

**3018**

**B. Tech. (Mechanical Engg.) – 3<sup>rd</sup> 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

**3018-P-2-Q-9 (24)**

**[P.T.O.]**

**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