

**B.Sc. Semester - 3 (CBCS) Examination**  
**Oct/Nov - 2023 (OLD COURSE)**  
**BIO-TECHNOLOGY(CORE)**

**Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que.1(A) Answer the following. (Any one Out of Two) (07)
1. Determination of the Michaelis-Menten constant.
  2. Understanding Enzyme Inhibition with Mechanisms and Categories.
- Que.1(B) Attempt any one. (Out of Two) (04)
1. Explain: Acid base Catalysis.
  2. Discuss: Proximity and Orientation effects of Catalytic Mechanism.
- Que.1(C) Attempt any three. (Out of Five) (03)
1. Define: Enzymes.
  2. What is Coenzymes?
  3. Explain: Allosteric Regulation.
  4. The coenzyme is often a metal. (True/False)
  5. Blocking of enzyme action by blocking its active site is called as \_\_\_\_\_ inhibition. (Competitive inhibition, Non-competitive inhibition)
- Que.2(A) Answer the following. (Any one Out of two) (07)
1. Write detailed note on TCA cycle.
  2. Discuss in detail: Gluconeogenesis.
- Que.2(B) Attempt any one. (Out of two) (04)
1. Describe in short: Glycolysis.
  2. Discuss:  $\beta$ -oxidation of fatty acids.
- Que.2(C) Attempt any three. (Out of Five) (03)
1. Full form of HMP.
  2. Define: Metabolism.
  3. Write the three components of ETC complex.
  4. Citric acid is first product of citric acid cycle. (True/False).
  5. \_\_\_\_\_ pyruvate molecules are generated after breakdown of one glucose molecule.
- Que.3(A) Answer the following. (Any one Out of two) (07)
1. Explain in brief: Urea Cycle.
  2. Explain in detail: Biosynthesis of Nucleic Acid.
- Que.3(B) Attempt any one. (Out of two) (04)
1. Write the brief about Photosynthesis.
  2. Short note on Inborn Errors of Metabolism.
- Que.3(C) Attempt any three. (Out of Five) (03)
1. Explain: Protein.
  2. What is Transamination?
  3. Give the full form of ATP.
  4. Deamination means amine group is removed from a protein. (True/False)
  5. Decarboxylation means replacement of a \_\_\_\_\_ with a hydrogen atom. (Carboxyl group, Carbon Dioxide)
- Que.4(A) Answer the following. (Any one Out of two) (07)
1. Explore: Categories of Animal Hormones.
  2. Write the short note on: Plant Hormones and Their Functions.

- Que.4(B) Attempt any one. (Out of two) (04)
1. Explain in short: Endocrine.
  2. Short note on functions of animal hormones.
- Que.4(C) Attempt any three. (Out of Five) (03)
1. Explain: Exocrine
  2. Define: Hormones
  3. Write the full name of TSH.
  4. Insulin is plant hormone. (True/False)
  5. Growth hormone is secreted by \_\_\_\_\_ gland. (Pituitary gland, Adrenal gland)
- Que.5(A) Answer the following. (Any one Out of two) (07)
1. Discuss: Role of signal transduction.
  2. Write the detailed note on Signal transduction cascade.
- Que.5(B) Attempt any one. (Out of two) (04)
1. Write in short: Active transport.
  2. Give the basic overview of Passive transport.
- Que.5(C) Attempt any three. (Out of Five) (03)
1. What is antiport?
  2. Define: Molecular Transportation.
  3. Write any two name of cell cycle regulator.
  4. Explain function of membrane in transportation.
  5. Steroid is widely present in bacterial cell membrane. (True/False)
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