogen atoms per chain
- Uracil: pyrimidine nitrogenous base found only in RNA nucleotides
- Ureter: duct that transports urine from the kidneys to the urinary bladder
- Urethra: duct through which urine passes from the urinary bladder to leave the body through the urinary meatus
- Urethritis: inflammation of the urethra
- Vaccination: inoculation of a patient with attenuated pathogens or antigens to activate adaptive immunity and protect against infection
- Variolation: the historical practice of inoculating a healthy patient with infectious material from a person infected with smallpox in order to promote immunity to the disease
- Vector: animal (typically an arthropod) that transmits a pathogen from one host to another host; DNA molecules that carry DNA fragments from one organism to another
- Vegetative cell: a cell that is actively growing and dividing, and does not contain an endospore
- Vein: blood vessel that returns blood from the tissues to the heart for recirculation
- Vertical direct transmission: transfer of a pathogen from mother to child during pregnancy, birth, or breastfeeding
- Viable cell: live cell; live cells are usually detected as colony-forming units
- Viable plate count: direct method of measuring microbial growth in a culture; the number of viable or live cells is usually expressed in CFU/mL
- Viral conjunctivitis: inflammation of the conjunctiva caused by a viral infection
- Viremia: presence of virus in blood
- Virion: inert particle that is the reproductive form of a virus
- Viroid: infectious plant pathogen composed of RNA
- Virology: the study of viruses
- Virulence: degree to which an organism is pathogenic; severity of disease signs and symptoms
- Virus: an acellular microorganism, consisting of proteins and genetic material (DNA or RNA), that can replicate itself by infecting a host cell
- Wet mount: a slide preparation technique in which a specimen is placed on the slide in a drop of liquid
- Whooping cough: common name for pertussis
- Wild type: phenotype of an organism that is most commonly observed in nature
- World Health Organization (WHO): international public health organization within the United Nations; monitors and communicates international public health information and coordinates international public health programs and emergency interventions.
- Xenobiotic: compound synthesized by humans and introduced to an environment in much higher concentrations than expected in nature
- Xenograft: transplanted tissue from a donor that is of a different species than the recipient
- Yeast: any unicellular fungus

- Yellow fever: mild to potentially fatal mosquito-borne viral disease caused by the yellow fever virus
- Ziehl-Neelsen technique: a method of acid-fast staining that uses heat to infuse the primary stain, carbolfuchsin, into acid-fast cells
- Zone of inhibition: clear zone around a filter disk impregnated with an antimicrobial drug, indicating growth inhibition due to the antimicrobial drug
- Zoonosis or zoonotic disease: any disease that is transmitted to humans by animals
- Zooplankton: heterotrophic plankton
- Z-scheme: electron flow seen in noncyclic photophosphorylation in plants, algae, and cyanobacteria due to the use of both PSI and PSII

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Department of Life Sciences
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INDIAN ACADEMY
Degree College - Autonomous

20/20

Department of Life Sciences Microbiology
Bridge Course for I Semester BSc
(Academic year 202324)

Name of student : Pavithra. K
Date :

Post assessment test

Time: 20 minutes **Max Marks: 20**
marks
Answer all the questions. Each question carries 2 mark.
(10x2=20M)

1. How do antibiotics work?
   A) Kill viruses
   B) Kill bacteria
   C) Boost immune response
   D) Prevent DNA replication ✓ 2

2. Which of the following is NOT a type of virus?
   A) Bacteriophage
   B) Retrovirus
   C) Yeast ✓ 2
   D) Influenza virus

3. What is pasteurization?
   A) A method of sterilization
   B) A heat treatment to kill pathogens ✓ 2
   C) A method to enhance flavor
   D) A fermentation process

4. What is an opportunistic pathogen?
   A) A pathogen that causes disease in healthy individuals
   B) A harmless microorganism
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5. Which of the following is a characteristic of fungi?
   A) They are prokaryotic
   B) They reproduce by photosynthesis
   C) They have cell walls made of chitin
   D) They are multicellular only

6. What is a biofilm?
   A) A single type of bacteria
   B) A community of microorganisms adhering to surfaces
   C) A type of virus
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7. Which microorganism is commonly used in the production of yogurt?
   A) Lactobacillus
   B) Streptococcus
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8. What does the term "aseptic technique" refer to?
   A) A method to sterilize equipment
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9. What role do decomposers play in an ecosystem?
   A) They produce oxygen
   B) They recycle nutrients
   C) They cause disease
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10. Which of the following is a common method for isolating bacteria?
   A) Serial dilution
   B) Centrifugation
   C) Freezing
   D) Filtration

INDIAN ACADEMY
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Department of Life Sciences Microbiology
Bridge Course for I Semester BSc
(Academic year 202324)

18/20

Name of student : Deekshaswini.N
Date :

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13/20

Department of Life Sciences Microbiology
Bridge Course for I Semester BSc
(Academic year 202324)

Name of student : Malathi.R
Date :

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18/20

Department of Life Sciences Microbiology
Bridge Course for I Semester BSc
(Academic year 202324)

Name of student : N. saikeerthana
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Department of Life Sciences Microbiology
Bridge Course for I Semester BSc
(Academic year 202324)

13/20

Name of student : Arpan
Date :

Post assessment test

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   B) Centrifugation
   C) Freezing
   D) Filtration

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences Microbiology
Bridge Course for I Semester BSc
(Academic year 202324)

18/20

Name of student : Joyce Christy. S
Date :

Post assessment test

Time: 20 minutes **Max Marks: 20**
marks
Answer all the questions. Each question carries 2 mark.
(10x2=20M)

1. How do antibiotics work?
   A) Kill viruses
   B) Kill bacteria
   C) Boost immune response
   D) Prevent DNA replication

2

2. Which of the following is NOT a type of virus?
   A) Bacteriophage
   B) Retrovirus
   C) Yeast
   D) Influenza virus

2

3. What is pasteurization?
   A) A method of sterilization
   B) A heat treatment to kill pathogens
   C) A method to enhance flavor
   D) A fermentation process

4. What is an opportunistic pathogen?
   A) A pathogen that causes disease in healthy individuals
   B) A harmless microorganism
   C) A pathogen that causes disease only in immunocompromised individuals
   D) A beneficial microorganism

2

5. Which of the following is a characteristic of fungi?
   A) They are prokaryotic
   B) They reproduce by photosynthesis
   C) They have cell walls made of chitin
   D) They are multicellular only

6. What is a biofilm?
   A) A single type of bacteria
   B) A community of microorganisms adhering to surfaces
   C) A type of virus
   D) A method of sterilization

7. Which microorganism is commonly used in the production of yogurt?
   A) Lactobacillus
   B) Streptococcus
   C) Bacillus
   D) Saccharomyces

8. What does the term "aseptic technique" refer to?
   A) A method to sterilize equipment
   B) A technique to prevent contamination
   C) A type of fermentation
   D) A method to enhance growth

9. What role do decomposers play in an ecosystem?
   A) They produce oxygen
   B) They recycle nutrients
   C) They cause disease
   D) They enhance photosynthesis

10. Which of the following is a common method for isolating bacteria?
   A) Serial dilution
   B) Centrifugation
   C) Freezing
   D) Filtration

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFE SCIENCES- GENETICS

FOUNDATION COURSE



SEMESTER I B.Sc.(Hons) GBt

BATCH 2023-2027

DATE: 01-08-2023 To 05-08-2023

Department of Life Sciences IADCA

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

PRE SCREENING QUESTIONNAIRE

1. What is the phenotype of a trait?
   A. It is the physical appearance or what is seen with the trait.
   B. It is all of the possible outcomes of a trait.
   C. Mother gives 50% and father gives 50%, the phenotype is a mixture.
   D. It is always the dominant trait.

Answer: A

2. Different forms of a characteristic (brown eyes, curly hair) are called:
   A. Cells
   B. Traits
   C. Heredity
   D. Genetics

Answer: B

3. The scientific study of heredity is called:
   A. Taxonomy
   B. Classification
   C. Heredity
   D. Genetics

Answer: D

4. What is the difference between self- pollination
   A. Self pollination, plants pollinate themselves. Cross Pollination plants pollinate others
   B. Self pollination, plants pollinate others. Cross pollination, plants pollinate themselves.
   C. Self pollination, plants don't pollinate. Cross pollination, plants do pollinate.
   D. Self pollination, plants do pollinate. Cross pollination, plants don't pollinate.

Answer: A

5. What is the difference between a dominant and recessive trait?
   A. The dominant trait blocks the recessive trait incomplete dominance.
   B. The recessive trait is seen and the dominant trait is unseen.
   C. The dominant trait is written as a lowercase letter and the recessive is capital.
   D. To be seen the dominant trait is always a homozygous pair of alleles.

Answer: B

6. Which is a homozygous pair of alleles?
   A. Aa
   B. AB
   C. ab
   D. AA

Answer: D

7. Every cell in your body has _____ alleles for every trait.
   A. 2
   B. 1
   C. 10
   D. 1000

Answer: A

8. Who has DNA that is the same?
   A. Fraternal Twins
   B. Mother and son
   C. Identical Twins
   D. No one has the same DNA

Answer: C

9. Each parent donates one set of instructions to its offspring known as…
   A. Alleles
   B. Proteins
   C. Cell
   D. Sex Cells

Answer: A

10. Punnett squares predict the ____ for a particular trait.
   A. Phenotype
   B. Genotype
   C. Probability
   D. Chromosomes

Answer: B

11. Who is the father of genetics?
   A. Bill Nye
   B. Gregor Mendel
   C. Jonas Bach
   D. Gregor Daniels

Answer: B

12. Why did Mendel choose the Pea plant to study?
   A. He chose the pea plant because of the unique taste.

B. He chose the pea plant because of its size.
C. He chose the pea plant because of the flower color.
D. He chose the pea plant out of coincidence.

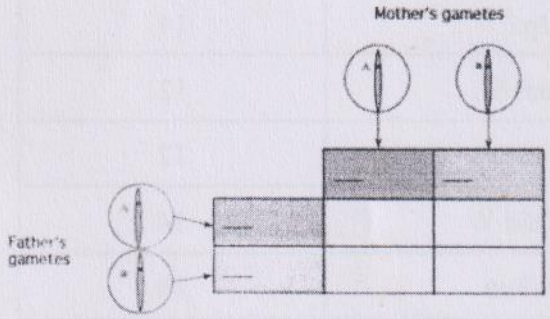
Answer: C

13. The organism that carries both the dominant allele and the recessive allele is called a _____.

A. Hybrid
B. Pure trait
C. Genotype
D. phenotype

Answer: A

14. What are the possible genotypes?



A. Aa, AA, AA, AA
B. AA, Aa, AA, Aa
C. AA, AA, AA,AA
D. Aa, Aa, Aa, Aa

Answer: B

15. Are Co dominant offspring genotype's heterozygous or homozygous?

A. Heterozygous
B. Homozygous
C. Both
D. Neither

Answer: D

INDIAN ACADEMY
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DEPARTMENT OF LIFESCIENCES- GENETICS

PRE SCREENING TEST, AUGUST 2023 Max.Marks: 15

Sl.No	Name	Marks
1.	Abdul Rayan J	14
2.	A Gagan	14
3.	Aliya Shariff	12
4.	Aishwarya K	12
5.	Jayapradeepa	14
6.	Kushal Kumar S	12
7.	Ligodi Divine	12
8.	Mohammed Zaki W	14
9.	M Rahul Krishna	14
10.	Nithin H	10
11.	Prabas H	14
12.	Sana Hayath	13
13.	Shaziya Afreen	12
14.	Sudheer H	13
15.	Umme Asma G	14
16.	Venkata Raju	13

Faculty Incharge

Programme Coordinator

Program Coordinator - Genetics
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFESCIENCES- GENETICS
FOUNDATION COURSE FOR I SEMESTER B.Sc.(Hons) GBt (2023-2027)

Topic 1: Cell, cell division and cell cycle

Faculty in-charge: Dr. Vanitha G Ramesh

Total hours taken: 5 hours

Topic 2: Overview of basics of genetics, terminologies and applications

Faculty in-charge: Prof. Cynthia Kasi

Total hours taken: 5 hours

Aim:

The course aims to provide students with better understanding of the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles and how these cells reproduce and grow which lays the foundation for study of heredity and variation. It also provides the basic principles of inheritance at the molecular, cellular and organism levels to uncover similarities and differences that improve their understanding of how human genes function and are controlled.

Learning Objectives:

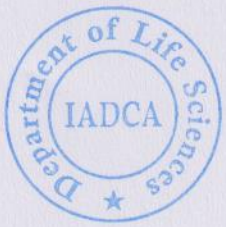
The course aims to provide students with a basic understanding of:

- The glimpses of control of cell cycle, the mechanism of cell death, different types of cell divisions.
- The major events of eukaryotic cell division that enable the genome of one cell to be passed on to two daughter cells.
- The basic concepts of heredity and variations,genetic terminologies and be able to differentiate between them.
- The scope and various applications of genetics.

Learning Outcomes:

By the end of the course, students should be able to:

- Describe the chemical nature of biological molecules with the theoretical aspects of prokaryotic and eukaryotic organisms including structure, life cycle and genetic significance.
- Comprehend cell division, functions in reproduction, growth, and repair.
- To elucidate the structure and genetic characteristics of genetic materials and describe the conceptual understanding of Genetic heredity and its variations.
- Comprehend the future of genetics with a deeper understanding of its branches and its various fields of employment.



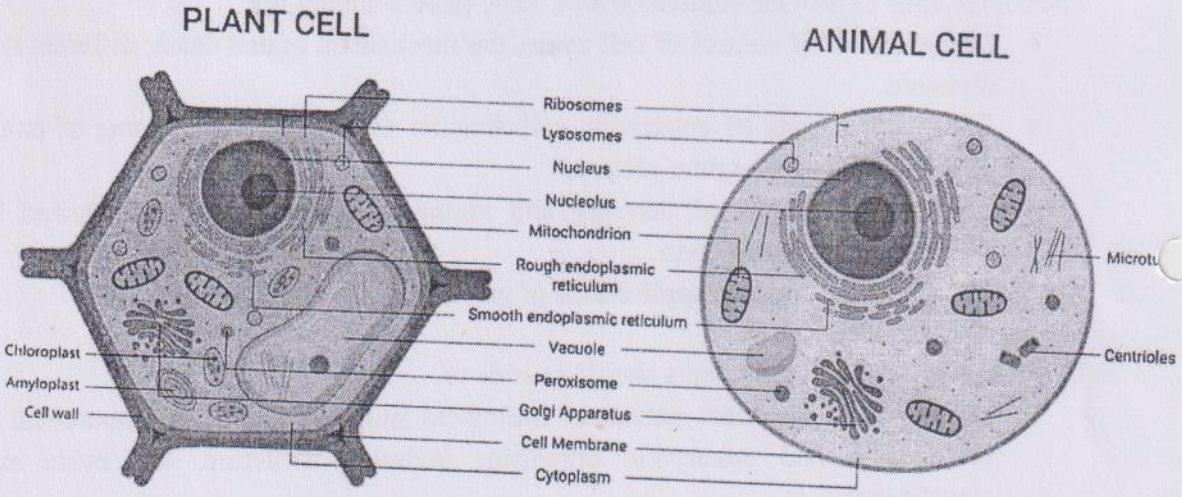
Cell:

"A cell is defined as the smallest, basic unit of life that is responsible for all of life's processes."

Characteristics of Cells:

Following are the various essential characteristics of cells:

- Cells provide structure and support to the body of an organism.
- The cell interior is organized into different individual organelles surrounded by a separate membrane.
- The nucleus (major organelle) holds genetic information necessary for reproduction and cell growth.
- Every cell has one nucleus and membrane-bound organelles in the cytoplasm.
- Mitochondria, a double membrane-bound organelle is mainly responsible for the energy transactions vital for the survival of the cell.
- Lysosomes digest unwanted materials in the cell.
- Endoplasmic reticulum plays a significant role in the internal organization of the cell by synthesizing selective molecules and processing, directing and sorting them to their appropriate locations.



Functions of Cell:

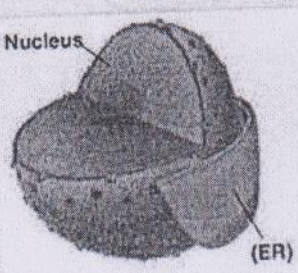
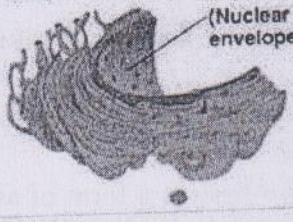
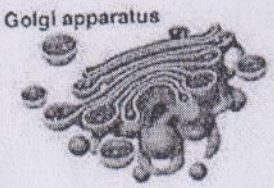
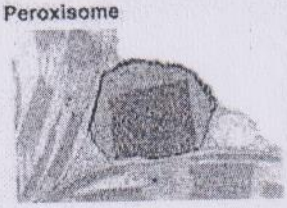
- Provides Support and Structure
- Facilitate Growth Mitosis
- Allows Transport of Substances
- Energy Production
- Aids in Reproduction

Prokaryotic Cell:

- Prokaryotic cells have no nucleus. Instead, some prokaryotes such as bacteria have a region within the cell where the genetic material is freely suspended. This region is called the nucleoid.
- They all are single-celled microorganisms. Examples include archaea, bacteria, and cyanobacteria.
- The cell size ranges from 0.1 to 0.5 μm in diameter.
- The hereditary material can either be DNA or RNA.
- Prokaryotes generally reproduce by binary fission, a form of asexual reproduction. They are also known to use conjugation – which is often seen as the prokaryotic equivalent to sexual reproduction (however, it is NOT sexual reproduction).

Eukaryotic Cells

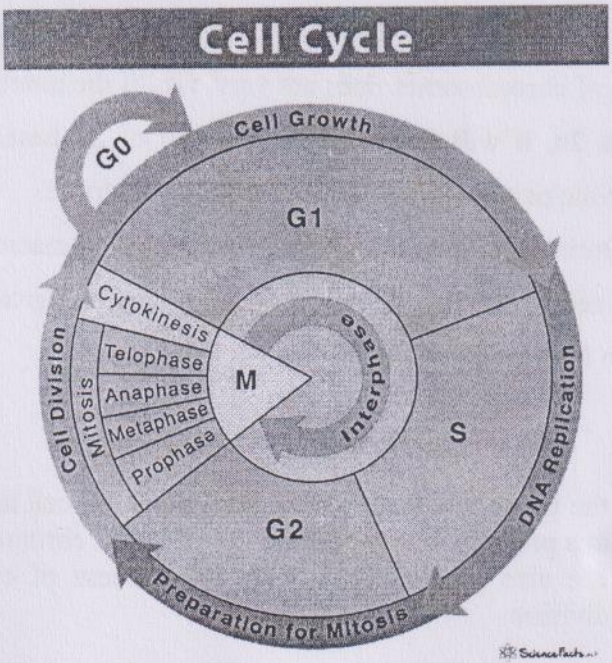
- Eukaryotic cells are characterized by a true nucleus.
- The size of the cells ranges between 10–100 μm in diameter.
- This broad category involves plants, fungi, protozoans, and animals.
- The plasma membrane is responsible for monitoring the transport of nutrients and electrolytes in and out of the cells. It is also responsible for cell to cell communication.
- They reproduce sexually as well as asexually.
- There are some contrasting features between plant and animal cells. For eg., the plant cell contains chloroplast, central vacuoles, and other plastids, whereas the animal cells do not.

	Cell Component	Structure	Function
The eukaryotic cell's genetic instructions are housed in the nucleus and carried out by the ribosomes	Nucleus 	Surrounded by nuclear envelope (double membrane) perforated by nuclear pores. The nuclear envelope is continuous with the endoplasmic reticulum (ER).	Houses chromosomes, made of chromatin (DNA, the genetic material, and proteins); contains nucleoli, where ribosomal subunits are made. Pores regulate entry and exit of materials.
	Ribosome 	Two subunits made of ribosomal RNA and proteins; can be free in cytosol or bound to ER	Protein synthesis
The endomembrane system regulates protein traffic and performs metabolic functions in the cell	Endoplasmic reticulum 	Extensive network of membrane-bound tubules and sacs; membrane separates lumen from cytosol; continuous with the nuclear envelope.	Smooth ER: synthesis of lipids, metabolism of carbohydrates, Ca^{2+} storage, detoxification of drugs and poisons Rough ER: Aids in synthesis of secretory and other proteins from bound ribosomes; adds carbohydrates to glycoproteins; produces new membrane
	Golgi apparatus 	Stacks of flattened membranous sacs; has polarity (*cis* and *trans* faces)	Modification of proteins, carbohydrates on proteins, and phospholipids; synthesis of many polysaccharides; sorting of Golgi products, which are then released in vesicles.
	Lysosome 	Membranous sac of hydrolytic enzymes (in animal cells)	Breakdown of ingested substances, cell macromolecules, and damaged organelles for recycling
	Vacuole 	Large membrane-bounded vesicle in plants	Digestion, storage, waste disposal, water balance, cell growth, and protection
Mitochondria and chloroplasts change energy from one form to another	Mitochondrion 	Bounded by double membrane; inner membrane has infoldings (cristae)	Cellular respiration
	Chloroplast 	Typically two membranes around fluid stroma, which contains membranous thylakoids stacked into grana (in plants)	Photosynthesis
	Peroxisome 	Specialized metabolic compartment bounded by a single membrane	Contains enzymes that transfer hydrogen to water, producing hydrogen peroxide (H_2O_2) as a by-product, which is converted to water by other enzymes in the peroxisome

Cell division:

Cell division is a very important process in all living organisms. During the division of a cell, DNA replication and cell growth also take place. All these processes, i.e., cell division, DNA replication, and cell growth, hence, have to take place in a coordinated way to ensure correct division and formation of progeny cells containing intact genomes. The sequence of events by which a cell duplicates its genome, synthesizes the other constituents of the cell and eventually divides into two daughter cells is termed cell cycle.

Phases of Cell Cycle:



A typical eukaryotic cell cycle is illustrated by human cells in culture. These cells divide once in approximately every 24 hours (Figure). However, this duration of cell cycle can vary from organism to organism and also from cell type to cell type. Yeast for example, can progress through the cell cycle in only about 90 minutes.

The cell cycle is divided into two basic phases:

- Interphase l
- M Phase (Mitosis phase)

Interphase

Also known as the resting phase of the cell cycle; interphase is the time during which the cell prepares for division by undergoing both cell growth and DNA replication. It occupies around 95% time of the overall cycle. The interphase is divided into three phases:-

- G1 phase (Gap 1) – G1 phase is the phase of the cell between mitosis and initiation of replication of the genetic material of the cell. During this phase, the cell is metabolically active and continues to grow without replicating its DNA.
- S phase (Synthesis) – DNA replication takes place during this phase. If the initial quantity of DNA in the cell is denoted as 2N, then after replication it becomes 4N. However the number of chromosomes does not vary, viz., if the number of chromosomes during G1 phase was 2n, it will remain 2n at the end of S phase. The centriole also divides into two centriole pairs in the cells which contain centriole.
- G2 phase (Gap 2) –During this phase, the RNA, proteins, other macromolecules required for multiplication of cell organelles, spindle formation, and cell growth are produced as the cell prepares to go into the mitotic phase.

