

[Time: 03 Hours.]

[Marks: 100]

- N.B:** 1. All questions are compulsory and carry equal marks.
2. Figures to the right indicate full marks.
3. Draw neat and labelled diagrams wherever necessary.
4. Answer the questions in proper order.

Q. 1 Describe Any Two of the following: (20)

- Classification of enzymes based on Enzyme Commission.
- Factors affecting enzyme activity.
- Enzyme inhibition with reference to competitive inhibitor and its kinetics.

Q. 2 Explain Any Two of the following: (20)

- Non shivering thermogenesis.
- Physiological adaptations in terrestrial animals with reference to osmoregulation.
- Mechanisms of heat loss.

Q. 3 Give an account on Any Two of the following: (20)

- Mechanisms of hormone action.
- The histological structure of thyroid gland, its hormones, and their functions.
- Histological structure of Pancreas and its hormones.

Q. 4 Describe Any Two of the following: (20)

- Effect of temperature, pH and CO₂ in cell culture.
- Types of culture media.
- Preparation of cells for tissue culture.

Q. 5 Write short notes on: (Any Four) (20)

- Isozymes.
- Circadian rhythms.
- Disorders of over secretion of growth hormone of Pituitary gland.
- Parathormone.
- Importance of sterility in cell culture.
- Coverslip culture.
