

BT-4/M-24

42040

BIOLOGY

BS-141-A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

### Unit I

1. Describe the ultrastructure of a typical Prokaryotic cell indicating all the cell organelles with the help of well-labelled diagram. 15
2. Write short notes on the following : 15
  - (i) Differentiate between Plant and Animal cell
  - (ii) Characteristic features of living organisms.

### Unit II

3. Discuss the general characteristics and classification of carbohydrates in details with the help of suitable examples. 15
4. Write short notes on the following : 15
  - (i) Mechanism of enzyme action
  - (ii) Effect of substrate concentration on enzyme activity.

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### Unit III

5. Discuss the concepts of recessiveness and dominance in genetics with the help of suitable examples. 15
6. Write short notes on the following : 15
- (i) Mitosis and meiosis cell division
  - (ii) Evidence of nucleic acids as genetic material.

### Unit IV

7. Discuss the Glycolysis pathway and Krebs cycle with the help of well-labelled diagrams and highlight the significance of each to the living organism. 15
8. Write short notes on the following : 15
- (i) Role of biology in agriculture and health
  - (ii) Concept of species and strains in microbiology.