M phase

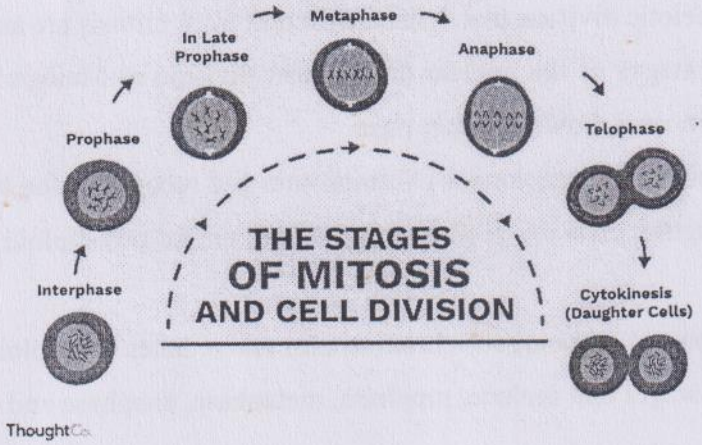
This is the mitotic phase or the phase of the equational division as the cell undergoes a complete reorganization to give birth to a progeny that has the same number of chromosomes as the parent cell. The other organelles are also divided equally by the process of cytokinesis which is preceded by mitotic nuclear division.

The mitotic phase is divided into four overlapping stages:-

1. Prophase,
2. Metaphase,
3. Anaphase, and
4. Telophase

Mitosis: The process by which a eukaryotic cell separates the nuclear DNA and chromosomes and divides into two different but similar sets of nuclei is known as mitosis. The chromosomes are pulled apart by a mitotic spindle, which is a specialized structure consisting of microtubules.

Cytokinesis: In this phase, the cytoplasm of the cell divides. It begins as soon as the mitosis ends. Plant cells are much tougher than animal cells, as they have a rigid cell wall and high internal pressure. Thus, cytokinesis occurs in plant and animal cells differently.



Functions of Mitosis

Following are the two important functions of mitosis:

- Mitosis helps in the development of an organism. In single-celled organisms, mitosis is the process of asexual reproduction.
- Mitosis helps in the replacement of damaged tissues. The cells near the damaged cells begin mitosis when they do not sense the neighboring cells. The dividing cells reach each other and cover the damaged cells.

Significance of Mitosis

- Mitosis is responsible for the development of the zygote into an adult.
- Equal distribution of chromosomes to each daughter cell.
- It is responsible for the growth and development of an individual.
- It maintains the constant number of chromosomes in all body cells of an organism.
- Mitosis is required for asexual reproduction, vegetative propagation in plants and is also responsible for the repair and regeneration of damaged tissues.
- Mitosis helps in maintaining the purity of the genome as no recombination or crossing over takes place.
- It is responsible for the repair and regeneration of old and damaged cells in animals e.g. gut epithelium, blood cells, etc.

MEIOSIS: Sexual reproduction in organisms takes place through the fusion of male and female gametes, the sperm and the egg respectively. Gametes are haploid in nature, i.e., they contain only half the number of chromosomes. This genetic content makes them different from other body cells. Meiosis leads to the formation of haploid cells.

The salient features of meiotic division that make it different from mitosis are as follows:-

- It occurs in two stages of the nuclear and cellular division as Meiosis I and Meiosis II. DNA replication occurs, however, only once.
- It involves the pairing of homologous chromosomes and recombination between them.
- Four haploid daughter cells are produced at the end, unlike two diploid daughter cells in mitosis.

Meiosis 1 separates the pair of homologous chromosomes and reduces the diploid cell to haploid. It is divided into several stages that include, prophase, metaphase, anaphase and telophase.

Meiosis 1 Stages

The different stages of meiosis 1 can be explained by the following phases :

Prophase 1,Metaphase 1,Anaphase 1,Telophase

Phases of Meiosis 1

Meiosis 1 Prophase 1: Prophase I is longer than the mitotic prophase and is further subdivided into 5 substages: leptotene,zygotene,pachytene,diplotene,diakinesis

- The chromosomes begin to condense and attain a compact structure during leptotene.
- In zygotene, the pairing of homologous chromosomes starts a process known as chromosome synapsis, accompanied by the formation of a complex structure called synaptonemal complex. A pair of synapsed homologous chromosomes forms a complex known as bivalent or tetrad.
- At pachytene stage, crossing over of non-sister chromatids of homologous chromosomes occurs at the recombination nodules. The chromosomes remain linked at the sites of crossing over.
- Diplotene marks the dissolution of the synaptonemal complex and separation of the homologous chromosomes of the bivalents except at the sites of cross-over. The X-shaped structures formed during separation are known as chiasmata.
- Diakinesis is marked by the termination of chiasmata and assembly of the meiotic spindle to separate the homologous chromosomes. The nucleolus disappears and the nuclear envelope breaks down.

Meiosis 1 Metaphase 1:The bivalents align at the equatorial plate and microtubules from the opposite poles attach to the pairs of homologous chromosomes.

Meiosis 1 Anaphase 1: The two chromosomes of each bivalent separate and move to the opposite ends of the cells. The sister chromatids are attached to each other.

Meiosis 1 Telophase 1: The nuclear membrane reappears and is followed by cytokinesis. This gives rise to a dyad of cells.

Cytokinesis I:The cytoplasm and the cell division result in 2 non-identical haploid daughter cells.

Meiosis II Prophase II

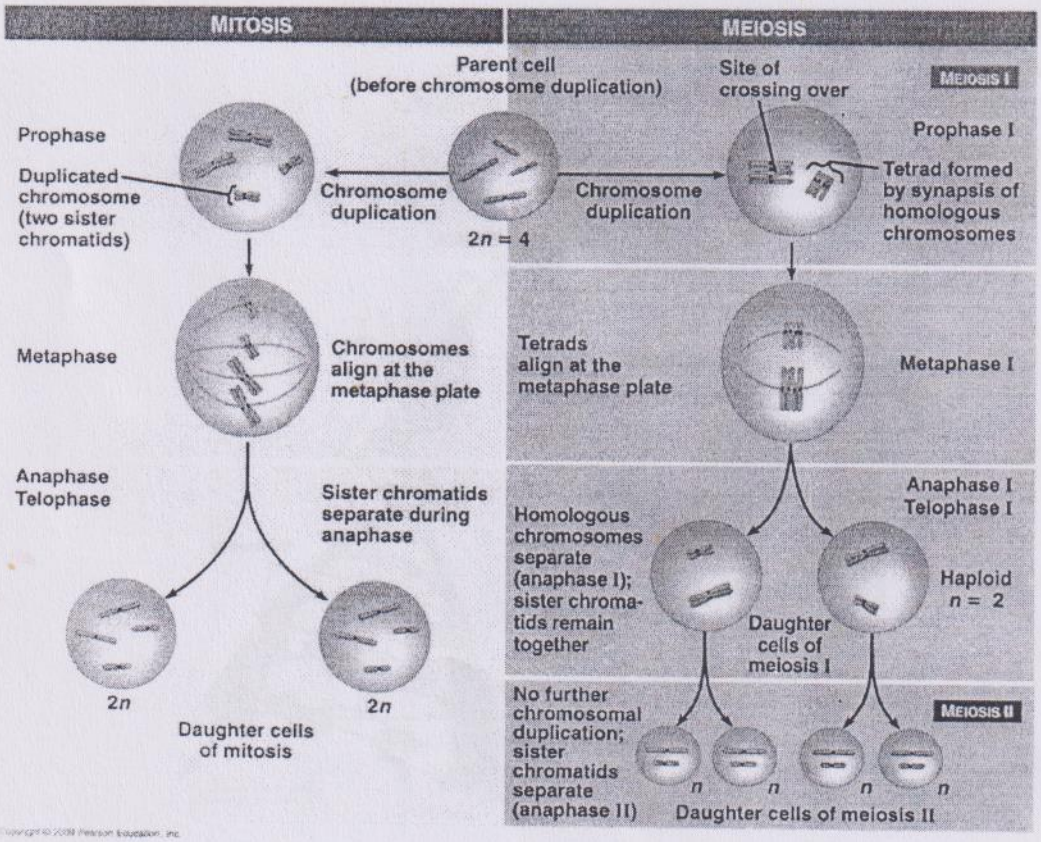
- ☐ The chromatin condenses into chromosomes.
- ☐ Nuclear envelope disintegrates.
- ☐ Centrosomes migrate to either poles.
- ☐ Spindle fibers are reformed.

Metaphase II:The chromosomes align along the equatorial plate. On the contrary, the chromosomes in metaphase I were in homologous pairs.

Anaphase II:Sister chromatids are pulled to the opposite poles.

Telophase II:Nuclear envelope redevelops and the spindle fibres disappear.

Cytokinesis II:The cytoplasm and cell divide producing 4 non-identical haploid daughter cells.



Introduction to Genetics

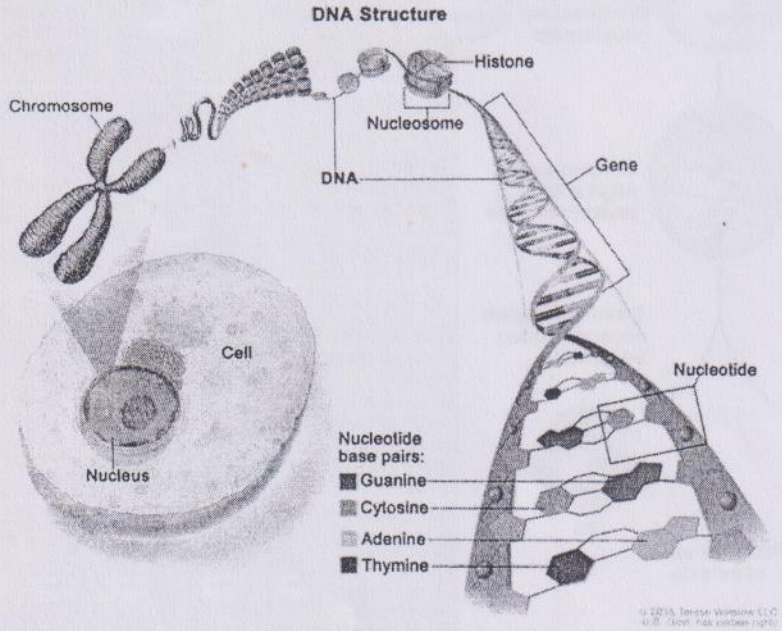
Genetics is the study of how genes bring about characteristics, or traits, in living things and how those characteristics are inherited. Genes are specific sequences of nucleotides that code for particular proteins. Through the processes of meiosis and sexual reproduction, genes are transmitted from one generation to the next.

Augustinian monk Gregor Mendel developed the science of genetics. Mendel performed his experiments in the 1860s and 1870s, but the scientific community did not accept his work until early in the twentieth century. Because the principles established by Mendel form the basis for genetics, the science is often referred to as *Mendelian genetics*. It is also called *classical genetics* to distinguish it from another branch of biology known as molecular genetics.

Variation, as the name suggests is the amount of dissimilarity that exists between children and their parentages. It can be determined to keep in view the behaviouristic, cytological, physiological, and morphological characters of individuals fitting into similar species.

Some of the major reasons that variation are

- Genetic/Chromosomal rearrangement.
- Mutated genes due to the influence of the ecosystem.
- Crossing over.



GENETICS TERMINOLOGY

1. haploid - the condition of having only one set of chromosomes per cell (n)

2. diploid - the condition of having two sets of chromosomes per cell (2n)

3. gamete - a haploid (n) sex cell in plants and animals (egg or sperm)

4. zygote - diploid (2n) cell resulting from the union of two gametes in sexual reproduction

5. chromatin - the complex of DNA, RNA and proteins that makes up uncondensed eukaryotic chromosomes.

6. chromosome - structures within the nucleus of eukaryotic cells composed of chromatin and visible at cell division (condensed chromatin).

7. homologous chromosomes - chromosomes that are similar in morphology (shape and form) and genetic constitution. In animals one set comes from the father and the other from the mother.

8. chromatids - one of the two halves of a duplicated chromosome

9. centromeres - specialized constricted region of a chromatid, that contains the kinetochore; sister chromatids are joined at the centromere during cell division

10. recombination - exchange of genetic material between chromosomes

11. crossover - the breaking and rejoining of homologous (non-sister) chromatids during early prophase I of meiosis, resulting in recombination

12. synapsis - the pairing of homologous chromosomes during prophase I of meiosis.

13. disjunction - separation of homologous chromosomes (or sister chromatids) during anaphase.

14. genotype - the genetic make-up (the assemblage of alleles) of an individual.

15. phenotype - the physical or chemical expression of an organisms genes.

16. gene - a discrete unit of hereditary information that usually specifies a protein; a region of DNA (locus) located on a chromosome that specifies a trait (characteristic).

17.alleles-genes governing variations of the same characteristic (trait) that occupy corresponding positions (loci) on homologous chromosomes; alternative forms of a gene.

18. dominant allele - an allele that is always expressed when present, regardless of whether the organism is homozygous or heterozygous for that gene.

19. recessive allele - an allele that is only expressed when the organism is homozygous for that allele and not expressed when heterozygous (when paired with a dominant allele).

20. homozygous - possessing a pair of identical alleles for a particular locus (gene).

21. heterozygous - possessing a pair of unlike alleles for a particular locus (gene).

22. carrier - a heterozygous individual not expressing a recessive trait but capable of passing it on to its offspring.

23. parent generation (P) - the generation that supplies gametes to the filial generation.

24. filial generation (F,) - the generation that receives gametes from the parental generation.

25. hybrid - an offspring resulting from the mating between individuals of two different genetic constitutions.

26. dihybrid cross - a genetic cross that takes into account the effect of alleles at two separate loci (two different genes).

27. **monohybrid cross** - a genetic cross that takes into account the effect of alleles at a single locus (single gene).

Importance of Genetics

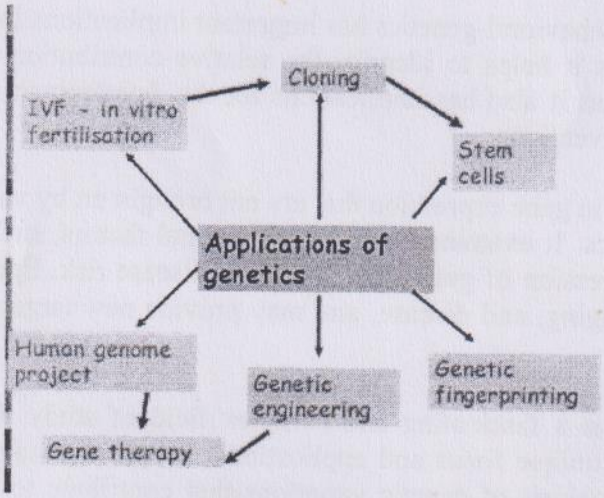
Genetics explains a lot of things about animals, plants and humans like what makes them unique, what makes them different and variable, why do they look like all the other members of their family and why some diseases occur only in plants or animals or humans.

The genetic information can be utilized to diagnose, treat, prevent and cure many diseases in animals, plants and humans. The genes can be better understood as the information, which guide and command the body to make proteins which are need for growth and survival of the organism. Geneticists identify and recognize the importance of these proteins for the betterment of human life with effective medicines and treatments.

Genetic experts can trace and work out family relationships and ancestors by studying the differences in DNA. The common ailments like asthma, diabetes etc., requires the involvement of many different genes. The identification of genetic influences and their interactions with various other factors can help in bringing great advancements in medical research.

Scientists have decoded the genomes of humans and various other plants and animals. This decoding would help in improving the yield, selecting better traits, producing disease resistant varieties which are the need of the hour to feed ever growing human population. Humans have about 24,000 different genes each made up a few hundred to a few thousand base pairs of DNA. All these genes are contained in 23 pairs of chromosomes, each of which carry thousands of different genes and millions of base pairs of DNA. When these genes are altered, there would be a direct effect on the synthesis of the corresponding proteins and consequently this will lead to diseases.In recent years the advances in the field of biotechnology has created genetically engineered strains of bacteria and fungi that carry specific genes from unrelated organisms. These microbes produce useful compounds as insulin, human growth hormone, antiviral and anticancer agents. There are many moral dilemmas associated with genetic disease identifications and treatment. An estimated 8 percent of our population survives with severe physical/mental genetic disorders. This percentage may increase with the increasing population. And it will certainly increase the financial burden on human society.

Finally, the information of genetic mechanisms has made us aware of some new dangers too. Some genetic experts fear there may be an accidental release of artificial pathogens from labs which may cause great disaster. Also some genetic experts fear that increased exposure of plant or animal products to the chemicals may bring about undesirable and haphazard outcomes. Anyways, modern genetic experts have revolutionized agriculture, horticulture, animal husbandry, philosophy, sociology, law, ecology and many other branches of biology. Moreover the science of genetics has helped in removing many faulty concepts of inheritance.



Molecular genetics

The study of the molecular makeup and operation of genes is known as molecular genetics. It examines the chemical and physical properties of DNA, RNA, and proteins that make up the genetic code. The field of molecular genetics has revolutionized our understanding of genetics by enabling researchers to manipulate genes and create genetically modified organisms. It has also led to the development of new technologies, such as genetic engineering and gene therapy, which have the potential to treat genetic diseases.

Population genetics

Population genetics is the study of genetic variation and evolution within populations. It examines how genes are distributed and change over time in response to various factors, such as mutation, migration, natural selection, and genetic drift. Population genetics is important in understanding the genetic basis of complex traits and diseases, such as diabetes, cancer, and cardiovascular disease. It also has implications for conservation biology, as it helps to identify endangered populations and preserve genetic diversity.

Genomics

Genomics is the study of the entire set of genes in an organism, known as the genome. It includes the analysis of gene structure, function, and expression, as well as the identification of genetic variations that are associated with diseases. Genomics has led to significant advances in medicine, such as the development of personalized medicine and the identification of new drug targets. It has also revolutionized our understanding of human evolution, by providing insights into our ancestral history and the genetic differences between populations.

Medical genetics

Medical genetics is the study of the genetic basis of human diseases. It includes the diagnosis, treatment, and prevention of genetic disorders, such as cystic fibrosis, sickle cell anemia, and Huntington's disease. Medical genetics also involves genetic counseling; which helps individuals and families understand the risks and implications of inherited genetic conditions. Medical genetics is a rapidly advancing field, with new genetic tests and therapies being developed every day.

Behavioral genetics

Behavioral genetics is the study of the genetic and environmental factors that influence human behavior. It examines the role of genes in various behavioral traits, such as intelligence,

personality, and mental health. Behavioral genetics has important implications for understanding the nature vs. nurture debate, as it helps to identify the relative contributions of genetic and environmental factors to behavior. It also has implications for the development of personalized education and mental health interventions.

Epigenetics

The study of heritable variations in gene expression that are not brought on by variations in DNA sequence is known as epigenetics. It examines how environmental factors, such as diet, stress, and toxins, can modify the expression of genes and influence disease risk. Epigenetic changes are important in development, aging, and disease, and may provide new targets for therapeutic intervention.

In conclusion, human genetics is a fascinating and complex field of study that encompasses various branches, each with its unique focus and applications. From the study of the structure and function of genes to the analysis of genetic variations that contribute to human diseases, human genetics has led to significant advances in medicine, biology, and technology. Understanding the different branches of human genetics is essential to appreciate the broad scope of genetics research and its impact on our lives.

Faculties Incharge

Programme Coordinator

Department of Life Sciences
IADCA

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFE SCIENCES- GENETICS
EVALUATION MARKS, AUGUST 2023 Max.Marks: 20

Sl.No	Name	Marks
1.	Abdul Rayan J	16
2.	A Gagan	16
3.	Aliya Shariff	16
4.	Aishwarya K	10
5.	Jayapradeepa	16
6.	Kushal Kumar S	16
7.	Ligodi Divine	06
8.	Mohammed Zaki W	16
9.	M Rahul Krishna	20
10.	Nithin H	10
11.	Prabas H	11
12.	Sana Hayath	10
13.	Shaziya Afreen	15
14.	Sudheer H	11
15.	Umme Asma G	10
16.	Venkata Raju	10

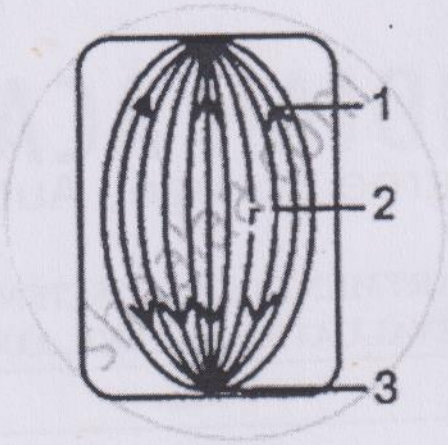
Faculty Incharge

Department of Life Sciences IADCA

Programme Coordinator

Program Coordinator - Genetics
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

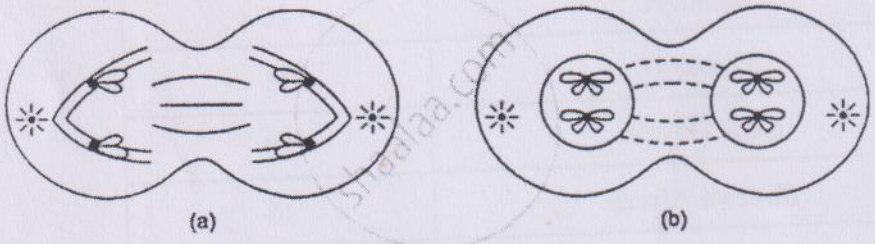
Identify the stages below (3+2=5m)



1. Is it an animal cell or plant cell?
2. Label the parts 1-3
3. Which stage of mitosis is it?

ANSWER:
1. plant cell,
1- chromatid ,2- spindle fibres, 3- Aster
3- Anaphase

1. Which stages of meiosis is it?



ANSWER: A- Anaphase I, B- Telophase I

EVALUATION TEST

MCQ (1x5= 5m)

1. Binary fission refers to the process by which
A. the nucleus of a cell splits just prior to cytokinesis.
B. most plant and animal cells reproduce.
C. bacteria and other cells lacking a nucleus reproduce.
D. a cell duplicates its DNA.

ANSWER: A

2. The cell cycle can be described as
A. chaotic and composed of various phases that are virtually indistinguishable when viewed through a microscope.
B. identical in every kind of cell.
C. a sequence of events that continues constantly in all cells.
D. a pattern of distinct phases in a cell regulated by proteins.

ANSWER: D

3. Interphase collectively refers to
A. mitosis and cytokinesis.
B. G0 and the restriction point.
C. G1, S-phase, and G2.
D. DNA synthesis and G0.

