

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: B.TECH
BRANCH: BIOTECHNOLOGY

SEMESTER: IIIrd
SESSION: MO/2022

SUBJECT: BE202 CELL AND MOLECULAR BIOLOGY

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
 2. Candidates attempt for all 25 marks.
 3. Before attempting the question paper, be sure that you have got the correct question paper.
 4. The missing data, if any, may be assumed suitably.
 5. Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.
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			CO	BL
Q1 (a)	What is endosymbiosis? How do bacteria produce ATP without mitochondria?	[2]	CO1	5
Q1 (b)	Describe the fridge fracture- electron microscopy with a suitable diagram.	[3]	CO3	4
Q2 (a)	Write any 5 differences in prokaryotic and eukaryotic cells.	[2]	CO1	4
Q2 (b)	Describe a technique to detect lateral mobility of transmembrane protein in the plasma membrane.	[3]	CO3	4
Q3 (a)	What are the functions of ER and Golgi apparatus?	[2]	CO1	2
Q3 (b)	What are the components of a gram-positive cell wall? Why they are more resistant to the antibiotic?	[3]	CO6	5
Q4 (a)	How is calmodulin activated through GPCR signaling?	[2]	CO2	4
Q4 (b)	What is signal amplification? Explain diagrammatically.	[3]	CO1	3
Q5 (a)	Is the transmembrane ion channel protein can be studied with the Patch clamp technique? If Yes How?	[2]	CO3	5
Q5 (b)	Describe different types of cell-cell communications.	[3]	CO4	2

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