

Department of Botany
School of Chemical & Life Sciences
Jamia Hamdard, New Delhi-110062

Your Roll No

B.Sc. (HONS WITH RESEARCH) / B.Sc. BOTANY
III SEMESTER EXAMINATION DECEMBER 2024

Paper Name: **Cell Biology**

Paper Code: **BBO-MIC301**

Time: **2½ hours**

Maximum Marks: **60**

Note: This paper has 3 sections A, B, and C.

Section A: Answer all the questions. **Section B:** Attempt any 5 out of 6.

Section C: Attempt any 2 out of 3.

Abbreviations used:

CO-Course Outcomes

CLO 1: discuss cell theory and basic cell structure (understand);

CLO 2: explain various tools and techniques in cell biology (evaluate);

CLO 3: relate the structure with the function of various cell organelles in an eukaryotic cell (evaluate);

CLO 4: express knowledge about the composition of cytoskeleton and extracellular matrix (understand); and

CLO 5: examine mechanisms of cell division and cell death (analyze).

BTL-Bloom's Taxonomy Levels

1- Remembering, 2-Understanding, 3-Applying, 4-Analyzing, 5-Evaluating, 6-Creating

SECTION A

Very Short Type Question (15 questions)

15 x 1 = 15 marks

Q.No.	Questions	Marks	CO	BTL
1	What is nucleoid?	1	1	1
2	What is the centrifuge?	1	3	2
3	Expand FACS?	1	2	2
4	Name organelle common in plant and animal cell?	1	3	3
5	What is the use of microscopy?	1	2	2
6	What are amphipathic molecules?	1	3	3
7	Name one microscopic method that can be utilized to visualize living cells?	1	2	2
8	Give an example of fibrous proteins found in extracellular matrix?	1	4	4
9	Who proposed the 'fluid mosaic model' of plasma membrane?	1	3	3
10	What is meant by active and passive transport?	1	1	3
11	What is the role of hydrogenosome?	1	3	3
12	What role do plasmodesmata play in plant cells?	1	3	4
13	What is the role of desmosomes?	1	4	4
14	Nucleolus is involved in synthesis of which biomolecule?	1	5	5
15	What is lampbrush chromosome?	1	5	5

Please turn over

SECTION B

Short Type Question. (Attempt any five out of six)

5 x 5 = 25 marks

Q.No.	Question	Marks	CO	BTL
1	Highlight the differences between prokaryotic and eukaryotic cells.	5	1	3
2	Explain the structural features and roles of nuclear pore complex.	5	3	2
3	Explain the role of checkpoints and cyclins in the cell cycle division?	5	5	3
4	Write a short note on centrifugation, its types and applications.	5	2	2
5	Explain the components and function of cell matrix proteins.	5	4	2
6	Write a detailed account of working of confocal microscopy and its uses.	5	3	3

SECTION C

Long type Question (Attempt any two out of three)

2 x 10 = 20 marks

Q.No.	Question	Marks	CO	BTL
1	Give an illustrative account of ultrastructure of mitochondria and its role.	10	2	4
2	Give a comparative account of structure and organization of different cytoskeletal elements.	10	4	4
3	Give a detailed account of phases of meiotic cell division with the help of well labeled diagrams.	10	5	5