ANSWER: C

4. All cells that make up mammalian tissues continue to divide at a constant rate until cellular death.
A. true
B. false

ANSWER: B

5. Mitosis is a type of cell division.
A. true
B. false

ANSWER: B

MATCH THE FOLLOWING (5+2=7m)

Column I	Column II
1. Mitochondria	(a) Cell
2. Functional unit of life	(b) Nucleus
3. Control unit of cell	(c) Unicellular
4. Single-celled organism	(d) Discovery of cell
5. Robert Hooke	(e) Power house of a cell
6. Combination of tissues	(f) Transfers messages
7. Cytoplasm	(g) Jelly-like substance
8. Nerve cell	(h) Forms organ
9. Living substance in the cell	(i) Cell wall
10. Outermost thick layer in plant cells	(j) Protoplasm

ANSWER: 1-E,2-A,3-B,4-C,5-D,6-H,7-G,8-F,9-J,10-I

1. Match the terms in column I with their explanations in column II

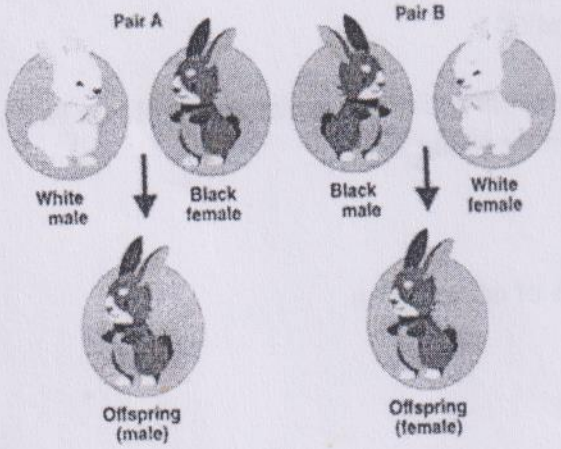
Column I (Term)	Column II (Explanation)
a. Genetics	(i) Chromosomes similar in size and shape
b. Autosomes	(ii) The alternative forms of a gene
c. Recessive gene	(iii) Study of laws of inheritance of characters
d. Allele	(iv) A gene that can express when only in a similar pair

ANSWER: A-iii,B-i,C-iv,D-ii

ANSWER THE FOLLOWING (2+1=3m)

2. Among lion, tiger and domestic cat, all the three have the same number of 38 chromosomes, yet they have different appearances. How do you account for such differences?

2. Two pairs (A and B) of rabbits were crossed as given below:



(a) Can you tell which coat colour (black or white) is dominant?

ANSWER: Dominant

REGISTER OF ATTENDANCE & FEES

NAME OF THE INSTITUTE : Foundation Courses

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10
			1/8	1/8	1/8	3/8	3/8	3/8	5/8	5/8	5/8	5/8
1		Abdul Rayan J.	1	2	3	4	5	6	7	8	9	10
2		A Gagan	1	2	3	4	5	6	7	8	8	10
3		Aliya Shariff	1	2	3	4	5	6	7	8	9	10
4		Aishwarya K.	1	2	3	4	5	6	6	7	8	9
5		Jaya Pradeepa	1	2	3	4	5	6	7	8	9	10
6		Kushal Kumar S.	1	2	3	4	5	6	7	8	9	10
7		Ligadi Divine	1	2	3	4	5	6	7	8	9	10
8		Mohammed Zaki W	1	2	3	4	5	6	7	8	9	10
9		M Rahul Krishna.	1	2	3	4	5	6	7	8	9	10
10		Nitin H.	1	2	3	4	5	6				
11		Prabhas H.	1	2	3	4	5	6	7	8	9	10
12		Sana Hayath.	1	2	3	4	5	6	7	8	9	10
13		Sut Shaziya Afreen.	1	2	3	4	5	6	7	8	9	10
14		Sudheer H.	1	2	3	4	5	6	7	8	9	10
15		Ummea Asma G.	0	0	0	1	2	3	4	5	6	7
16		Venkata Raju.	1	2	3	3	3	3	4	5	6	7
17		Razi							1			

Number present M
Daily E

Initials M
Daily E

No. on roll at the begining of month. Admitted during the month. Left No. on Roll at end of mo

Coordinator - Genet
Department of Life Sciences
Degree College - Au
Bangalore - 560043

INDIAN ACADEMY

Degree College - P U College
Centre for Research & P G Studies
Hennur Cross, Hennur Main Road, Kalyan Nagar, Bangalore - 560 043.
Tel/Fax : 25442370, 25444103

Marks Obtained: 20

Max. Marks: 25

Examiner's Signature: CW

Invigilator's Signature

Register No.: No. 12957

Name of the Candidate: M. Rahul Krishna

Class & Section: B.Sc Gr-B.T (Hons)

Subject: Genetics

TEST / EXAMINATION

Date: 12/Aug/2023

INSTRUCTIONS :
1) Answer neatly and legibly on both sides of the paper.
2) Score out all rough work.
3) Draw diagrams and sketches wherever necessary.
4) Fasten all the sheets securely.

1) (A) The nucleus of a cell splits just prior to cytokinesis ✓

2) (D)

3) (C) G1, S-phase & G2 (5)

4) (B) False ✓

5) (A) True ✓

→ Match the following

1. – (e) Power house of a cell
2. – (a) Cell
3. (b) Nucleus
4. – (c) unicellular (5)
5. (d) Discovery of cell
6. (h) Forms organ
7. (g) Jelly-like substance

8. (F) Transfere message

9. (j) Protoplasm

10 - (i) Cell wall

→ Match the following :-

a. - (iii) Study of laws of inheritance of characters
b. - (i) Chromosome similar in shape & size.
c. - (iv) A gene that can express only in a similar pair
d. - (ii) alternative forms of a gene

→ Answer the following

1) lion, tiger and domestic cat, all three have the same nuber of chromosomes that is 38 but they have different genes that code for their morphological and induce variations.

2) Black coat colour is dominant.

→ Identify the stage

1. Plant cell

2. 1 - ~~Spindle fibre~~ Chromatin materia
   2 - Spindle fibre
   3 - Pole (microtubule apparatus) (3)

3. Anaphase

B) 1. which stage of meiosis is it ?

(a) Anaphase - I

(b) Telophase - I (2)

INDIAN ACADEMY

Degree College - P U College
Centre for Research & P G Studies

Hennur Cross, Hennur Main Road, Kalyan Nagar, Bangalore - 560 043.
Tel/Fax : 25442370, 25444103

Marks Obtained 16
Max. Marks 20
Examiner's Signature
Invigilator's Signature UV

Register No. No. 12780
Name of the Candidate ZAKI. W
Class & Section B.Sc GIBt Hon.
Subject GENETICS
TEST / EXAMINATION
Date : 12/8

INSTRUCTIONS :
1) Answer neatly and legibly on both sides of the paper.
2) Score out all rough work.
3) Draw diagrams and sketches wherever necessary.
4) Fasten all the sheets securely.

16/20

MCQ

1. A ✓
2. C ✗ d
3. B ✗ C
4. B ✓
5. A ✗ B

(2)

Match the following

1. e ✓
2. a ✓
3. ✓
4. c ✓
5. d ✓
6. h ✓
7. g ✓
8. f ✓
9. ~~j~~ ✓
10. i ✓

(5)

a) iii ✓
b) i ✓
c) iv ✓
d) ii ✓

(2)

Answer the following

1) Lions, tigers & domestic cats have same number of 38 chromosomes but they have different appearances since they inherit different types of genes which code for their difference in feature Although they are closely related they have different genetic material to account for their difference and their genes are placed differently on the chromosomes. (2)

2) Black coat is dominant. ✓ (1)

Identify

1. Plant cell. ✓
2. 1) ~~Nuclear~~ Chromatid
   2) ~~Chromatin~~ fibre Spindle fibre
   3) Pole Aster ✓
3. ~~Anaphase~~ Metaphase. ✗ Anaphase

(2)

1. a) ~~Metaphase~~ Anaphase ✗
   b) Telophase ✗

(2)

INDIAN ACADEMY

Degree College - P U College
Centre for Research & P G Studies

Hennur Cross, Hennur Main Road, Kalyan Nagar, Bangalore - 560 043.
Tel/Fax : 25442370, 25444103

Marks Obtained: 15

Max. Marks: 20

Examiner's Signature

Invigilator's Signature

Register No.

No. 12959

Name of the Candidate .... Jayapradeepa. S

Class & Section .... BSC - GBT

Subject .... Genetics

TEST / EXAMINATION

Date : 12/08/23

INSTRUCTIONS :
1) Answer neatly and legibly on both sides of the paper.
2) Score out all rough work.
3) Draw diagrams and sketches wherever necessary.
4) Fasten all the sheets securely.

1) A ✓
2) C ✗ d
3) B ✗ C
4) B ✓
5) A ✗ B

II · Match

a) 1 - e ✓
b) 2 - a ✓
c) 3 - b ✓
d) 4 - c ✓
e) 5 - d ✓
f) 6 - h ✓
g) 7 - g ✓
h) 8 - f ✓
i) 9 - ~~g~~ j ✗
j) 10 - i ✓

(3)

III · Match

1) a - iii ✓
2) b - i ✓
3) c - ii ✓
4) d - ii ✓

(2)

IV.

1) The difference in gene can be occured with the help of environment atmosphere and the food it consume. Even though lion, tiger and domestic cat have the same number of chromosomes yet they have different appearances due to Variation. (1½)

2) a) Black coat colour is dominant (1)

V.

1. Plant cell
2. ① chromatids ② Spindle fibre ③ Pole (3)
3. Anaphase

3)

a) Meiosis - II

Anaphase - I

b) Meiosis - II

Telophase - I (2)

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biochemistry

BRIDGE Course

for I Semester BSc (BCMB)

Batch: 2023-2027

(Academic year 2023-24)

Department of Life Sciences IADCA

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biochemistry

Bridge Course for I Semester BSc

(Academic year 2023-24)

Student list

(BCMB combination)

Sl. No.	Name of student
1	Arpan Patra
2	Deekshaswini N
3	Joyce Christy S
4	Malathi R
5	Nichenametla Sai Keerthana
6	Pavithra K

Faculty signature

Program Coordinator

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biochemistry

Bridge Course for I Semester BSc (Academic year 2023-24)

Name of student :

Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 marks. **(10x2=20M)**

1. Which of the following are prokaryotic cells?
   a) fungi
   b) bacteria
   c) plants
   d) animals

2. The number of protons and neutrons in the nucleus of an atom is collectively referred to as
   a) atomic number
   b) atomic mass
   c) molecular formula
   d) valency

3. Biological catalysts which serve to increase rates of reactions are called
   a) Proteins
   b) Vitamins
   c) Enzymes
   d) Hormones

4. How many bonding electrons is present in outermost shell of Carbon atom?
   a) 2
   b) 4
   c) 6
   d) 1

5. Which of the following is not found in a prokaryotic cell?
   a) cell wall
   b) endoplasmic reticulum
   c) plasma membrane
   d) ribosomes

6. The classification or grouping of living organisms is called
   a) Systematics
   b) Taxonomy
   c) Morphology
   d) Palaeontology

7. Isotopes of sister atoms of the same element have similar chemical properties and different
   a) atomic number
   b) atomic mass
   c) atomic volume
   d) atomic structure

8. A solution which maintains a constant pH when small amounts of acid or base are added is a
   a) alkali
   b) salt solution
   c) strong acid
   d) buffer

9. pH value less than 7 indicates that the given solution is
   a) neutral
   b) acidic
   c) basic
   d) amphoteric

10. The biological function of chloroplasts in plant cells is
   a) Digestion
   b) Nitrogen fixation
   c) Photosynthesis
   d) ATP generation

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biochemistry

Bridge Course for I Semester BSc (Academic year 2023-24)

Pre-assessment test marks

Sl. No	Name of student	Pre-assessment marks
1	Arpan Patra	12
2	Deekshaswini N	14
3	Joyce Christy S	12
4	Malathi R	12
5	Nichenametla Sai Keerthana	14
6	Pavithra K	18

Faculty signature
(Dr. Suma.T.K.)

Program Coordinator
Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department
HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

6. The findings of biochemistry are applied primarily in which fields
    a) nutrition
    b) medicine
    c) agriculture
    d) all of the above

7. Antibodies are
    a) Proteins
    b) Lipids
    c) Carbohydrates
    d) None of these

8. When an acid is diluted with more and more water, its H+ ion concentration will
    a) increase
    b) decrease
    c) remains the same
    d) depends on the type of acid

9. Which of the following is the sweetest among naturally occurring sugars?
    a) Glucose
    b) Lactose
    c) Starch
    d) Fructose

10. DNA has a unique structure called the
    a) helix
    b) double helix
    c) triple helix
    d) none of the above

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences - Biochemistry

Bridge Course for I Semester BSc (Academic year 2023-24)

Post-assessment test marks and attendance

Sl. No	Name of student	Post-assessment marks	Attendance %
1	Arpan Patra	14	100
2	Deekshaswini N	16	100
3	Joyce Christy S	18	100
4	Malathi R	14	100
5	Nichenametla Sai Keerthana	18	100
6	Pavithra K	18	100

Faculty signature

(Dr. Suma. T.K.)

Program Coordinator

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

18/20 Good!

Department of Life Sciences - Biochemistry

Bridge Course for I Semester BSc (Academic year 2023-24)

Name of student : Pavithra.K

Date :

Pre-assessment test

Time: 20 minutes **Max Marks: 20 marks**

Answer all the questions. Each question carries 2 marks. **(10x2=20M)**

1. Which of the following are prokaryotic cells?
   a) fungi
   b) bacteria ✓ (2)
   c) plants
   d) animals

2. The number of protons and neutrons in the nucleus of an atom is collectively referred to as
   a) atomic number
   b) atomic mass ✓ (2)
   c) molecular formula
   d) valency

3. Biological catalysts which serve to increase rates of reactions are called
   a) Proteins
   b) Vitamins (2)
   c) Enzymes ✓
   d) Hormones

4. How many bonding electrons is present in outermost shell of Carbon atom?
   a) 2
   b) 4 ✓ (2)
   c) 6
   d) 1

5. Which of the following is not found in a prokaryotic cell?
   a) cell wall
   b) endoplasmic reticulum ✓ (2)
   c) plasma membrane
   d) ribosomes

6. The classification or grouping of living organisms is called
   a) Systematics
   b) Taxonomy
   c) Morphology
   d) Palaeontology

7. Isotopes of sister atoms of the same element have similar chemical properties and different
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   b) atomic mass
   c) atomic volume
   d) atomic structure

8. A solution which maintains a constant pH when small amounts of acid or base are added is a
   a) alkali
   b) salt solution
   c) strong acid
   d) buffer

9. pH value less than 7 indicates that the given solution is
   a) neutral
   b) acidic
   c) basic
   d) amphoteric

10. The biological function of chloroplasts in plant cells is
   a) Digestion
   b) Nitrogen fixation
   c) Photosynthesis
   d) ATP generation

INDIAN ACADEMY
Degree College - Autonomous

18/20 Good!

Department of Life Sciences - Biochemistry
Bridge Course for I Semester BSc
(Academic year 2023-24)

Name of student : Joyce Charity. S
Date :

Post-assessment test

Time: 20 minutes **Max Marks: 20 marks**
Answer all the questions. Each question carries 2 mark. **(10x2=20M)**

1. Which of the following organelles is considered the protein factories of the cell?
   a) Nucleus
   b) Endoplasmic reticulum
   c) Ribosomes
   d) Mitochondria

2

2. The type of bonding in which electrons are shared between the two atoms is called
   a) Covalent bonding
   b) Coordinate bonding
   c) Ionic bonding
   d) None of the above

2

3. Which of the following blood cells play a role in immunity?
   a) RBCs
   b) Platelets
   c) Brain cells
   d) WBCs

2

4. The main molecule that stores and carries genetic information between generations is
   a) Protein
   b) DNA
   c) RNA
   d) ATP

2

5. Which of the following is not the function of proteins?
   a) Helps in digesting food
   b) Carries genetic information
   c) Fights against the invading pathogens
   d) Helps in transporting oxygen in the blood

2

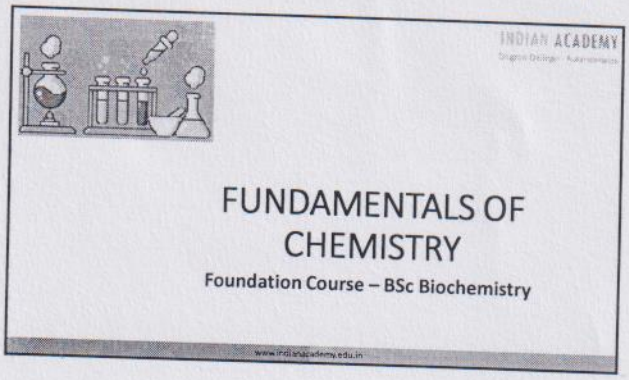
6. The findings of biochemistry are applied primarily in which fields
   a) nutrition
   b) medicine
   c) agriculture
   d) all of the above

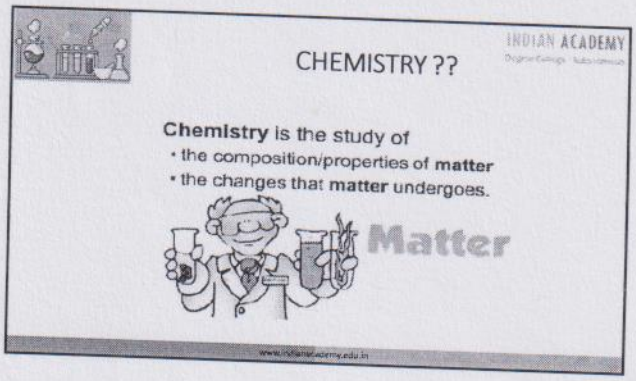
7. Antibodies are
   a) Proteins
   b) Lipids
   c) Carbohydrates
   d) None of these

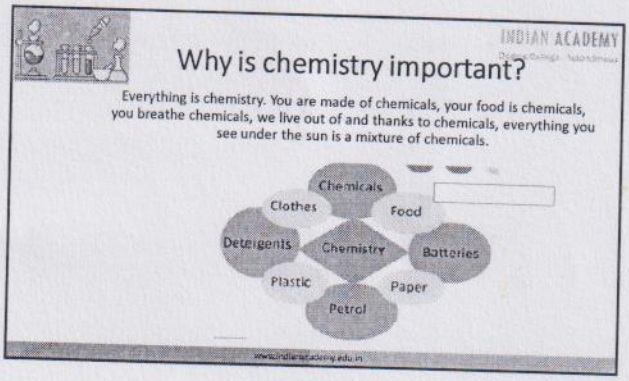
8. When an acid is diluted with more and more water, its H+ ion concentration will
   a) increase
   b) decrease
   c) remains the same
   d) depends on the type of acid

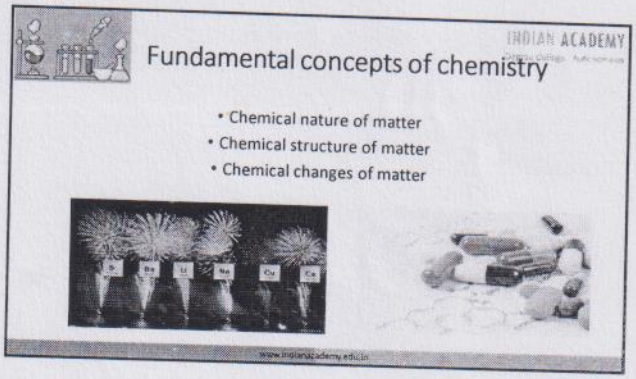
9. Which of the following is the sweetest among naturally occurring sugars?
   a) Glucose
   b) Lactose
   c) Starch
   d) Fructose

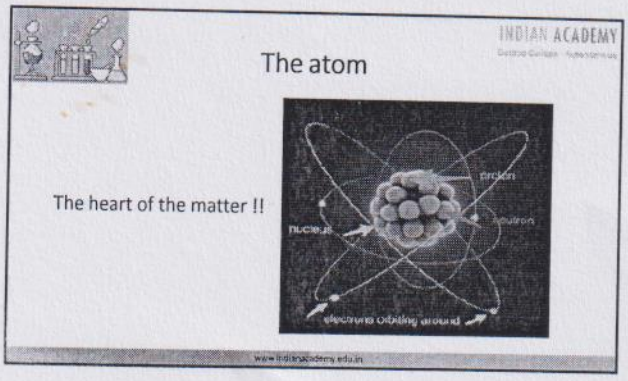
10. DNA has a unique structure called the
   a) helix
   b) double helix
   c) triple helix
   d) none of the above

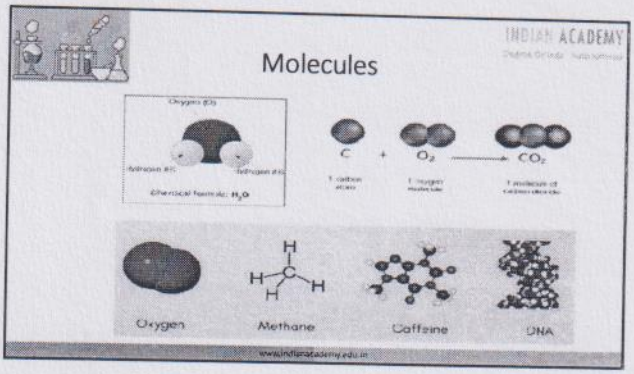






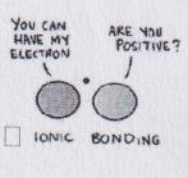




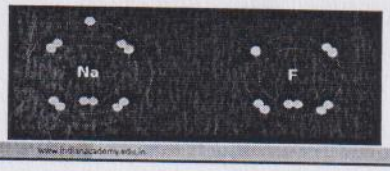


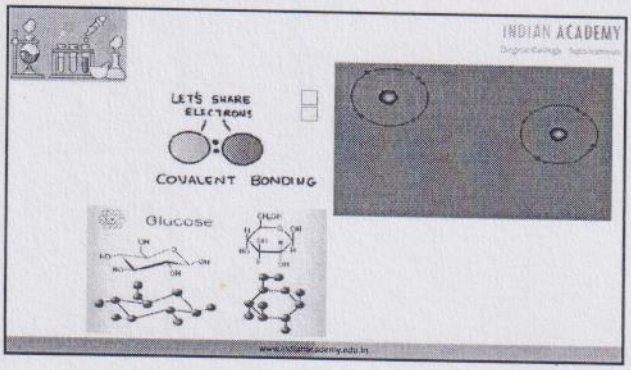
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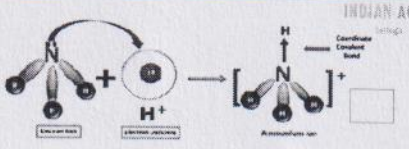
How are molecules formed



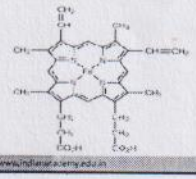
Chemical bonding !!







Coordinate bonding



Hemoglobin

Chemical reactions

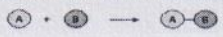




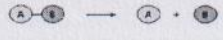
- **Chemical reaction**, a process in which one or more substances, the reactants, are converted to one or more different substances, the products.

