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

CLASS: BTECH **SEMESTER : IInd**
BRANCH: CSE/AIML/ECE/EEE **SESSION : SP/2023**

SUBJECT: BE101 BIOLOGICAL SCIENCE FOR ENGINEERS

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.

			CO	BL
Q.1(a)	Explain schematically the experiments of Redi, Spallanzani and Pasteur and refute the hypothesis of spontaneous generation.	[5]	1	2
Q.1(b)	Some special organelles are recruited in eukaryotic Cells, identify these organelles and discuss their functions.	[5]	1	3
Q.2(a)	Justify, the Krebs cycle is an important event for aerobic respiration. How much ATP and CO_2 are generated in a complete cycle?	[5]	2	1
Q.2(b)	Photocatalytic water splitting converts sunlight and water into hydrogen, the fuel of the future. Justify the statement.	[5]	3	4
Q.3(a)	Describe the mechanism of enzyme action and five uses of enzymes in Industries.	[5]	4	3
Q.3(b)	Explain the importance of Enzyme Immobilization. Is there any disadvantage to doing so?	[5]	1	3
Q.4(a)	What do you mean by circadian rhythm? Draw a labeled diagram of a Nerve cell.	[5]	1	1
Q.4(b)	Discuss the different types of cell signaling. How the signals are amplified in a cell.	[5]	2	2
Q.5(a)	What do you understand by the central dogma of Molecular Biology? How this knowledge is useful in genetic engineering.	[5]	3	4
Q.5(b)	Differentiate between PCR and ELISA.	[5]	2	3

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