

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

**CLASS:** BTECH  
**BRANCH:** CSE/AIML/ECE/EEE

**SEMESTER : II**  
**SESSION : SP/2024**

**TIME:** 3 Hours  
**SUBJECT:** BE101 BIOLOGICAL SCIENCE FOR ENGINEERS

**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)	Diagrammatically illustrate the structural and functional importance of mitochondria and nucleus of a cell.	[5]	1	6
Q.1(b)	Explain the steps in detail that occur during the mitosis cell division.	[5]	2	3
Q.2(a)	Describe the glycolysis as well as its importance in the production of ATP.	[5]	3	4
Q.2(b)	Sketch the photosynthesis pathway and evaluate the importance of photosynthesis towards enhancing the productivity and nourishing the overwhelming population.	[5]	4	5
Q.3(a)	Explain the detailed mechanism of enzyme action with suitable diagrams.	[5]	3	3
Q.3(b)	Discuss the various methods used for enzyme immobilization and its industrial importance.	[5]	3	4
Q.4(a)	Diagrammatically describe the nerve cell structure as well as its role in signal propagation.	[5]	4	6
Q.4(b)	Describe the structure of the eye & its importance in vision and differentiation of color.	[5]	2	5
Q.5(a)	Illustrate about genetic engineering and its various applications.	[5]	3	5
Q.5(b)	Describe about plant factory its advantages over the conventional production system.	[5]	4	5