Types of Chemical Reactions

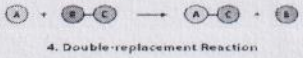
1. Combination or Synthesis Reaction



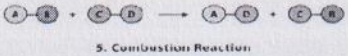
2. Decomposition Reaction



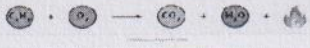
3. Single-replacement Reaction



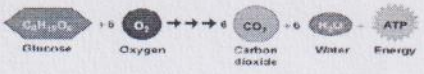
4. Double-replacement Reaction



5. Combustion Reaction



Respiration

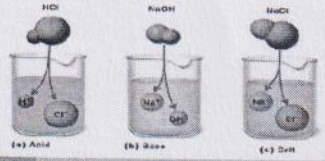


Photosynthesis

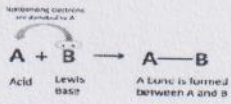


Acids, bases and salts

- Following the original definition by Arrhenius, an acid is a compound that is able to release a hydrogen cation, or proton (H+).
- On the other hand, bases, such as sodium hydroxide (NaOH), can catch protons from water, giving rise to hydroxide anions.







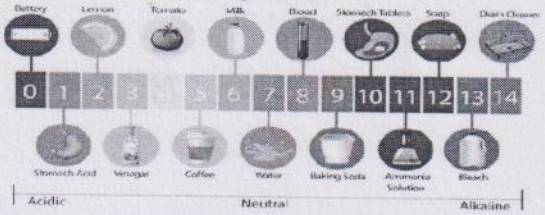
- According to the Lewis theory, an acid is a substance that accepts a lone pair of electrons.
- A base is a substance that donates a lone pair of electrons.

pH

- Relative acidity or basicity of solutions or mixtures is measured using a logarithmic scale called the pH scale.
- It generally goes from 0, most acidic (such as hydrochloric acid solutions), through pH = 7 (considered neutral), up to 14, most basic (such as water solutions of sodium hydroxide).



The pH Scale



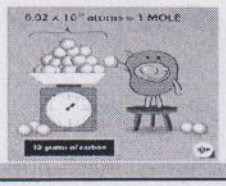
Mole concept

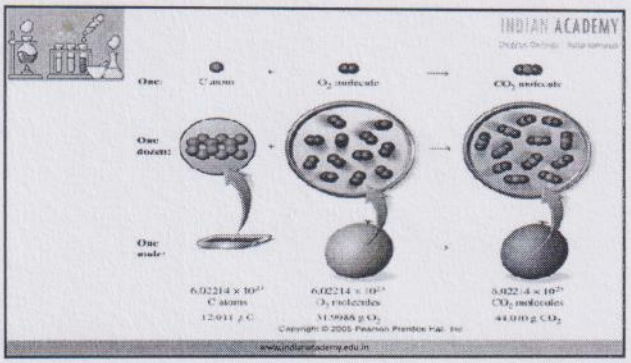
1Dozen = 12 entities

One Mole = 6.022× 10^{23} entities/mole.

Entities – atoms,ions,molecules.

One mole is also known as chemist dozen.







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What is biology

Study of LIFE

Study of living things

More specifically: the scientific study of living organisms and their interactions with the environment



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Characteristics of living organisms

All living organisms share several key characteristics or functions:

- **cellular organization**
- **order,**
- **sensitivity or response to the environment,**
- **reproduction,**
- **growth and development,**
- **regulation,**
- **homeostasis,**
- **heredity and**
- **energy processing.**

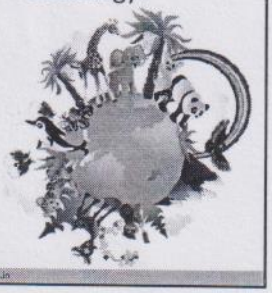
When viewed together, these characteristics serve to define life.



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Why should I know about biology?

All living things on Earth are tied together by common traits and rely on one another for their common survival!





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Branches of biology

SOME of the branches of biology that scientists can specialize in:

- Biochemistry: study of chemistry of life
- Botany: study of plants
- Ecology: study of how organisms interact with each other and their environment
- Cell Biology: study of life on the cellular level
- Genetics: study of heredity
- Zoology: study of animals
- Microbiology: study of microscopic organisms
- Neurobiology: study of the brain



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Unit of life

- A cell is a smallest unit that is capable of performing life function.



- Cell Theory
- All living things are made up of cells.
- Cells are the smallest working units of all living things.
- All cells come from preexisting cells through cell division.

Anton Van Leeuwenhoek

1632-1723

Was a merchant who ground up glass to make lenses





- Invented microscope
- Made over 500 in his lifetime
- The father of microscopy
- First to see and describe bacteria (1674), yeast, plants, the teeming life in a drop of water, and the circulation of blood corpuscles in capillaries.

Robert Hooke

- 1635-1702
- Used Van Leeuwenhoek's microscopes
- Named cells after looking at cork







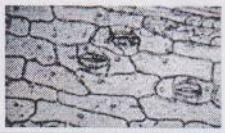


Robert Brown

- 1773-1858
- Scottish botanist
- Discovered the nucleus

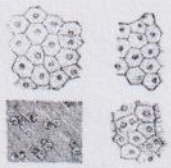






Theodor Schwann

- 1810-1882
- "Cell Theory"
- Discovered that all animals are made up of cells (1839)



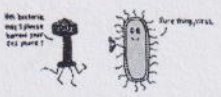


Cellular and acellular life





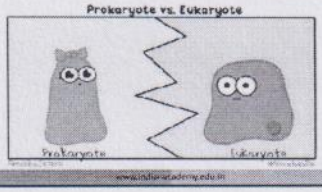
Cellular vs. Acellular Matter.



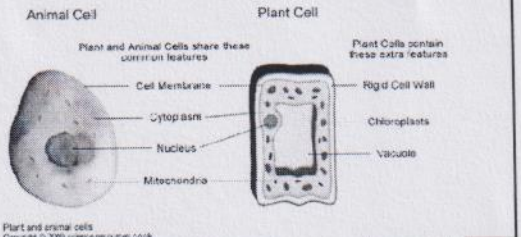
Prokaryotic and eukaryotic cells

- All cells, whether prokaryotic or eukaryotic share these four features namely DNA, Plasma Membrane, Cytoplasm, and Ribosomes.
- The defining characteristic feature that distinguishes between prokaryotic and eukaryotic cell is the nucleus. In prokaryotic cells, the true nucleus is absent.

Prokaryote vs. Eukaryote



Structure of cell



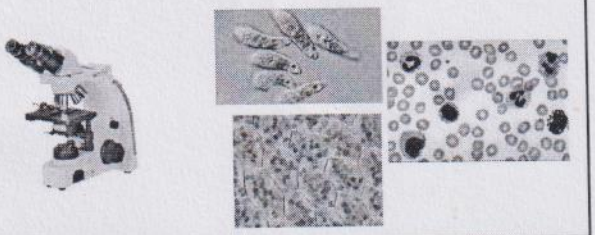
Cell division

- the process by which cells multiply involving both nuclear and cytoplasmic division
- Two types
  - Mitosis
  - Meiosis



- Why Do Cells Divide?
- Cells divide for many reasons. For example, when you skin your knee, cells divide to replace old, dead, or damaged cells.
- Cells also divide so living things can grow. When organisms grow, it isn't because cells are getting larger, cells are dividing to produce more and more cells.

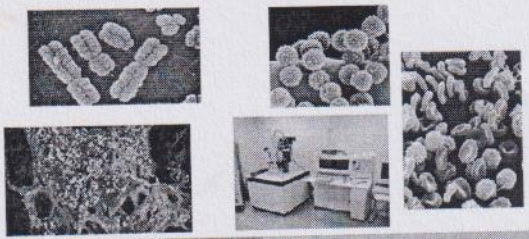
How to study living things Microscopy



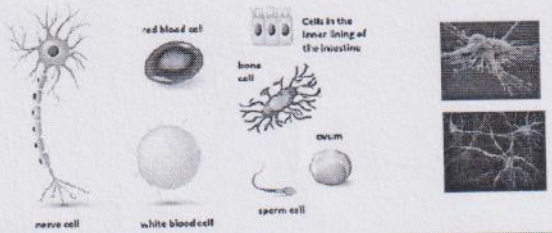
Transmission Electron Microscopy TEM



Scanning Electron Microscope SEM



Diversity of structure and function





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Thirst for knowledge

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- What is happening here ?
- What enters a cell and what doesn't ?
- Are the two things (insulin and glucose) related to each other?
- What is achieved?

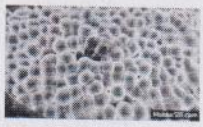


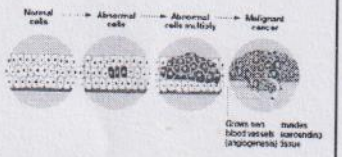
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Example - cancer

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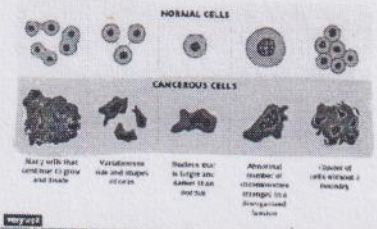
- Cancer is a disease caused when cells divide uncontrollably and spread into surrounding tissues.

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How a cancerous cell is different from a normal cell

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How are cells transformed

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For a normal cell to transform into a cancer cell, it will need

- growth factors that prompt it to grow even when growth is not necessary.
- evade proteins that direct cells to stop growing and die when they become abnormal.
- evade signals from other cells,
- lose the normal "stickiness" (adhesion molecules) that normal cells produce.



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How to approach ??

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- Understanding the many changes a cell undergoes in the process of becoming a cancer cell can help explain some of the complexity.
- Understanding how cancer cells function differently from normal cells lays the foundation for developing treatments designed to rid the body of cancer cells without damaging normal cells.

- How do you understand all these?

- BIOCHEMISTRY

What is biochemistry ?

Study of CHEMISTRY OF LIFE

Study of WHAT HAPPENS CHEMICALLY INSIDE LIVING THINGS





Study of life in its chemical processes

- How chemical reactions happen in cells and how they are controlled
- How proteins, nucleic acids, lipids, and carbohydrates are made and put to work
- How vitamins, minerals and hormones function
- How brain coordinates the functioning of the body
- How heart beats rhythmically for pumping blood ,
- How cells multiply
- How cells differentiate,
- How communication happens within cells
- How communication happens between cells,
- How characters are inherited from parent to offspring
- How a disease starts and develops





What types of molecules do biochemists study?

Principal types of biomolecules

- carbohydrates
- lipids
- proteins
- nucleic acids



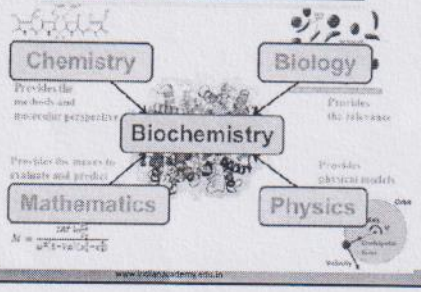


What do biochemists study?

1. Conformation of biomolecules, structure and their relationship to biological activity
2. synthesis and degradation of major metabolites
3. Production and storage of energy
4. Biocatalysts and their application
5. Intercellular communication by hormones
6. Molecular events in gene expression and regulation

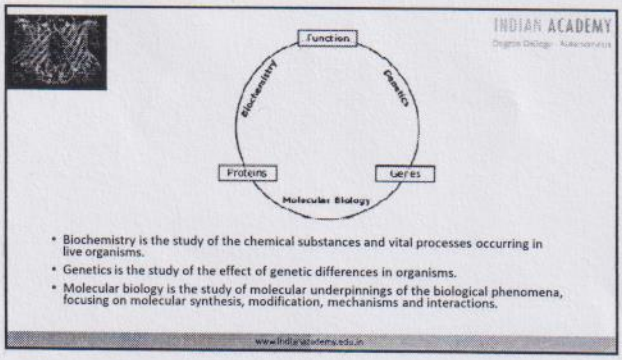


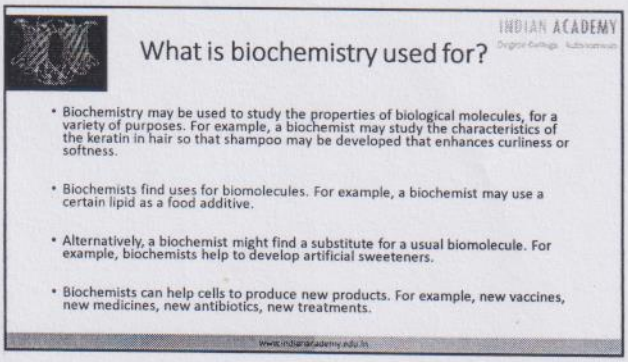
Relation to Other Science Courses

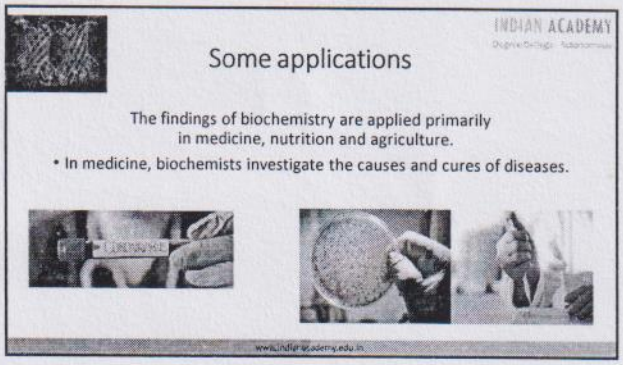


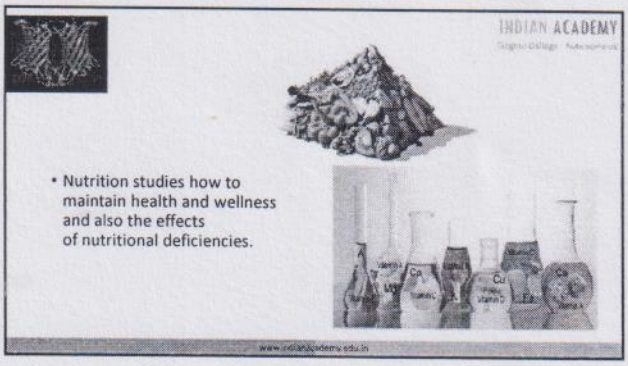
What disciplines are related to biochemistry?

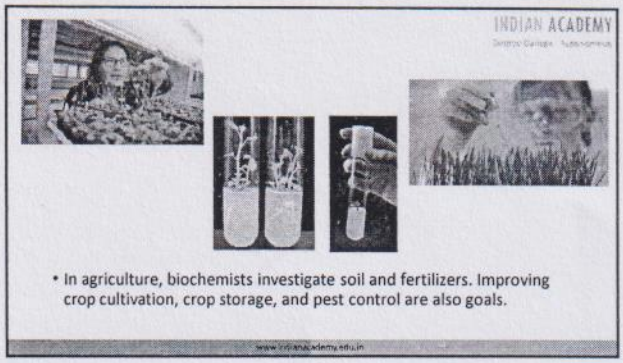
- Biochemistry is closely related to other biological sciences that deal with molecules.
- There is considerable overlap between these disciplines:
  - Molecular Genetics
  - Pharmacology
  - Molecular Biology
  - Chemical Biology

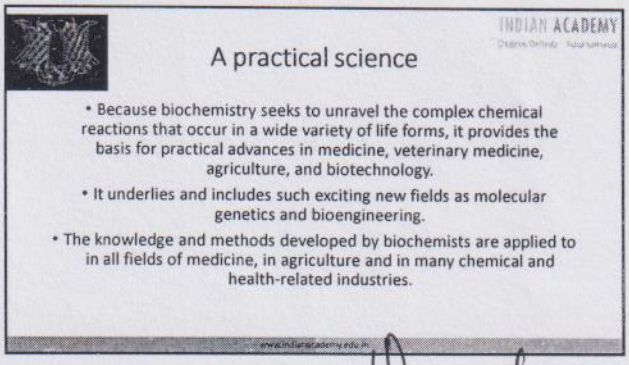












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DEPARTMENT OF LIFE SCIENCES
M.Sc. BIOCHEMISTRY (2023-24 batch)

FOUNDATION COURSE
TIMETABLE – January 2024

w.e.f. 8.1.2024

Day	Date	9.15-10.10	10.15-11.10	11.15-12.10	12.15-1.10
Monday	8.1.2024	Physiology (Dr. Sangeetha)	Techniques (Dr. Suma)	Biomolecules (Dr. E. Venkat)	Chemistry (Dr. Ananda Vardhan)
Tuesday	9.1.2024	Microbiology (Prof. Agna)	Chemistry (Dr. Ananda Vardhan)	Techniques (Dr. Suma)	Biomolecules (Dr. E. Venkat)
Wednesday	10.1.2024	Physiology (Dr. Sangeetha)	Chemistry (Dr. Ananda Vardhan)	Microbiology (Prof. Agna)	Biomolecules (Dr. E. Venkat)
Thursday	11.1.2024	Microbiology (Prof. Agna)	Techniques (Dr. Suma)	Biomolecules (Dr. E. Venkat)	Physiology (Dr. Sangeetha)
Friday	Regular classes				
Saturday	Regular classes				

Program Coordinator
Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous

Department of Life Sciences IADCA

Head of Department
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Department of Life Sciences

M.Sc. BIOCHEMISTRY

FOUNDATION COURSE 2023-24

Foundation courses are designed to increase academic skills and give students a broad understanding (or foundation) of the subject area, as well as building confidence ahead of starting the two year postgraduate degree. Programmes offer learning across a broad range of subjects in life sciences, with a mix of lectures, tutorials, and seminars, sometimes with workshops. A key part of foundation study is to aid new students to work on required academic skills, such as research and analytical skills to help them to bridge the gap between undergraduate and post-graduate study.

Objectives of the course:

The aim and objectives of this foundation course is

- to make all the students revisit the basic concepts of biochemistry
- to understand the importance of biochemistry.
- to make the students know the various fields of Biochemistry and its applications in life science research.

Content

1. Introduction to Chemistry and Biochemistry
2. Introduction to Biomolecules
3. Biochemical analysis and techniques
4. Basic Physiology
5. Basic Microbiology

Teaching methodology:

Power point presentations, videos, quiz, etc.

Learning Outcomes

At the end of this course students will become

- Be familiar with the overview of Biochemistry basic concepts
- understand the scope and importance of Biochemistry
- comprehend the multidisciplinary nature of scientific research and knowledge

Videos related to contents :

https://www.youtube.com/watch?v=pah1flt13fg

https://youtu.be/pah1flt13fg

https://youtu.be/qX_EHn7rnFI

https://youtu.be/URUJD5NEXC8

https://youtu.be/xQiF2ZwI2uo

https://www.youtube.com/watch?v=X9_ppqPmfWE

Total hours: 16 hrs

Faculty names:

1. Dr. Ananda Vardhan H., HoD
2. Dr. Erumalla Venkatanagaraju
3. Dr. Suma. T.K
4. Dr. Sangeetha Annie George
5. Prof. Agna P.K.

Student list: M.Sc Biochemistry, Batch 2023-25

Sl. No.	Student name
1	B M Naveen
2	Devika N
3	Dhanyashree Narayan
4	Jayashree L M
5	Namitha M A
6	Nikhil N
7	Sandhya K
8	Shivpujan S Mishra
9	Shreesha N S
10	Sindhu T
11	Vinutha

Program Coordinator

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY

I Semester
MSc BIOCHEMISTRY

Introduction to Chemistry and Biochemistry

Dr. Ananda Vardhan H.
Head of Department,
Dept of Life Sciences,
IADCA

INDIAN ACADEMY

Organic compounds

- The compounds in solid, liquid or gaseous states which contain carbon in their molecule are known as organic compounds.
- Examples of organic chemicals - gasoline, plastics, detergents, colourants, food additives, natural gas, and drugs, soap and detergent.
- Organic molecules are used in a variety of industries including food, pharmaceuticals, fuels, and building, to name but a few.
- Alkanes include chemical substances such as propane, octane, and methane. These are commonly used as oils for items like gasoline in the car and heating/cooking oil in the home.

INDIAN ACADEMY

Homologous series

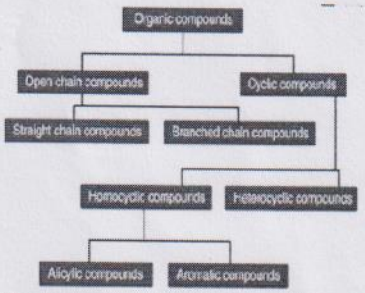
Exemples of homologous groups include:

Homologous series	General formula	Functional group
Alkanes	C_nH_{2n+2}	
Alkenes	C_nH_{2n}	C=C
Alkynes	C_nH_{2n-2}	C≡C
Alkanols	$C_nH_{2n+1}OH$	R – OH
Alkanoic acids	$C_nH_{2n+1}COOH$	R – COOH
Alkanals	$C_nH_{2n+1}CHO$	R – CHO

INDIAN ACADEMY

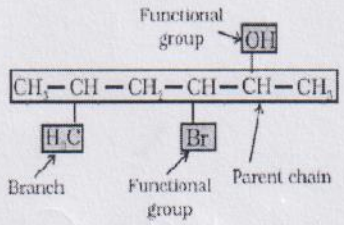
Classification

- There are a large number of organic compounds and therefore a proper systematic classification is required.
- Organic compounds can be broadly classified as acyclic (open chain) or cyclic (closed chain).



