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**B. Tech. (Mechanical Engg.) –3rd Semester G-Scheme
Examination, December, 2024**

BIOLOGY

Paper : BSC-Bio-201-G

Time allowed : 3 hours]

[Maximum marks : 75]

Note: Attempt five questions in all, selecting at least one question from each unit. Q. No. 1 is compulsory.
All questions carry equal marks.

1. Explain in brief : $6 \times 2.5 = 15$
- (a) Role of biotechnology in agriculture
 - (b) Transgenic plants
 - (c) Structure and function of lipids
 - (d) Genetic material
 - (e) Economic importance of microbes
 - (f) Structure of prokaryotic cell

Unit-I

2. What are microbes? Explain in detail the types, Important features and economic importance of microbes. 15

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3. Explain the following in detail :

- (a) Gene interaction 7.5
(b) Mitosis 7.5

Unit-II

4. What is genetic material? Explain its types and their structures. Explain the different models. 15

5. Explain in detail :

- (a) Structure and function of proteins 7.5
(b) Different types of carbohydrates 7.5

Unit-III

6. What is genetic engineering? Explain the process of rDNA technology in detail with diagrams. 15

7. Explain in detail :

- (a) DNA modifying enzymes 7.5
(b) Plasmid vector 7.5

Unit-IV

8. Explain the various roles of Biotechnology in betterment of environment in detail. 15

9. Explain in detail :

- (a) Various application of enzyme biotechnology 7.5
(b) Role of biotechnology in medicine 7.5

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