

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BTECH
BRANCH: BIOTECHNOLOGY**

**SEMESTER : III/ADD
SESSION : MO/2025**

SUBJECT: BE24241 CELLULAR DYNAMICS AND MOLECULAR BIOLOGY

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

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		CO	BL
Q.1(a)	Give a sketch of Electron micrograph of cell wall and its applications in research.	[5] 6	6
Q.1(b)	Describe about freeze-fracture technique and its application in cell biology research.	[5] 1	5
Q.2(a)	Give a diagrammatic sketch describing the signaling via G-protein linked cell-surface receptors as well as its importance.	[5] 5	5
Q.2(b)	Describe the cell signaling and justify its importance in target cell adaptation.	[5] 3	6
Q.3(a)	Enumerate about cell cycle components and their regulations.	[5] 3	4
Q.3(b)	Describe about intrinsic and extrinsic pathways of apoptosis and its relationship with carcinogenesis.	[5] 2	6
Q.4(a)	Explain the detailed mechanism of chromatin packaging and assess its usefulness.	[5] 6	4
Q.4(b)	Describe gene expression and justify its importance for cell regulation.	[5] 4	6
Q.5(a)	Describe intracellular compartmentalization and justify its importance.	[5] 4	4
Q.5(b)	Explain the mechanism of protein degradation and assess its application in a cell.	[5] 6	6

:20/11/2025:E