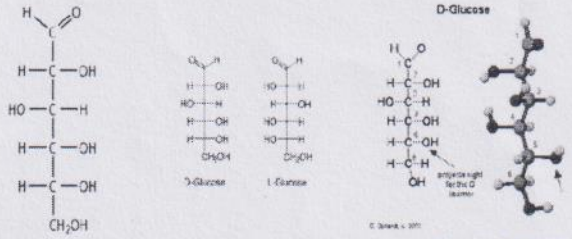
INDIAN ACADEMY

The IUPAC System of Nomenclature



INDIAN ACADEMY

Identify this molecule



2,3,4,5,6– pentahydroxy hexanal

GLUCOSE

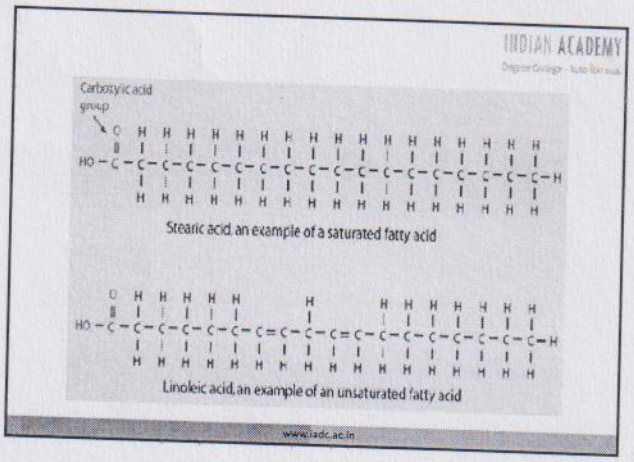
Department of Life Sciences
IADCA

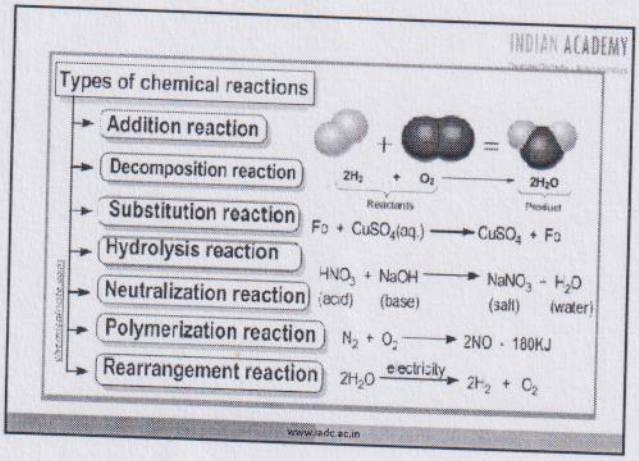
INDIAN ACADEMY

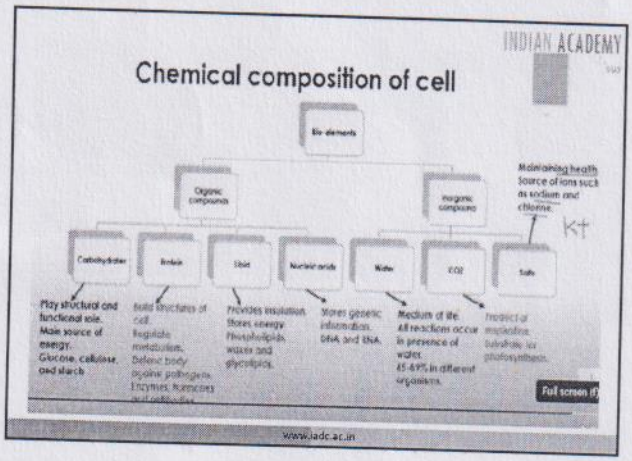
I Semester
MSc BIOCHEMISTRY

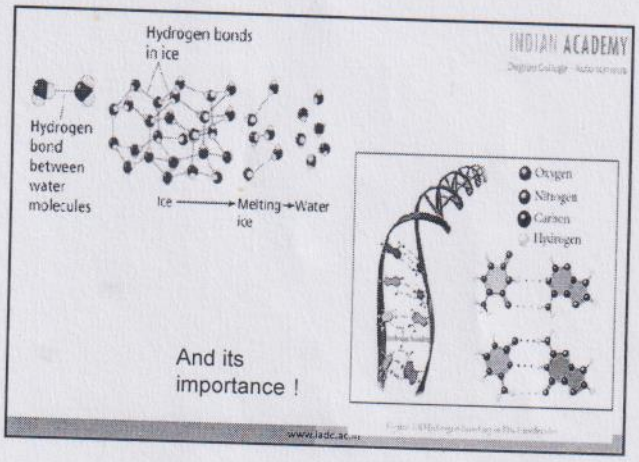
Introduction to Chemistry and Biochemistry

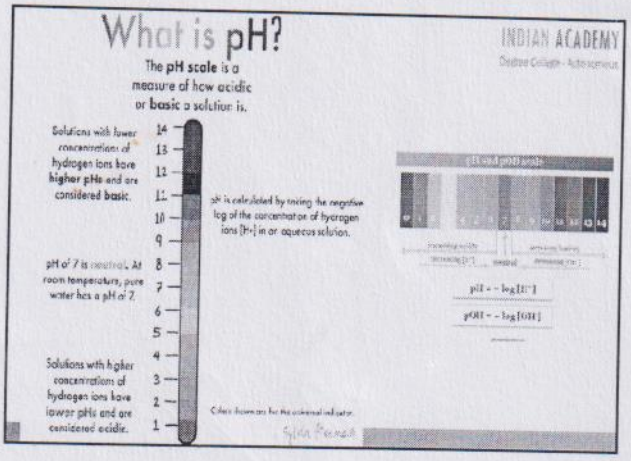
Dr. Ananda Vardhan H.
Head of Department,
Dept of Life Sciences,
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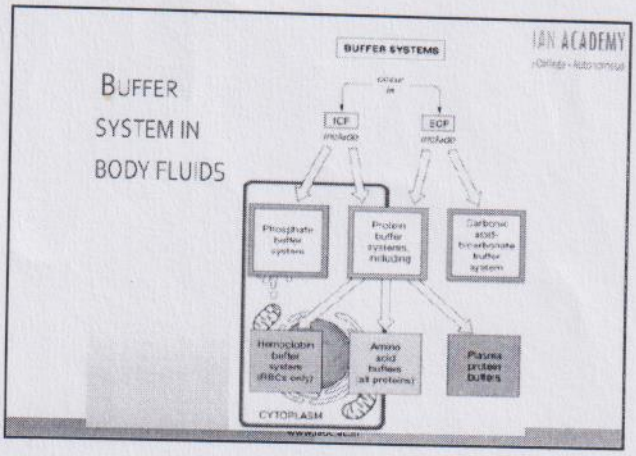

INDIAN ACADEMY
Carboxylic acid group
Stearic acid, an example of a saturated fatty acid
Linoleic acid, an example of an unsaturated fatty acid
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INDIAN ACADEMY
Types of chemical reactions
Addition reaction
Decomposition reaction
Substitution reaction
Hydrolysis reaction
Neutralization reaction
Polymerization reaction
Rearrangement reaction
Reactants
Product
Fe + CuSO4(aq.) → CuSO4 + Fe
HNO3 + NaOH → NaNO3 + H2O
(acid) (base) (salt) (water)
N2 + O2 → 2NO - 180KJ
2H2O → 2H2 + O2
electricity
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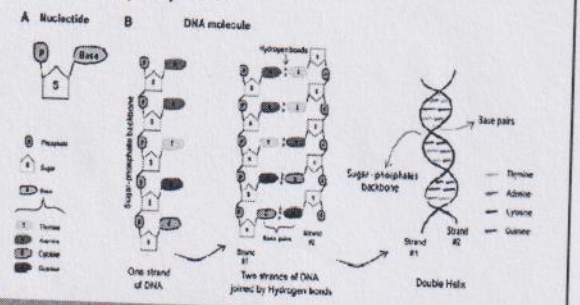

INDIAN ACADEMY
Chemical composition of cell
Bio elements
Organic compounds
Inorganic compounds
Maintaining health
Source of ions such as sodium and chlorine
K+
Carbohydrates
Proteins
Lipids
Nucleic acids
Water
CO2
Salts
Play structural and functional role. Main source of energy. Glucose, cellulose, and starch
Build structures of cell. Regulate metabolism. Defend body against pathogens. Enzymes, hormones
Provides insulation. Stores energy. Phospholipids, waxes and glycolipids.
Stores genetic information. DNA and RNA.
Medium of life. All reactions occur in presence of water. 65-69% in different organisms.
Products of respiration. Substrate for photosynthesis.
Full screen
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Hydrogen bonds in ice
Hydrogen bond between water molecules
Ice → Melting → Water
ice
Oxygen
Nitrogen
Carbon
Hydrogen
And its importance !
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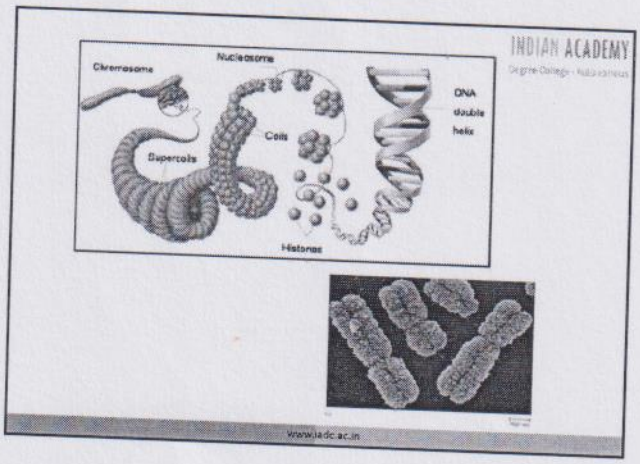

What is pH?
INDIAN ACADEMY
The pH scale is a measure of how acidic or basic a solution is.
Solutions with lower concentrations of hydrogen ions have higher pHs and are considered basic.
pH of 7 is neutral. At room temperature, pure water has a pH of 7.
Solutions with higher concentrations of hydrogen ions have lower pHs and are considered acidic.
14
13
12
11
10
9
8
7
6
5
4
3
2
1
pH is calculated by taking the negative log of the concentration of hydrogen ions [H+] in an aqueous solution.
pH = - log[H+]
pOH = - log[OH-]


BUFFER SYSTEMS
IAN ACADEMY
BUFFER SYSTEM IN BODY FLUIDS
ICF
ECF
Phosphate buffer system
Protein buffer systems, including
Carbonic acid-bicarbonate buffer system
Hemoglobin buffer system (RBCs only)
Amino acid buffers (all proteins)
Plasma protein buffers
CYTOPLASM

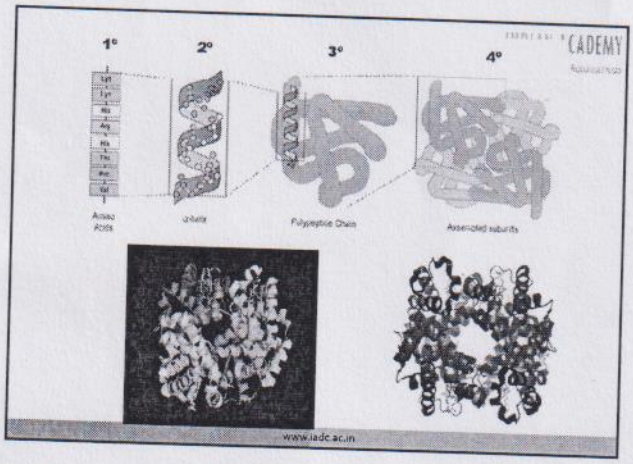
Monomers undergo complex self-assembly to form a polymer



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www.iadc.ac.in

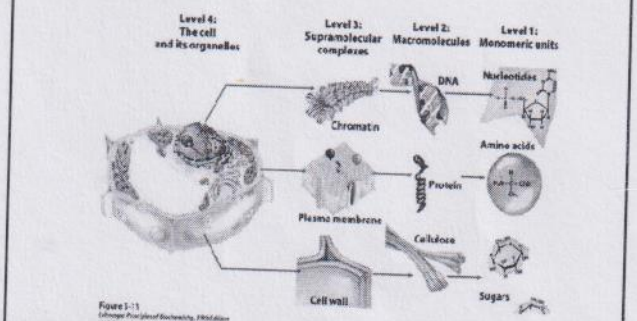


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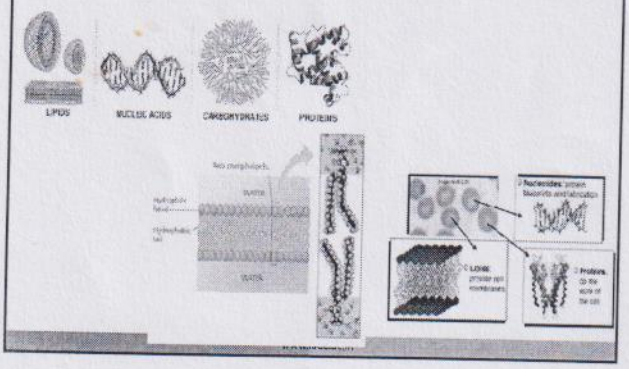
CADEMY
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Structure to molecular hierarchy



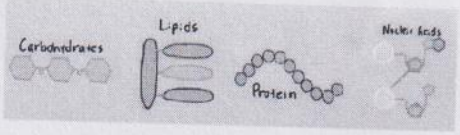
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Biological macromolecules to organelles



INDIAN ACADEMY

Why study macromolecules ?



- Biological macromolecules are essential for life.
- All living things are made up of the basic macromolecules - carbohydrates, lipids, proteins and nucleic acids - put together in a million different ways.
- The complex structure of these biological molecules determines their special properties and functions in the organism.
- To know more about the organisms or rather cells themselves, we need to know about these macromolecules.

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INDIAN ACADEMY

I Semester
MSc BIOCHEMISTRY

BIOANALYTICAL TECHNIQUES

Dr. SUMA T.K.
Assistant Professor,
Dept of Life Sciences,
IADCA

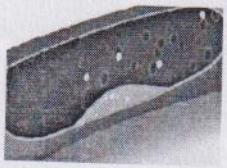
Study of carbohydrates







Study of lipids

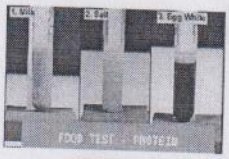






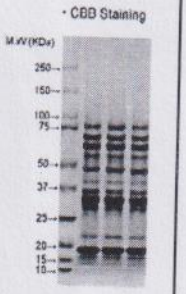


Study of proteins









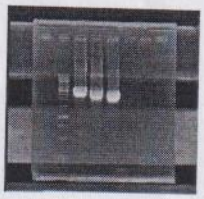




Study of nucleic acids

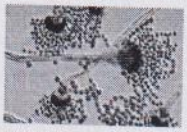






Culture and study of microorganisms



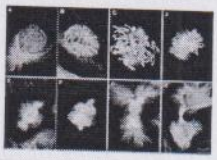



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Animal cell culture

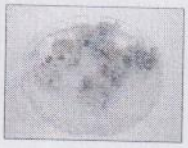






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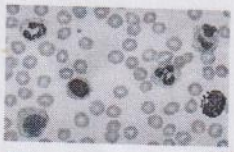
Plant tissue culture

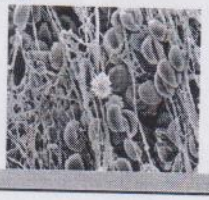






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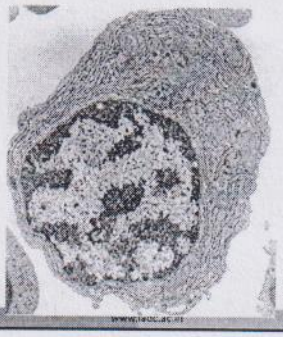
Blood cells under different microscopes





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Can you identify organelles of a eukaryotic cell in this electron micrograph ?



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Identify these images


Virus attacking a cell


Circular DNA molecule


Cells in dividing embryo

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INDIAN ACADEMY

I Semester
MSc BIOCHEMISTRY

HUMAN PHYSIOLOGY

Dr. Sangeetha Annie George
Program Coordinator - Zoology,
Dept of Life Sciences,
IADCA

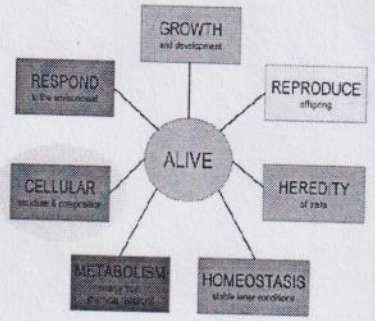
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Physiology is the study of how living things function

It continues beyond the study of anatomy into how parts work, what they do, and why

---

What Makes Something Alive?



For something to be considered alive, it **must** be composed of one or more cells.

How Do We Classify Cells?

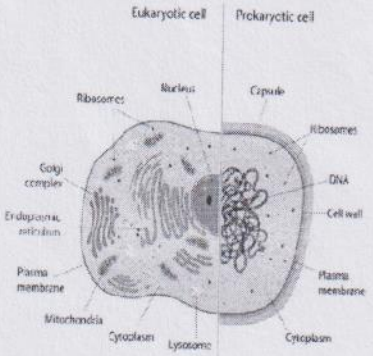
Because cells are the most fundamental unit of life, there are

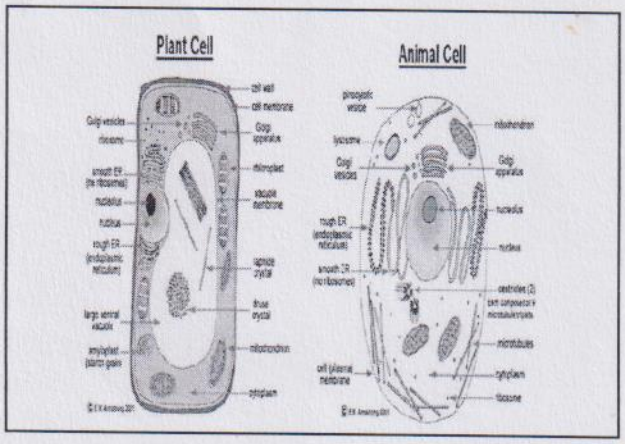
- **Prokaryotic cells vs. eukaryotic cells**
  Does the cell have a nucleus or not?
- **Animal cells vs. plant cells**
  What type of organism is the cell found in? Plant and animal cells have some different internal structures.

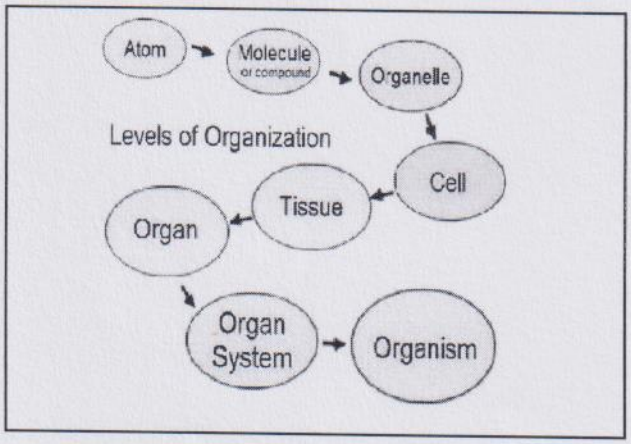
The first thing we'll discuss is the fact that **all living things are made of cells**.

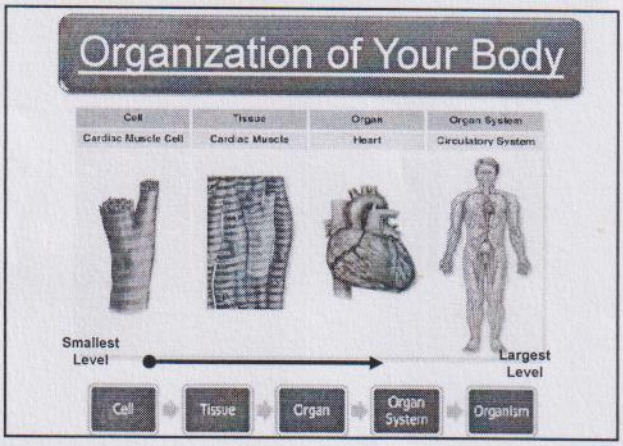
A cell is the smallest unit of life. It is a collection of tiny, functional things enclosed in a membrane.

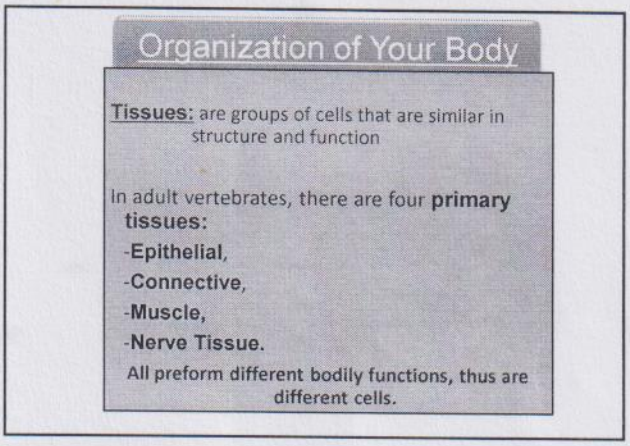


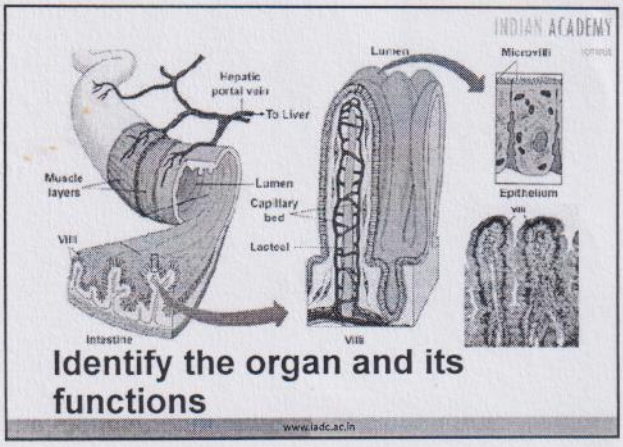


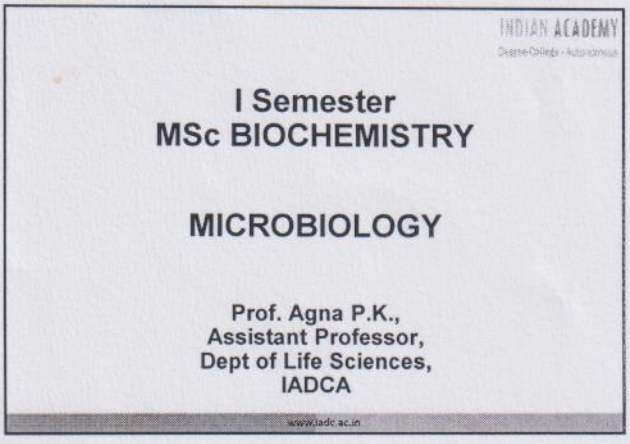

Plant Cell
Animal Cell

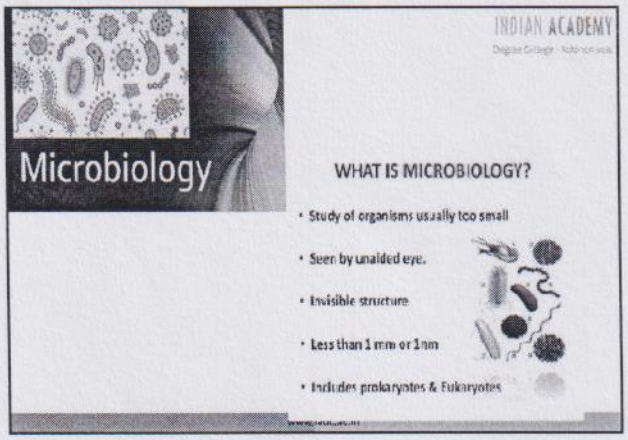

Atom
Molecule
or compound
Organelle
Levels of Organization
Cell
Tissue
Organ
Organ System
Organism

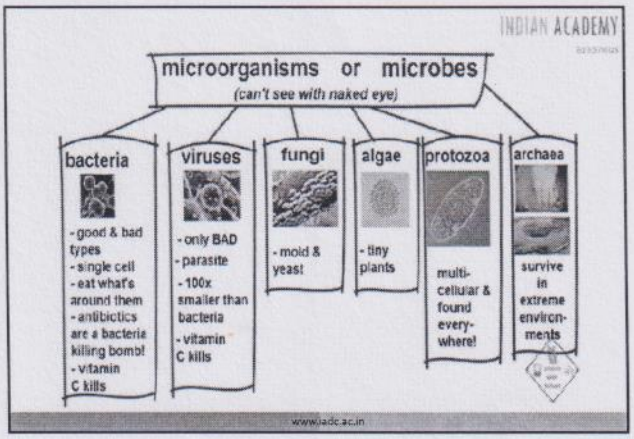

Organization of Your Body
Cell
Tissue
Organ
Organ System
Cardiac Muscle Cell
Cardiac Muscle
Heart
Circulatory System
Smallest Level
Largest Level
Cell
Tissue
Organ
Organ System
Organism

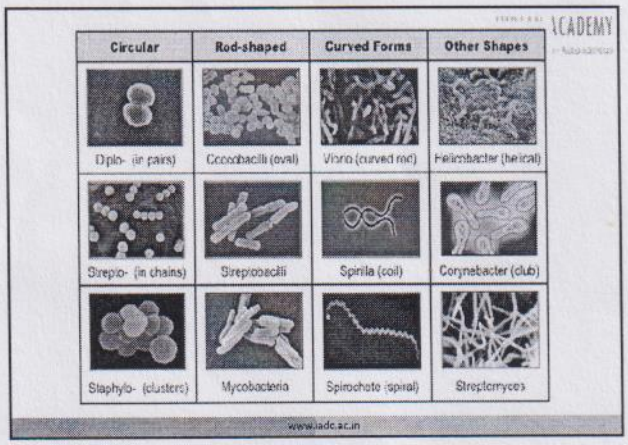

Organization of Your Body
Tissues: are groups of cells that are similar in structure and function
In adult vertebrates, there are four primary tissues:
-Epithelial,
-Connective,
-Muscle,
-Nerve Tissue.
All preform different bodily functions, thus are different cells.

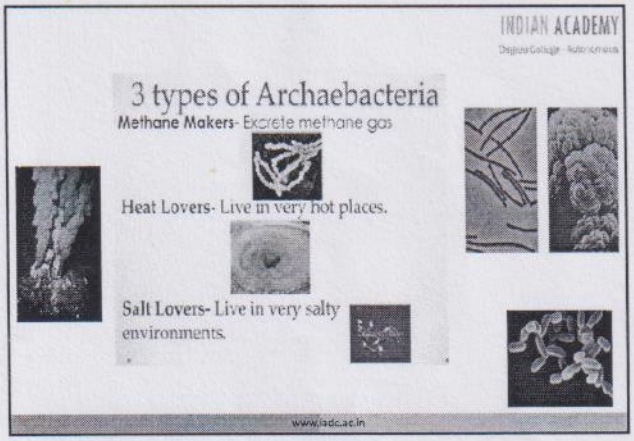

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Hepatic portal vein
To Liver
Muscle layers
Lumen
Capillary bed
Lacteal
Villi
Intestine
Lumen
Microvilli
Epithelium
Villi
Identify the organ and its functions
www.iadc.ac.in

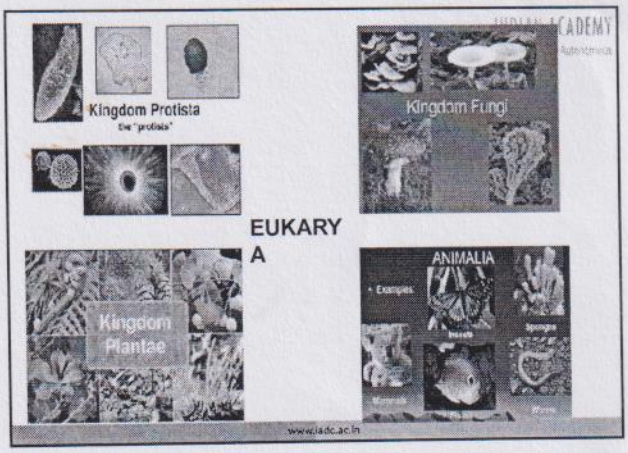

INDIAN ACADEMY
I Semester
MSc BIOCHEMISTRY
MICROBIOLOGY
Prof. Agna P.K.,
Assistant Professor,
Dept of Life Sciences,
IADCA
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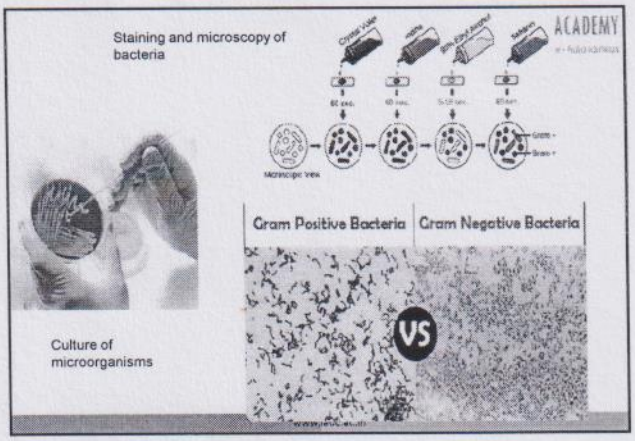


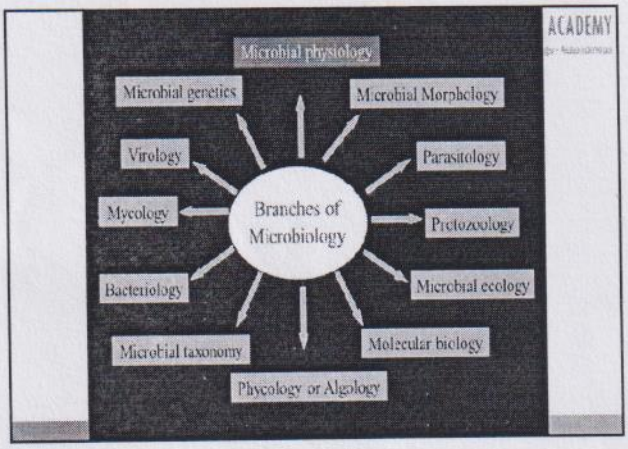


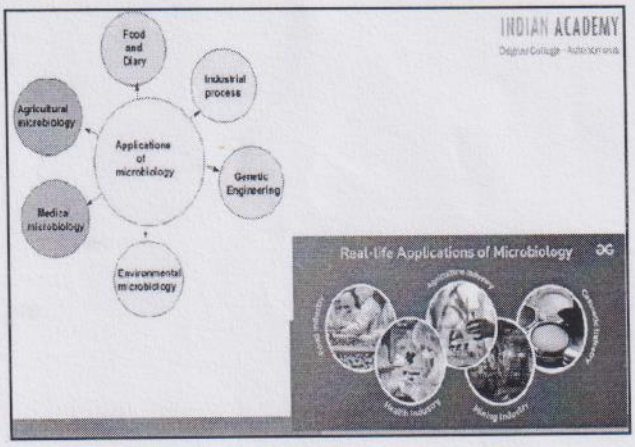


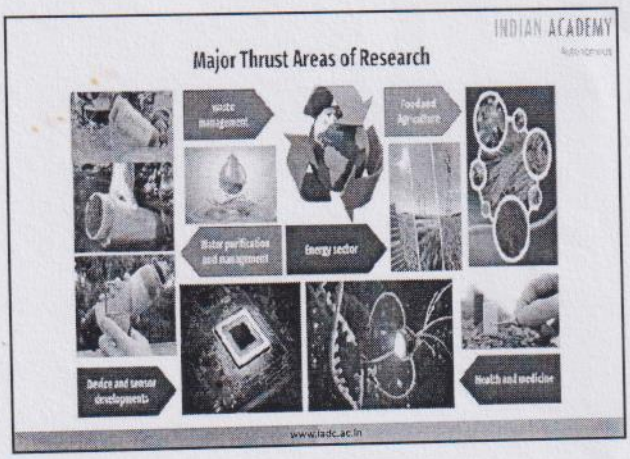
Prokaryotic	Sl. No.	Eukaryotic
Small cell size (0.2 – 2 micrometer)	01	Larger cell size (> 10 micrometer)
Always unicellular	02	Often multicellular
No Nucleus	03	Always have nucleus
DNA is circular without proteins	04	DNA is linear and associated with histone proteins
No Cytoskeleton	05	Always have cytoskeleton
Cell division by binary fission	06	Cell division by mitosis or meiosis
Cell wall made up of peptidoglycan	07	No cell wall, if present made up of cellulose, chitin(fungi)
Ribosomes smaller size (70S)	08	Ribosomes larger size (80S)
Eg: Bacteria, mycoplasma	09	Eg: Algae, Fungi, Protozoa











Department of Life Sciences
IADCA
Programme Coordinator - Biochemistry
Department of Life Sciences
Academy Degree College - Autonomous
Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences

M.Sc. BIOCHEMISTRY

FOUNDATION COURSE 2023-24

Student Attendance

Class: I semester

Course: M.Sc Biochemistry

Academic year: 2023-24

Batch: 2023-25

Sl. No.	Student name	CH	CA	Percentage attendance
1	B M Naveen	16	16	100%
2	Devika N	16	16	100%
3	Dhanyashree Narayan	16	16	100%
4	Jayashree L M	16	16	100%
5	Namitha M A	16	16	100%
6	Nikhil N	16	16	100%
7	Sandhya K	16	16	100%
8	Shivpujan S Mishra	16	16	100%
9	Shreesha N S	16	16	100%
10	Sindhu T	16	16	100%
11	Vinutha	16	16	100%

CH - No of Classes held **CA** - No of Classes attended Total hrs taken : 16 hrs

Name and Signature of the incharge faculty:

Dr. Ananda Vardhan H., HoD

Dr. Erumalla Venkatanagaraju

Dr. Suma. T.K

Dr. Sangeetha Annie George

Prof. Agna P.K.

Program Coordinator

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous

M.Sc. BIOCHEMISTRY - 2023-25 BATCH

FOUNDATION COURSE on "Techniques"

VICTORY

REGISTER OF ATTENDANCE & FEES

Faculty: Dr. Suma. T.K.

FOR THE MONTH OF.....Jan.2024

NAME OF THE INSTITUTE : IADCA

SECTION : I Sem MSc BC PLACE : Bangalore

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
			8/1	9/1	10/1																														
1.		Dhanyashree Narayan	1	2	3																														
2.		Devika. N.	1	2	3																														
3.		Jayashree .L.M.	1	2	3																														
4.		B. M. Naveen	1	2	3																														
5.		Nikhil. N.	1	2	3																														
6.		Nithin Kumar. M.	1	2	3																														
7.		Sandhya. K.	1	2	3																														
8.		Shivpujan Mishra	1	2	3																														
9.		Shreesha. N.S.	1	2	3																														
10.		Sindhu. T	1	2	3																														
11.		Namitha. M. A.	1	2	3																														
12.		Vinutha	1	2	3																														
		Number present Daily M E																																	
		Initials M E	TKS	TKS	TKS																														

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

No. on roll at the beginning of the month ... No. On roll during month

MSc Biochemistry : 2023-25 Batch

FOUNDATION COURSE on "Biomolecules" Faculty : Dr. E. Venkat

VICTORY

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF ..... Jan 2024

Sl. No. | Admission No. | NAME OF THE INSTITUTE : IADCA | SECTION : I Sem MSc BC PLACE : Bangalore

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
			8/1	9/1	10/1	11/1																														
1		Dhanyashree Narayan	1	2	3	4																														
2		Devika N	1	2	3	4																														
3		Jaya Shree L M	1	2	3	4																														
4		B M Naveen	1	2	3	4																														
5		Nikhil N	1	2	3	4																														
6		Nithin kumar M	1	2	3	4																														
7		Sandhya K	1	2	3	4																														
8		Shivpujan Mishra	1	2	3	4																														
9		Shreesha N S	1	2	3	4																														
10		Sindhu T	1	2	3	4																														
11		Namitha M A	1	2	3	4																														
12		Vinutha	1	2	3	4																														

Faculty :
Dr. E. Venkat

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Number present Daily	M																																		
Initials	M																																		
	E																																		

No. on roll at the begining of month. | Admitted during the month. | No. on roll at end of month. | No. of Working days | Average attendance during the month | No. On roll during month

MSc - Biochemistry : 2023-25 Batch

FOUNDATION COURSE on "Microbiology" Faculty : Prof. Agna. P.K.

VICTORY

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF Jan. 2024

NAME OF THE INSTITUTE : IADCA

SECTION : I Sem MSc Bc PLACE : Bangalore

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
			9-1-24	10-1-24	11-1-24																															
1		Dhanyashree Narayan	1	2	3																															
2		Devika N	1	2	3																															
3		Jayashree L M	1	2	3																															
4		B M Naveen	1	2	3																															
5		Nikhil N	1	2	3																															
6		Nithin kumar M	1	2	3																															
7		Sandhya k	1	2	3																															
8		Shiv pujan Mishra	1	2	3																															
9		Shreesha N S	1	2	3																															
10		Sindhu T	1	2	3																															
11		Namitha M A	1	2	3																															
12		Vinutha	1	2	3																															

Faculty :
Prof. Agna

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Number present Daily	M / £																																		
Initials	M / £																																		

No. on roll at the begining of month. | Admitted during the month. | No. on roll at end of month. | No. of Working days | Average attendance during the month | No. On roll during month

MSc Biochemistry 2023-25 Batch

FOUNDATION COURSE on "Physiology" Faculty:

VICTORY

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF Jan 2024 Dr Sangeetha Annie George

NAME OF THE INSTITUTE: IADCA

SECTION: I Sem MSc BC PLACE: Bangalore

Sl. No.	Admission No.	NAMES	8/1	10/2	11/3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
1		Dhanyashree Narayan	1	2	3																														
2		Devika N	1	2	3																														
3		Jayashree LM	1	2	3																														
4		B M Naveen	1	2	3																														
5		Nikhil N	1	2	3																														
6		Nithin kumar M	1	2	3																														
7		Sandhya K	1	2	3																														
8		Shivpujan Mishra	1	2	3																														
9		Shreesha N.S	1	2	3																														
10		Sindhu T	1	2	3																														
11		Namitha M.A	1	2	3																														
12		Vinutha	1	2	3																														

Faculty:
Dr. Sangeetha

Program Coordinator
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Number present M
Daily F

No. on roll at the beginning of month.
Admitted during the month.
Left ... roll at end of month.

M.Sc Biochemistry - 2023-25 Batch

Foundation Course on "Inorganic Chemistry"

Faculty: Dr. Ananda Vardhan H.

VICTORY

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF Jan 2024

NAME OF THE INSTITUTE : IADC-A

SECTION : I Sem M.Sc./B.Sc. PLACE : Bangalore

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Pt.	Date of payment
			8/1	9/1	10/1																														
1		Dhanyashree Narayan	P	1	2	3																													
2		Devika N	P	2	3																														
3		Jayashree L.M.	1	2	3																														
4		B M Naveen	1	2	3																														
5		N K L N	1	2	3																														
6		N Hari Kumar M	1	2	3																														
7		Sandhya K	P	2	3																														
8		Shivpujan Mishra	1	2	3																														
9		Shreesha N.S.	1	2	3																														
10		Sindhu T.	1	2	3																														
11		Vanitha M.A	1	2	3																														
12		Vinutha	1	2	3																														

Program Coordinator - Biochemistry
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Number present Daily M E

Initials M E

No. On roll during month

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences

M.Sc. BIOTECHNOLOGY

FOUNDATION COURSE 2023-24

Foundation courses are designed to increase academic skills and give students a broad understanding (or foundation) of the subject area, as well as building confidence ahead of starting the two year postgraduate degree. Programmes offer learning across a broad range of subjects in life sciences, with a mix of lectures, tutorials, and seminars, sometimes with workshops. A key part of foundation study is to aid new students to work on required academic skills, such as research and analytical skills to help them to bridge the gap between undergraduate and post-graduate study.

Objectives of the course:

The aim and objectives of this foundation course is

- to make all the students revisit the basic concepts of biotechnology
- to understand the importance of biotechnology
- to make the students know the various fields of Biotechnology and its applications in life science research.

Content

1. Introduction to Biotechnology
2. Techniques in Biotechnology
3. Applications of Biotechnology
4. Trends in Biotechnology
5. Scope of Biotechnology

Teaching methodology:

Power point presentations, videos, quiz, etc.

Learning Outcomes

At the end of this course students will become

- Be familiar with the overview of biotechnology basic concepts
- understand the scope and importance of biotechnology

- comprehend the multidisciplinary nature of scientific research and knowledge

Videos related to contents :

https://www.youtube.com/watch?v=m_Xrh5uJFJo

https://www.youtube.com/watch?v=rWAioRA9qHc

https://www.youtube.com/watch?v=AScl-dwDmIM

https://www.youtube.com/watch?v=jKBv8z0JrQQ

https://www.youtube.com/watch?v=spkqsEvyf5c

https://www.youtube.com/watch?v=y0XnAuyh1g8

Total hours: 18 hrs

Faculty names:

1. Dr. Ramachandra Murthy, Program Coordinator
2. Dr. Paramesh H
3. Prof. Sudhakar Malla
4. Dr. Kalaiyarasu
5. Dr. Divya
6. Dr. Md RafiqKhan

Student list: M.Sc Biotechnology, Batch 2023-25

Sl. No.	Student name
1	A Arokia Monisha
2	Aastha Singh
3	Abhishek B. S
4	Abhishek K.S
5	Akshay G Supekar
6	Akshitha Roy
7	Amisha Sinha
8	Azra Esha
9	C Pranitha
10	Chandana V
11	Deekshith B
12	Gowtham A

13	Harsha P. R
14	Javeri Manali Nitin
15	Kavya K
16	Mallikarjun
17	NameeraYadahalli
18	Nikshitha P
19	P Nehaa Sagar
20	Pavithra C
21	Priti Gupta
22	Radesh Kumar S.N
23	Ramya K S
24	Shilpa R
25	Shravanthi M.S
26	Shruti
27	Subhajit Mandal
28	Suman Mandal
29	Sumit Sahoo
30	Sweta Holder
31	V.H. Bhargavi
32	Vinitha M
33	Sujay David

Program Coordinator

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Department of Life Sciences
IADCA

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences
M.Sc. BIOTECHNOLOGY
FOUNDATION COURSE 2023-24
Student Attendance

Class: I semester **Academic year: 2023-24**
Course: M.Sc Biotechnology **Batch: 2023-25**

Sl. No.	Student name	CH	CA	Percentage attendance
1	A Arokia Monisha	18	18	100%
2	Aastha Singh	18	18	100%
3	Abhishek B. S	18	0	100%
4	Abhishek K.S	18	0	0
5	Akshay G Supekar	18	18	100%
6	Akshitha Roy	18	18	100%
7	Amisha Sinha	18	18	100%
8	Azra Esha	18	17	94%
9	C Pranitha	18	18	100%
10	Chandana V	18	0	0
11	Deekshith B	18	18	100%
12	Gowtham A	18	0	0
13	Harsha P. R	18	18	100%
14	Javeri Manali Nitin	18	18	100%
15	Kavya K	18	0	0
16	Mallikarjun	18	18	100%
17	NameeraYadahalli	18	18	100%
18	Nikshitha P	18	18	100%
19	P Nehaa Sagar	18	15	83%
20	Pavithra C	18	18	100%
21	Priti Gupta	18	18	100%
22	Radesh Kumar S.N	18	0	0
23	Ramya K S	18	0	0

24	Shilpa R	18	0	0
25	Shravanthi M.S	18	0	0
26	Shruti	18	18	100%
27	Subhajit Mandal	18	18	100%
28	Suman Mandal	18	18	100%
29	Sumit Sahoo	18	18	100%
30	Sweta Holder	18	0	0
31	V.H. Bhargavi	18	18	100%
32	Vinitha M	18	18	100%
33	Sujay David	18	18	100%

CH - No of Classes held **CA** - No of Classes attended Total hrs taken : 18 hrs

Name and Signature of the incharge faculty:

Dr. Ramachandra Murthy, Program Coordinator

Dr. Paramesh H

Prof. Sudhakar Malla

Dr. Kalaiyarasu

Dr. Divya

Dr. Md RafiqKhan

Program Coordinator

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Department of Life Sciences IADCA

INDIAN ACADEMY
Degree College - Autonomous

Department of Life Sciences
M.Sc. BIOTECHNOLOGY
FOUNDATION COURSE 2023-24
Student Attendance

Class: I semester **Academic year: 2023-24**
Course: M.Sc Biotechnology **Batch: 2023-25**

Sl. No.	Student name	CH	CA	Percentage attendance
1	A Arokia Monisha	18	18	100%
2	Aastha Singh	18	18	100%
3	Abhishek B. S	18	0	100%
4	Abhishek K.S	18	0	0
5	Akshay G Supekar	18	18	100%
6	Akshitha Roy	18	18	100%
7	Amisha Sinha	18	18	100%
8	Azra Esha	18	17	94%
9	C Pranitha	18	18	100%
10	Chandana V	18	0	0
11	Deekshith B	18	18	100%
12	Gowtham A	18	0	0
13	Harsha P. R	18	18	100%
14	Javeri Manali Nitin	18	18	100%
15	Kavya K	18	0	0
16	Mallikarjun	18	18	100%
17	NameeraYadahalli	18	18	100%
18	Nikshitha P	18	18	100%
19	P Nehaa Sagar	18	15	83%
20	Pavithra C	18	18	100%
21	Priti Gupta	18	18	100%
22	Radesh Kumar S.N	18	0	0
23	Ramya K S	18	0	0

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFE SCIENCES - BIOTECHNOLOGY

PG I SEM TIMETABLE

Orientation Programme

Date	Days	9.15-10.10	10.15-11.10	11.15-12.10
11.10.2023	Wednesday	Dr. Murthy TTS	Dr. Murthy TTS	Prof. Sudhakar
12.10.2023	Thursday	Prof. Sudhakar	Dr. Paramesh	Dr. Divya
13.10.2023	Friday	Prof. Sudhakar	Dr. Paramesh	Dr. Rafiq
14.10.2023	Saturday	Dr. Kalaiyarasu	Dr. Divya	Dr. Kalaiyarasu
16.10.2023	Monday	Prof. Sudhakar	Dr. Murthy TTS	Dr. Paramesh
17.10.2023	Tuesday	Dr. Kalaiyarasu	Dr. Paramesh	Dr.Divya

Program Coordinator

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

HOD

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Principal
16/10/2023

2023 Batch : MSc Biotechnology

Foundation Course

VICTORY

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF..... OCT-2023

NAME OF THE INSTITUTE : IADCA

SECTION : I SEM MSc BT PLACE : BANGALORE

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs. Ps.	Date of payment
			11.10.2023									12.10.2023						13.10.2023								14.10.2023											
			9.15-10.10	10.15-11.10	11.15-12.10						9.15	10.15			11.15			9.15	10.15	11.15						9.15	10.15	11.15								
1		A Arokia Monisha	1	2	3						4	5			6			7	8	9						10	11	12								
2		Aastha Singh	1	2	3						4	5			6			7	8	9						10	11	12								
3		Abhishek B.S	.	.	.						.	.			.			.	.	.						.	.	.								
4		Abhishek K.S	.	.	.						.	.			.			.	.	.						.	.	.								
5		Akshay G Supekar	1	2	3						4	5			6			7	8	9						10	11	12								
6		Akshitha Roy	1	2	3						4	5			6			7	8	9						10	11	12								
7		Amisha Sinha	1	2	3						4	5			6			7	8	9						10	11	12								
8		Azra Esha	1	2	3						4	5			6			7	8	9						10	11	12								
9		C Pranitha	1	2	3						4	5			6			7	8	9						10	11	12								
10		Chandana V	.	.	.						.	.			.			.	.	.						.	.	.								
11		Deekshith B	1	2	3						4	5			6			7	8	9						10	11	12								
12		Gowtham A	.	.	.						.	.			.			.	.	.						.	.	.								
13		Harsha P.R	1	2	3						4	5			6			7	8	9						10	11	12								
14		Javeri Manali Nitin	1	2	3						4	5			6			7	8	9						10	11	12								
15		Kavya K	.	.	.						.	.			.			.	.	.						.	.	.								
16		Mallikarjun	1	2	3						4	5			6			7	8	9						10	11	12								
17		Nameera yadahalli	1	2	3						4	5			6			7	8	9						10	11	12								
18		Nikshitha P	1	2	3						4	5			6			7	8	9						10	11	12								
19		P Nehaa Sagar	.	.	.						.	.			.			.	.	.						.	.	.								
20		Pavithra C	.	.	.						.	.			.			.	.	.						.	.	.								
21		Priti Gupta	1	2	3						4	5			6			7	8	9						10	11	12								
22		Radesh Kumar S.N	.	.	.						.	.			.			.	.	.						.	.	.								
23		Ramya K.S	.	.	.						.	.			.			.	.	.						.	.	.								
24		Shilpa R	.	.	.						.	.			.			.	.	.						.	.	.								
25		Shravanthi M.S	1	2	3						4	5			6			7	8	9						10	11	12								
26		Shruti	1	2	3						4	5			6			7	8	9						10	11	12								
27		Subhajit Mandal	1	2	3						4	5			6			7	8	9						10	11	12								
		Number present M																																		
		Daily F																																		
		Initials M																																		
		F																																		

No. on roll at the begining of month. | Admitted during the month. | Left No. on roll at end of month. | No. of Working days | Average attendance during the month | No. On roll during month

Dr Murthy | Dr Murthy | Prof Sudhakara | Prof Sudhakara | Dr Ramesh | Dr Asha | Dr Shilpa | Dr Kishor | Dr Shilpa | Dr Kishor

Program Coordinator - Biotechnology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

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2023 Batch : M.Sc Biotechnology

VICTORY

REGISTER OF ATTENDANCE & FEES

Foundation Course

FOR THE MONTH OF..... Oct 2023

NAME OF THE INSTITUTE : IADCA

SECTION : I SEM MSc BT PLACE : BANGALORE

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
			11.10.2023								12.10.2023							13.10.2023										14.10.2023									
			9.15	10.15	11.15						9.15	10.15			11.15			9.15	10.15	11.15					9.15	10.15	11.15									
28		Suman Mandal	1	2	3						4	5			6			7	8	9					10	11	12									
29		Sumit Sahoo	1	2	3						4	5			6			7	8	9					10	11	12									
30		Sweta Holder	.	.	.						.	.			.			.	.	.					.	.	.									
31		V.H Bhargavi	1	2	3						4	5			6			7	8	9					10	11	12									
32		Vinitha.M	1	2	3						4	5			6			7	8	9					10	11	12									
33		Sujay David	1	2	3						4	5			6			7	8	9					10	11	12									
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Department of Life Sciences
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2023 Batch : MSc Biotechnology

Foundation Course

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REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF..... Oct. 2023

NAME OF THE INSTITUTE : TADOA

SECTION : I SEM MSC BT PLACE : BANGALORE

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
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1		A Arockia Monisha	13	14	15						16	17			18																						
2		Aastha Singh	13	14	15						16	17			18																						
3		Abishek B S	.	.	.						.	.			.																						
4		Abishek K S	.	.	.						.	.			.																						
5		Akshay G Supekar	13	14	15						16	17			18																						
6		Akshitha Roy	13	14	15						16	17			18																						
7		Anusha Sinha	13	14	15						16	17			18																						
8		Azra Esha	.	13	14						15	16			17																						
9		C Pranitha	13	14	15						16	17			18																						
10		Chandana.V	.	.	.						.	.			.																						
11		Deekshith B	13	14	15						16	17			18																						
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13		Harsha P R	13	14	15						16	17			18																						
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21		Priti Gupta	13	14	15						16	17			18																						
22		Radesh kumar S N	.	.	.						.	.			.																						
23		Ramya K S	.	.	.						.	.			.																						
24		Shilpa R	.	.	.						.	.			.																						
25		Shravanthi M S	13	14	15						-	.			.																						
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No. on roll at the begining of month. | Admitted during the month. | Left No. on roll at end of month. | No. of Working days | Average attendance during the month | No. On roll during month

2023 Batch : MSc Biotechnology

VICTORY

REGISTER OF ATTENDANCE & FEES

Foundation Course

FOR THE MONTH OF Oct. 2023

NAME OF THE INSTITUTE : IADEA

SECTION : I Sem MSc BT PLACE : BANGALORE

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
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Number present Daily M E

Initials M E

No. on roll at the begining of month. | Admitted during the month. | Left | No. on roll at end of month. | No. of Working days | Average attendance during the month | No. On roll during month

Prof. Sreekumar Dr. Murthy Dr. Parameshwar Dr. Kalai Dr. Parameshwar Dr. Shriya

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I Semester
MSc BIOTECHNOLOGY

Introduction to Biotechnology

Dr. Ramachandra Murthy,
Program Coordinator - Biotechnology,
Dept of Life Sciences,
IADCA

- Biotechnology applies scientific and engineering principles to living organisms in order to produce products and services of value to society.
- Biotechnology has been identified as one of the frontline technologies today being developed and used to understand and manipulate biological molecules for applications in medical, agricultural, industrial and environmental sectors of the national economy.
- A collective noun for the application of biological organisms, systems or processes to manufacturing and service industries.

Goods:

Products of industries concerned with food, beverages, pharmaceutical, biochemicals and winning of metals

Services:

Largely concerned with water purification, industrial and domestic waste management including sewage water



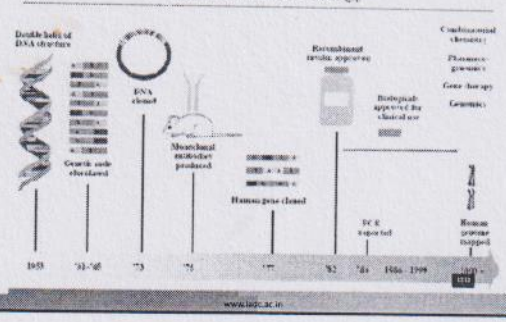


The Promise of Biotechnology

- Diagnosing disease
- Curing disease
- Nutritious food/feed
- Healthy food/feed
- Productive land
- Feeding the poor
- Sustainable agriculture
- Healthy environment



Evolution of Biotechnology



Biotechnology is a multidisciplinary field

Integrated development is essential

- Biological and material science
- Physical Science
- Chemical Science
- Engineering – bioengineering, electronics
- Medicine
- Agronomics
- Aquaculture
- Animal Science
- Energy Bioscience
- Environment Science
- Bioresource
- Nano Science
- Forestry

- Investment and Finance
- Management
- Law

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Techniques in Biotechnology

Dr. Paramesh H,
Dept of Life Sciences,
IADCA

Techniques of Biotechnology

Modern biotechnology is possible due to the development of techniques from the 1960s onwards, which arose from our greater understanding of DNA and how it functions, following the discovery of its structure by Watson and Crick in 1953. The table lists the techniques that we shall look at in detail

	Technique	Purpose	Type
1	Restriction Enzymes	To cut DNA at specific points, making small fragments	manipulating DNA
2	DNA Ligase	To join DNA fragments together	
3	Reverse transcriptase	To make DNA from mRNA	
4	Electrophoresis	To separate fragments of DNA	Analysing DNA
5	DNA Sequencing	To read the base sequence of a length of DNA	
6	Restriction Mapping	To make a map of a length of DNA	
7	PCR	To amplify very small samples of DNA	
8	Southern Blot	To look for specific sequences in DNA	
9	Genetic Fingerprinting	To compare different peoples' DNA	
10	Vectors	To carry DNA into cells and ensure replication	Cloning DNA
11	Transformation	To deliver a gene into a living cell	
12	Marker Genes	To identify cells that have been transformed	

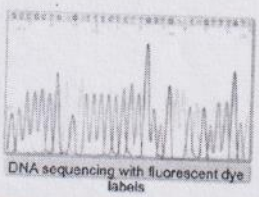
Modern biotechnology methods have many applications

Four important biotechnology methods are:	DNA sequencing (determining the order of DNA bases)
	rDNA (moving genes between organisms)
	SCNT (transferring a nucleus to a new cell)
	PCR (copying DNA)

These methods are used in medicine, agriculture, environmental work, forensic science, and other fields. Basic research improves our understanding of biology and often generates useful methods.

DNA sequencing determines the order of nucleotide bases

- There are many methods for sequencing DNA
- Can tag each base with a different chemical label, then read the order of labels



DNA sequencing with fluorescent dye labels

Recombinant DNA (rDNA) moves genes between organisms

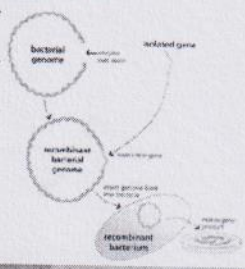
Identify and isolate gene for useful product (e.g., human insulin production gene)

Cut open a circular bacterial genome

Insert new gene

You have created a new (recombinant) life form!

Bacteria will make a gene product (e.g., human insulin)



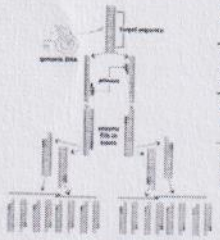
Somatic cell nuclear transfer (SCNT) is used in cloning and stem cell research



Dolly, the first cloned mammal, was produced using SCNT.

Cloned cells can be implanted in a surrogate mother to produce an infant, or separated and used in stem cell research.

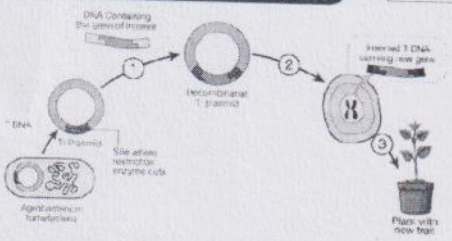
The polymerase chain reaction (PCR) copies DNA



- PCR is an artificial method of duplicating DNA
- Primers (short segments of DNA) determine which DNA segment to duplicate
- Enzyme (Taq) catalyzes replication of DNA segment
- Repeated cycles = millions of copies of DNA segment

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RECOMBINANT DNA TECHNOLOGY



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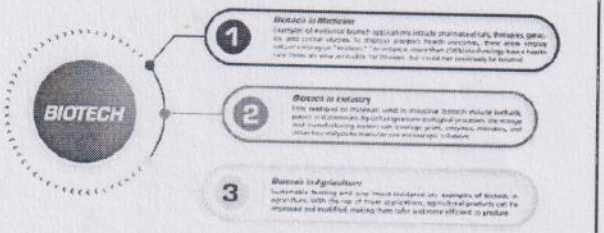
I Semester
MSc BIOTECHNOLOGY

Applications of Biotechnology

Prof. Sudhakar Malla,
Dept of Life Sciences,
IADCA

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The Three Primary Sectors of Biotech



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Current Applications of Biotech

Before going in-depth with a few areas of biotech research, it is important to gain a brief understanding of the many applications of biotechnological advancements.

- Microbial
- Agricultural
- Animal
- Forensic
- Environmental
- Aquatic
- Medical

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Microbial Applications



- Bacteria & yeast are the most frequently used microbes
- Better enzymes and organisms for making foods, simplifying manufacture and production processes, and making decontamination processes for industrial waste product removal more efficient.
- Microbes used to clone and produce *batch* amounts of important proteins

Agricultural Applications



- Agricultural Biotechnology is estimated to be $6 billion market (2005), including applications such as:
  - Pest-resistant plants
  - Higher protein & vitamin content in foods
  - Drugs developed and grown as plant products
  - Drought-resistant, cold-tolerant, and higher-yielding crops

Molecular Pharming

- **Molecular pharming** is the use of genetically modified plants (or animals) as a source of pharmaceutical products.
- These are usually recombinant proteins with a therapeutic value.



- This is an emerging but very challenging field that requires:
  - manipulation (at the genetic engineering level) of protein **glycosylation** (addition of polysaccharide chain)
  - subcellular protein targeting in plant cells

Animal Applications

- Animals can be used as *bioreactors*!
- Many human therapeutic proteins are needed in massive quantities (>100s of kgs), so scientists create female **transgenic animals** to express therapeutic proteins in milk.



- Goats, cattle, sheep, & chickens are sources of **antibodies** (protective proteins that recognize & destroy foreign material)
- ***Transgenic*** refers to containing genes from another source

Forensic Applications

- **DNA fingerprinting** is the classic example of a forensic application. It is used most commonly for law enforcement and crime scene investigation (CSI).
- It was first used in 1987 to convict a rapist in England.



- Other applications of DNA fingerprinting include:
  - identifying human remains
  - paternity tests
  - endangered species (reduces poaching)
  - **epidemiology** (spread of disease)

Environmental Applications

- The major environmental use is for *bioremediation*.
- **Bioremediation** is the use of biotech to process or degrade a variety of natural and manmade products, especially those contributing to pollution



- Therefore, cleaning up environmental hazards produced by industrial progress is a major application of this type of biotechnology.
- There is a strong tie to *microbial* biotech (since many microbes are helpful for this area).

Medical Applications

- Medical applications of biotech include preventative, diagnostic, and treatment.
- The Human Genome Project is very useful within this field.



- **Gene therapy** and **stem cell technologies** are two up-and-coming fields within the medical area of biotech.
- Stem cell technologies include immature cells that have the potential to develop and specialize into a variety of other cell types.

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Trends in Biotechnology

Dr. Kalaiyarasu,
Dept of Life Sciences,
IADCA

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Some of the top 5 core trends that will propel breakthroughs and innovation in biotechnology are



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1. Gene Editing

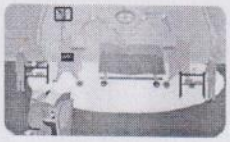


This technique in biotechnology inserts, removes, changes, or replaces specific pieces of a person's existing DNA. To treat diseases, scientists are exploring ways to edit genes in DNA. A central count about the gene. The goal of gene editing is to change the existing gene and correct mutations causing harmful issue. CRISPR is the most common type of editing.

With this innovation, scientists can now modify genes in existing plants, animals with healthy ones to potentially treat, cure, or prevent a disease or medical condition.

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2. Precision Medicine



The approach to precision medicine allows researchers and doctors alike to predict more accurate treatment and prevention strategies for a particular disease, usually in groups of people.

The goal of this trend is to reduce the risk of human complications in the healthcare industry. Professionals in the field of science and health grants the promise of precision medicine as it expands in the future.

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3. Biomanufacturing



This trend relies on natural occurring processes and reactions to produce various and advanced materials, etc. that are normally produced through a synthetic process. The most common example of process of biomanufacturing is fermentation.

The goal of this application in biomanufacturing is to explore the ways to create sustainability, reduce energy consumption, and increase innovation and productivity. Products are currently produced to maintain advancing.

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4. Synthetic Biology



The principle of this trend is to engineer new biological systems or re-design existing ones for useful purposes. It involves manipulation of genes or components within and their integration into cells where they are chosen to provide suitable experimental strategies.

Although there are hurdles to overcome in this area, its potential will outweighs the challenges. It is capable of producing new solutions to agriculture, global healthcare, manufacturing, and many more.

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5. Bioprinting



The relatively new technology is an additive manufacturing process like 3D printing. The only difference is that bioprinters print with cells or biomaterials to create organ-like structures that is beneficial to the healthcare industry. The grandiose potential of this trend benefits several industries including drug discovery, regenerative and personalised medicine.

As more researchers gauge the latest bioprinting technology, the developments can surely breakthrough in the coming years.

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Scope of Biotechnology

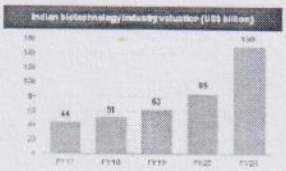
Dr. Divya,
Dept of Life Sciences,
IADCA

Scope of Biotechnology in India

- India is soon going to be hotspot for biotech industry.
- Biotech sector in India is estimated to grow by 30.46 percent by 2025.
- India is among the top 12 biotech destinations in the world and third in Asia-pacific region.
- Pharmaceutical, Biological sciences, healthcare, food processing industry are blooming career options in biotechnology.

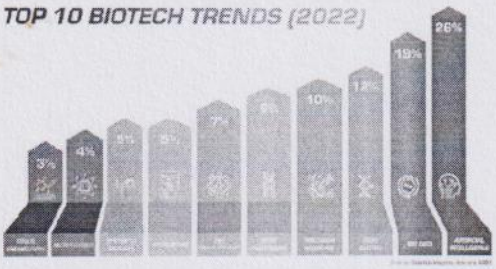
The Future of Biotechnology Professionals

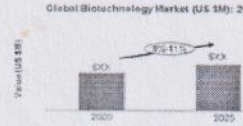
As per the BLS report, the employment demand for professionals in the field of biotechnology significantly surpasses the job market demand compared to other occupations. Also, it is projected to experience a remarkable growth of 5–6% by the end of the year 2024.



Also, the market size of the Biotechnology industry is growing at a fast pace. The report indicates that the Biotechnology industry grew at nearly double the rate in the past five years. This exponential growth indicates that the future prospects for a career in Biotechnology are very promising.

TOP 10 BIOTECH TRENDS (2022)





Major Players of Biotechnology Market
- Aligent Technologies
- Biogen Medical Instrument
- Danaher
- Roche
- Illumina

Opportunities for Biotechnology by Various Product, Material, and Application

Technology	Application
• Fermentation, Tissue Engineering, and Regeneration • PCR-Technology • Nanotechnology • Chromatography • DNA Sequencing • Cell Based Assay • Others	• Biopharmacy • Bioservices • Bioagriculture • Bioindustries • Bioinformatics

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Department of Life Sciences

M.Sc. MICROBIOLOGY

FOUNDATION COURSE 2023-24

Foundation courses are designed to enhance academic skills and provide students with a solid understanding of their subject area, helping to build confidence before they begin their two-year postgraduate degree. These programs cover a wide range of life sciences topics and typically include a mix of lectures, tutorials, seminars, and sometimes workshops. A crucial aspect of foundation studies is to support new students in developing essential academic skills, such as research and analytical abilities, to help them transition smoothly from undergraduate to postgraduate study.

Objectives of the course:

- Encourage students to review and reinforce their fundamental knowledge of Microbiology.
- Highlight the significance of Microbiology in various contexts.
- Introduce students to the diverse branches of Microbiology and their relevance to research in the life sciences.

Content

1. Introduction to Microbiology
2. Introduction to Cell biology, molecular biology
3. Microbiology analysis and techniques
4. Basic Biochemistry

Teaching methodology:

Power point presentations, videos, quiz, etc.

Learning Outcomes

At the end of this course students will become

- Gain a solid understanding of fundamental Microbiology concepts.
- Recognize the breadth and significance of Microbiology in various fields.
- Appreciate the interdisciplinary aspects of scientific research and knowledge.

Videos related to contents:

https://youtu.be/NerhS__WtJE?feature=shared

https://youtu.be/HSys_DrUfS8?feature=shared

https://youtu.be/91IuG_Hx9i4?feature=shared

https://youtu.be/URUJD5NEXC8?feature=shared

Total hours: 16 hrs

Faculty names:

1. Dr. Malaiyarasa Pandian P., PC
2. Prof. Rajarajan P
3. Dr. Pushpa K
4. Dr. Anu Kiruthika S
5. Dr. Sahithya K
6. Prof. Qurath Ul Ain
7. Prof. Agna P K

Student list: M.Sc Microbiology, Batch 2023-25

Sl. No.	Student name
1	Farheen Banu
2	Vanitha K
3	Monika S
4	Samia Chatterjee
5	Nancy Naymoi A
6	Thanushree Gowda T K
7	Prarthana J Gowda
8	Kavya P
9	Syed Faizan
10	Rahul C
11	Sindhuja C S
12	Nikhil Shyandilya B
13	Joshua Eathen Karane
14	Khan Waqui Ausaf Mir Khan
15	Syeda Asma
16	Sindhu T

Program Coordinator

Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
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Department of Life Sciences

M.Sc. MICROBIOLOGY

FOUNDATION COURSE 2023-24

Student Attendance

Class: I semester **Academic year: 2023-24**

Course: M.Sc Microbiology **Batch: 2023-25**

Sl. No.	Student name	CH	CA	Percentage attendance
1	Farheen Banu	16	16	100%
2	Vanitha K	16	16	100%
3	Monika S	16	16	100%
4	Samia Chatterjee	16	16	100%
5	Nancy Naymoi A	16	16	100%
6	Thanushree Gowda T K	16	16	100%
7	Prarthana J Gowda	16	16	100%
8	Kavya P	16	16	100%
9	Syed Faizan	16	16	100%
10	Rahul C	16	16	100%
11	Sindhuja C S	16	16	100%
12	Nikhil Shyandilya B	16	16	100%
13	Joshua Eathen Karane	16	16	100%
14	Khan Waqui Ausaf Mir Khan	16	16	100%
15	Syeda Asma	16	16	100%
16	Sindhu	16	16	100%

CH - No of Classes held **CA** - No of Classes attended Total hrs taken : 16 hrs

Name and Signature of the incharge faculty:

1. Dr. Malaiyarasa Pandian P., PC
2. Prof. Rajarajan P
3. Dr. Pushpa K
4. Dr. Anu Kiruthika S

5. Dr. Sahithya K
6. Prof. Qurath Ul Ain
7. Prof. Agna P K

Program Coordinator

Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
Bangalore - 560043

Head of Department

HEAD
Department of Life Sciences
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I Semester M.Sc Microbiology Foundation course

Shekar's Victory

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF Oct. 2023 - 24

NAME OF THE INSTITUTE : IADCA

SECTION I Sem M.Sc MB PLACE Bangalore

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs.	FEES Ps.	Date of payment
	23MMOS		11/10	12/10	13/10	14/10	12/10	17/10	12/10	12/10	13/10	13/10	13/10	13/10	14/10	10/10	14/10	14/10																			
1	059	Farheen Banu	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
2	060	Joshua Father Karane	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
3	061	K. Vanitha	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
4	62	Kavya P	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
5	63	Khan Wagid Ausaf M K	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
6	64	Monika S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
7	65	Nancy Naymoi A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
8	66	Nikhil Shyandilya B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
9	67	Prarthana J Gowda	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
10	68	Rahul C	1	2	3	4	5	A	6	7	8	9	10	11	12	13	14	15																			
11		Sindhu T	1	2	3	4	5	6	7	A	A	A	8	9	10	11	12	A																			
12	70	Sindhuja C.S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
13	72	Syeda Asma Taj	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			
14	73	Thanushree Gowda TK	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	15																			
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Program Coordinator - Microbiology
Department of Life Sciences
Indian Academy Degree College - Autonomous
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Bangalore - 560043

INDIAN ACADEMY
Degree College - Autonomous

DEPARTMENT OF LIFESCIENCES – MICROBIOLOGY

I SEMSTER M.Sc., Microbiology 2023-2024

Foundation Course – Class timetable

Date	9:15 - 10:15	10:15 - 11:15	11:15- 12:10	12:15- 01:10
11-10-2023	PRR	PMP	SA	SK
12-10-2023	HAV	PRR	SK	SA
13-10-2023	PMP	SA	PMP	SK
14-10-2023	PMP	SK	SA	PMP

Program Coordinator

Program Coordinator - Microbiology
Department of Life Sciences
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HOD

HEAD
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Principal

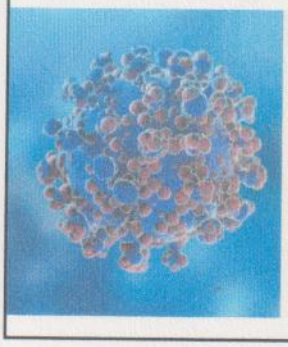
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BENGALURU - 43

INDIAN ACADEMY

I Semester
MSc MICROBIOLOGY

Introduction to Microbiology

Dr. Malaiyarasa P Pandian
Program Coordinator,
Dept of Life Sciences,
IADCA



Types of Microorganisms

Microorganisms can be classified into several categories: **bacteria**, **viruses**, **fungi**, and **protozoa**. Each group has unique characteristics and functions. Understanding these differences is essential for studying their roles in **ecosystems**, **disease**, and **biotechnology**.

Fundamentals of Microbiology: Exploring the Invisible World

Microorganisms exhibit diverse **metabolic pathways** that enable them to obtain energy and nutrients. These pathways include **fermentation**, **photosynthesis**, and **respiration**. Understanding microbial metabolism is crucial for applications in **food production** and **bioremediation**.





Introduction to Microbiology

Microbiology is the study of microscopic organisms, including bacteria, viruses, fungi, and protozoa. This field plays a crucial role in understanding **health**, **environment**, and **industry**. In this presentation, we will explore the fundamental concepts and significance of microbiology in our world.

INDIAN ACADEMY

I Semester
MSc MICROBIOLOGY

Introduction to Microbiology

Dr. S ANU KIRUTHIKA
Associate Professor,
Dept of Life Sciences,
IADCA

Department of Life Sciences
IADCA

Microbes in Health



Microorganisms play a dual role in human health. While some are **pathogens** causing diseases, others are beneficial, aiding in **digestion** and producing essential **vitamins**. The study of the **human microbiome** is revealing its impact on overall health and disease prevention.

Future of Microbiology

The future of microbiology is promising, with advancements in **genomics** and **biotechnology** opening new avenues for research and application. Understanding microbial interactions and their potential can lead to breakthroughs in **healthcare**, **environmental science**, and **sustainability**.



Microorganisms are integral to **ecosystems**, participating in nutrient cycling, decomposition, and symbiotic relationships. They help maintain **ecosystem balance** and contribute to processes like soil fertility and water purification, highlighting their importance in the **environment**.



INDIAN ACADEMY

I Semester
MSc MICROBIOLOGY

Introduction to Microbiology

Dr. PUSHPA K,
Program Coordinator – Biochemistry,
Dept of Life Sciences,
IADCA

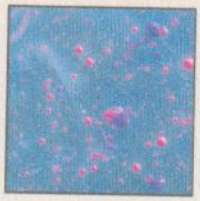


Applications of Microbiology

Microbiology has vast applications across various fields, including **medicine**, **agriculture**, and **industry**. It is essential for the development of **antibiotics**, vaccines, and biotechnological innovations, showcasing its significance in advancing human welfare and environmental sustainability.

Fundamentals of Biochemistry: Exploring the Molecular Foundations of Life

Introduction to Biochemistry



Biochemistry is the study of **chemical processes** within and related to **living organisms**. It combines **biology** and **chemistry** to explore the molecular foundations of life, including the structure and function of **biomolecules**. Understanding these principles is essential for advancements in **health**, **medicine**, and **biotechnology**.

Nucleic Acids: The Genetic Blueprint



DNA and **RNA** are the two main types of nucleic acids. DNA stores **genetic information**, while RNA plays a key role in **protein synthesis**. Understanding the structure and function of these molecules is fundamental to genetics and molecular biology.

The Building Blocks of Life



The primary **biomolecules** are **proteins**, **nucleic acids**, **carbohydrates**, and **lipids**. Each plays a critical role in cellular function and structure. **Proteins** serve as enzymes, while **nucleic acids** store genetic information. Understanding these components is vital for grasping the complexity of life.

Carbohydrates: Energy Sources

Carbohydrates are vital for **energy storage** and **supply** in living organisms. They can be simple sugars or complex polysaccharides. Understanding their role in metabolism and cellular signaling is essential for comprehending how organisms utilize energy.



Proteins are made up of **amino acids** and are essential for numerous biological functions. Their **three-dimensional structure** determines their specific function, including catalyzing reactions and providing **structural support**. The study of **protein folding** is crucial in understanding diseases like Alzheimer's.



Lipids: Membranes and Energy

Lipids, including **fats** and **phospholipids**, are essential for forming **cell membranes** and storing energy. They play a crucial role in maintaining cellular integrity and signaling. Their diverse functions make them a key area of study in biochemistry.



Applications of Biochemistry

Biochemistry has vast applications in **medicine**, **agriculture**, and **environmental science**. It plays a crucial role in drug development, genetic engineering, and understanding metabolic diseases. The knowledge gained from biochemistry is essential for addressing global challenges.



INTRODUCTION TO MICROBIAL ANALYSIS

In this presentation, we will explore **simple techniques** for analyzing **microbial life**. Understanding these techniques is essential for various fields such as **medicine**, **environmental science**, and **food safety**. Join us as we unlock the **microscopic world** and learn how to effectively study these tiny organisms.



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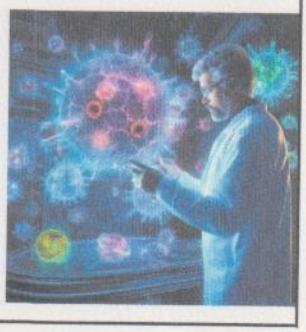
I Semester
MSc MICROBIOLOGY

Introduction to Microbiology

Prof. Rajarajan P,
Dept of Life Sciences,
IADCA

IMPORTANCE OF MICROBIAL ANALYSIS

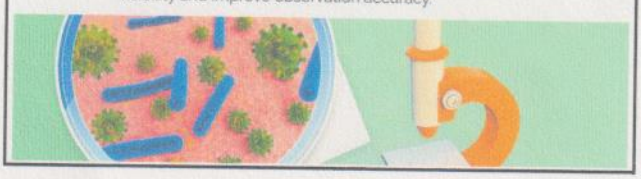
Microbial analysis is crucial for understanding **ecosystem health**, **disease prevention**, and **biotechnology** applications. By studying **microorganisms**, we can discover their roles in **nutrient cycling**, **pathogen control**, and **industrial processes**. This knowledge helps in making informed decisions for public health and environmental management.



Unlocking the Microscopic World: Simple Techniques for Microbial Analysis

BASIC MICROSCOPY TECHNIQUES

Using a **microscope** is a fundamental technique for microbial analysis. Different types of microscopes, such as **light** and **electron microscopes**, allow us to visualize microorganisms at various levels of detail. Proper **sample preparation** and **staining techniques** enhance visibility and improve observation accuracy.



CULTURING MICROORGANISMS

Culturing is a technique used to grow **microbial populations** in controlled environments. Using **agar plates** or **broth cultures**, researchers can isolate and identify specific microorganisms. This process is essential for studying **growth patterns**, **metabolic activities**, and **antibiotic susceptibility** of microbes.





MOLECULAR TECHNIQUES OVERVIEW

Molecular techniques, including **PCR** and **DNA sequencing**, provide powerful tools for microbial analysis. These methods enable the detection and identification of microorganisms at the **genetic level**, allowing for more precise insights into microbial diversity and **evolutionary relationships**.

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I Semester
MSc MICROBIOLOGY

Introduction to Microbiology

Prof. Agna P K,
Assistant Professor,
Dept of Life Sciences,
IADCA

ENVIRONMENTAL SAMPLING METHODS

Collecting samples from various environments, such as **soil**, **water**, and **air**, is crucial for microbial analysis. Techniques like **swabbing**, **filtration**, and **sediment sampling** help researchers understand microbial communities and their interactions within different ecosystems.



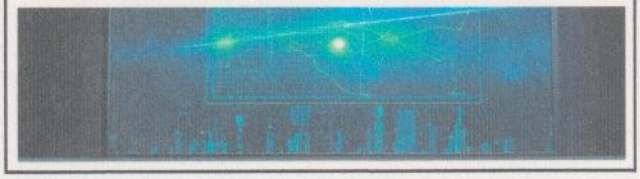
STAINING TECHNIQUES

Staining techniques, such as **Gram staining** and **acid-fast staining**, are vital for differentiating between various types of microorganisms. These methods enhance contrast and allow for the identification of **cell wall structures** and **morphologies**, aiding in the classification of bacteria and other microbes.



DATA ANALYSIS IN MICROBIAL RESEARCH

Analyzing data from microbial studies involves using statistical methods and bioinformatics tools. This helps in interpreting complex datasets, identifying trends, and making **evidence-based conclusions** about microbial behavior and interactions in various environments.





APPLICATIONS OF MICROBIAL ANALYSIS

Microbial analysis has numerous applications, including **disease diagnosis**, **bioremediation**, and **food safety** testing. Understanding microbial interactions can lead to advancements in **healthcare**, **agriculture**, and **environmental sustainability**, highlighting the importance of ongoing research in this field.

Introduction to Cell Biology

In this presentation, we will explore the **fundamentals** of cell biology, focusing on the various **cellular structures** and their **functions**. Understanding these concepts is crucial for comprehending how life operates at a microscopic level.



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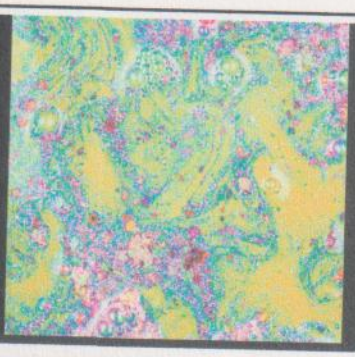
I Semester
MSc MICROBIOLOGY

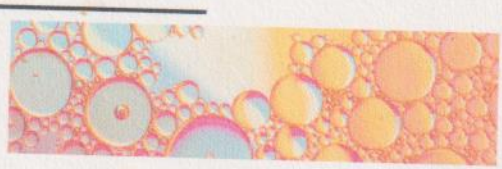
Introduction to Microbiology

Dr. Sahithya K,
Assistant Professor,
Dept of Life Sciences,
IADCA

What is a Cell?

A **cell** is the basic unit of life, serving as the **building block** for all living organisms. Cells can be **prokaryotic** or **eukaryotic**, each with distinct characteristics and functions that contribute to the complexity of life.





Fundamentals of Cell Biology: An Introduction to Cellular Structures and Functions

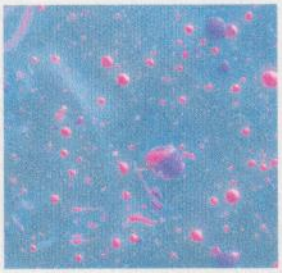
Cell Membrane Structure

The **cell membrane** is a **selectively permeable** barrier that surrounds the cell. It is primarily composed of a **phospholipid bilayer** with embedded proteins, playing a crucial role in maintaining the cell's internal environment.



Nucleus: The Control Center

The **nucleus** serves as the control center of the cell, housing the **genetic material** (DNA). It regulates cellular activities by controlling gene expression and mediating the replication of DNA during the cell cycle.



Golgi Apparatus: Processing Center

The **Golgi apparatus** functions as the cell's **packaging and distribution center**. It modifies, sorts, and packages proteins and lipids for secretion or delivery to other organelles, ensuring proper cellular function.



Mitochondria: Powerhouses of the Cell

Often referred to as the **powerhouses**, mitochondria are responsible for **energy production** through the process of **cellular respiration**. They convert nutrients into **ATP**, the energy currency of the cell.



Lysosomes: Waste Disposal

Lysosomes are cellular **organelles** that contain **digestive enzymes** responsible for breaking down waste materials and cellular debris. They play a vital role in maintaining cellular homeostasis and recycling components.



Endoplasmic Reticulum Functions

The **endoplasmic reticulum (ER)** is divided into rough and smooth types. The **rough ER** synthesizes proteins, while the **smooth ER** is involved in lipid synthesis and detoxification processes within the cell.



Cytoskeleton: Structural Framework

The **cytoskeleton** is a network of protein filaments and tubules that provide structural support, shape, and **mobility** to the cell. It is essential for intracellular transport and cell division.



INDIAN ACADEMY

I Semester
MSc MICROBIOLOGY

Introduction to Microbiology

Prof. Qurath ul Ain,
Assistant Professor,
Dept of Life Sciences,
IADCA

Which scientist is known as the father of microbiology?

a) Louis Pasteur
b) Robert Koch
c) Antonie van Leeuwenhoek
d) Alexander Fleming

Answer: c) Antonie van Leeuwenhoek

44

Which of the following structures are found in prokaryotic cells?
a) Nucleus
b) Mitochondria
c) Ribosomes
d) Chloroplasts

Answer: c) Ribosomes

45

Gram-positive bacteria retain the crystal violet stain because of their:
a) Thin peptidoglycan layer
b) Thick peptidoglycan layer
c) Lipopolysaccharide layer
d) Mycolic acid

Answer: b) Thick peptidoglycan layer

46

Which of the following is a component of the bacterial cell wall?
a) Cellulose
b) Chitin
c) Peptidoglycan
d) Glycogen

Answer: c) Peptidoglycan

47

Which of the following is NOT a method of bacterial reproduction?
a) Binary fission
b) Budding
c) Sporulation
d) Conjugation

Answer: d) Conjugation

48

The transfer of genetic material between bacteria through direct contact is known as:
a) Transformation
b) Transduction
c) Conjugation
d) Transcription

Answer: c) Conjugation

49

Plasmids are:
a) Linear DNA molecules
b) Circular DNA molecules
c) Proteins
d) Lipids

Answer: b) Circular DNA molecules

50

Which enzyme is responsible for unwinding the DNA double helix during replication?
a) DNA polymerase
b) DNA ligase
c) DNA helicase
d) RNA polymerase

Answer: c) DNA helicase

51

In the lac operon, the lacZ gene codes for:
a) Lactose permease
b) β-galactosidase
c) Transacetylase
d) RNA polymerase

Answer: b) β-galactosidase

52

Which of the following is the protein coat surrounding the viral genome?
a) Capsid
b) Envelope
c) Core
d) Matrix

Answer: a) Capsid

53

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Department of Life Sciences
IADCA

FOR THE MONTH OF 20

Section ..... Place .....

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	No. of days present	FEES Rs. P.	Date of payment

DEPT OF LIFE SCIENCES

BRIDGE COURSES
for B.Sc.

2023- onwards

AY 2023-24

Average Attendance during the month. No. on Roll during month.

REGISTER OF ATTENDANCE & FEES

Name of the Institute: IADCA

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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	23IABSc															
1.	001	Arpan Pathra	1				2			3			4			5
2.	002	Deekshaswini. N.	1				2			3			4			5
3.	003	Joyce Christy. S.	1				2			3			4			5
4.	004	Malathi. R.	1				2			3			4			5
5.	005	Sai Keerthana	1				2			3			4			5
6.	006	Pavithra. K.	1				2			3			4			5
			Fundamentals of Biochemistry Dr. Suma.T.K.				Fundamentals of Biochemistry Dr. Suma.T.K.			Fundamentals of Microbiology Dr. Anu Kiruthika			Fundamentals of microbiology Dr. Anu Kiruthika			Fundamentals of Biochemistry
		Number present M														
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No. on roll at the beginning of month.

(BcMb)

FOR THE MONTH OF July- August 2023

Section I st Sem BSc BcMb Place Bangalore

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Fundamentals of Biochemistry
Dr. Suma. T. K.

Fundamentals of Microbiology
Dr. Anu Kirthika

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TKS

No. Of Working days. Average Attendance during the month. No. on Roll during month.

(SEP 2024 Batch) BRIDGE COURSE for 1st Sem

REGISTER OF ATTENDANCE & FE

Name of the Institute IADCA

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	1
			Day 1									
					1/8/2024							
			9.15-10.10			10.15-11.10			11.15-12.10			
	BTGBC											
1.		Bhoomika. J. S.	1			2				3		
2.		Ayesha Shaifee	1			2				3		
3.		Rajesh. G.	1			2				3		
4.		Sheeba Saji	1			2				3		
5.		Sonali Kumari	1			2				3		
6.		Poornima	1			2				3		
7.		Tarpaga Grace	1			2				3		
8.		Zaiba Kulsum	1			2				3		
			Fundamentals of Biology Prof. Bilkhad Begum			Fundamentals of Genetics Dr. Bhuvana			Fundamentals of Biochemistry Dr. Sangeetha			
		Number present M										
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No. on roll at the beginning of month.

REGISTER OF ATTENDANCE & FEES

Name of the Institute IADCA

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1.	007	A. Gagan	1				2	2		3			4			
2.	008	Abdul Rayan. J.	1				2			3			4			
3.	009	Aishwarya. K.	1				2			3			4			
4.	010	Aliya Shariff	1				2			3			4			
5.	011	Hafsa Kowser	1				2			3			4			
6.	012	Jayapradeepa. S.	1				2			3			4			
7.	013	Kushal Kumar. S.	1				2			3			4			
8.	014	Ligodi. N. Divine	1				2			3			4			
9.	015	M. Rahul Krishna	1				2			3			4			
10.	016	Mohammed Zaki. W.	1				2			3			4			
11.	017	Poorvi Shetty. A.V.	1				2			3			4			
12.	018	Prabash Ranjan. P.	1				2			3			4			
13.	019	Sana Hayath. S.H.	1				2			3			4			
14.	020	Shziya Afreen	1				2			3			4			
15.	021	Sudheer. H.	1				2			3			4			
16.	022	Umme Asma. G.	1				2			3			3			
17.	023	Venkataraju. V.	1				2			3			3			
			Fundamentals of Biotechnology Dr. Divya				Fundamentals of Genetics Dr. Vanitha			Fundamentals of Biotechnology Dr. Divya			Fundamentals of Genetics Prof. Vanitha			
		Number present M														
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No. on roll at the beginning of month.

.Sc. (GBt)

ES

FOR THE MONTH OF July - August 2023

Section 1st sem BSc GBt Place Bangalore

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REGISTER OF ATTENDANCE & FEES

Name of the Institute IADCA

Sl. No.	Admission No.	NAMES	DAY 1
			1/8/2024
			9.15–10.10 / 10.15–11.10 / 11.15–12.10
	BTGMB		
1.		Hanifa Anjum	1 2 3
2.		Ishita. S. Kamble	1 2 3
3.		Mehek Kulsum. N.	1 2 3
4.		Nitesh. P.	1 2 3
5.		Niredha. S.	1 2 3
6.		Pavan. G. J.	1 2 3
7.		Punam Gurung	1 2 3
8.		Ranesh. K. B.	1 2 3
9.		S. Chhaya	1 2 3
10.		Sanju Gurung	1 2 3
11.		Shivani Chaurasia	1 2 3
12.		Siddiqua Qureshi	1 2 3
13.		Sumit Vishwakarma	1 2 3
14.		Umme Shafiya	1 2 3
15.		vedashree	1 2 3
16.		Bhuvanesh Wasi	1 2 3
17.		Keshav Chaudhary	A A A
18.		Mehul Chaudhary	A A A
			Fundamentals of Biology: Prof. Dilshad Begum / Fundamentals of Genetics: Dr. Shubha / Fundamentals of Microbiology: Dr. Anu Kinnthika
		Number present M	
		Daily E	
		Total M	
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No. on roll at the beginning of month

BtGMb

FOR THE MONTH OF August- 2024

Section 1st sem BSc .BtGMb Place Bangalore

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of days present	FEES Rs. P.	Date of payment
DAY 2										DAY 3											
2/8/2024										3/8/2024											
9.5-10.10			12.15-1.10			2.00-2.55				9.15-10.10			10.15-11.10			11.15-12.10					
4			5			6				7			8			9					
4			5			6				7			8			9					
4			5			6				7			8			9					
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4			5			A				6			7			8					
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A			A			A				A		A				A					

Microbiology
Lab : Dr.Sahitya

Fundamentals of Biotechnology : Dr.Suma T.K.

Fundamentals of microbiology : Dr. Anu kinthika

Fundamentals of Biology : Prof. Aishad Begum

Fundamentals of Genetics : Dr. Shubha

Fundamentals of Biotechnology : Dr. Suma T.K.

HEAD
Department of Life Sciences
Indian Academy Degree College - Autonomo
Bangalore - 560043

TKS TKS

Average Attendance during the month

No. on Roll during month.

(2024 Batch) Online Course for I Sem BSc

REGISTER OF ATTENDANCE & FEES

Name of the Institute IADCA

Sl. No.	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12
			Day 1											
						1/8/2024								
			9.15-10.10			10.15-11.10			11.15-12.10					
	BTGBC													
1.		Bhoomika. J. S.	1			2				3				
2.		Ayesha Shaifee	1			2				3				
3.		Rajesh. G.	1			2				3				
4.		Sheeba Saji	1			2				3				
5.		Sonali Kumari	1			2				3				
6.		Poornima	1			2				3				
7.		Tarpaga Grace	1			2				3				
8.		Zaiba Kulsum	1			2				3				

Fundamentals of Biology
Prof. Silshad Begum

Fundamentals of Genetics
Dr. Bhuvana

Fundamentals of Biochemistry
Dr. Sangeetha

Number present M
Daily E

Initial M
E

No. on roll at the beginning of month.

BTGBc

FOR THE MONTH OF August 2024

Section 1st sem BSc BTGBC Place Bangalore

11 12	13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	No. of days present	FEES Rs. P.	Date of payment
	Day 2 Day 3			
	2/8/2024 3/8/2024			
	9.15-12.10 12.15-1.10 2.00-2.55 9.15-10.10 10.15-11.10 11.15-12.10			
	4 5 6 7 8 9			
	4 5 6 7 8 9			
	4 5 6 A A A			
	4 5 6 7 8 9			
	4 5 6 7 8 9			
	4 5 6 7 8 9			
	4 5 6 7 8 9			
	4 5 6 A A A			

Biochemistry Lab
Prof. Soumya Patkar

Fundamentals of Biotechnology
Dr. Suma T. K.

Fundamentals of Biochemistry
Dr. Sangeetha

Fundamentals of Biology
Prof. Dilshad Begum

Fundamentals of Genetics
Dr. Shwetha

Fundamentals of Biotechnology
Dr. Suma T. K.

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