

B.Sc. Semester - 5 (Remedial) (CBCS) Examination**March/April-2024 (NEW COURSE)****Prokaryotic Metabolism(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) Give specific answers. (04)
1. What are enzymes?
 2. What is metabolism?
 3. Define enzyme kinetics.
 4. Enzyme is made up of proteins. (True/False).
- Que.1(B) Answer in Brief. (Any one out of two) (03)
1. Role of ATP in metabolism.
 2. Describe the significance of allosteric regulation in metabolic pathways.
- Que.1(C) Write a Note on. (Any one out of two) (07)
1. Enzyme Inhibition.
 2. Derivation of the Michaelis – Menten Equation.
- Que.2(A) Give specific answers. (04)
1. Define: Carbohydrates.
 2. Protein is made up of _____.
 3. TCA cycle is also known as _____.
 4. How many ATP are synthesized via glycolysis of a single molecule of glucose?
- Que.2(B) Answer in Brief. (Any one out of two) (03)
1. Stickland Reactions.
 2. Draw the flow chart of Glycolysis.
- Que.2(C) Write a Note on. (Any one out of two) (07)
1. Oxidation of Fatty Acids.
 2. Short note on: TCA cycle and its regulation.
- Que.3(A) Give specific answers. (04)
1. What is photosynthesis?
 2. Write the full name ETC.
 3. Name any one name of bacterial pigment.
 4. Glucose is key molecules in ETC. (True/False)
- Que.3(B) Answer in Brief. (Any one out of two) (03)
1. Different modes of ATP generation.
 2. How to use of Isotopic Labeling for studying biosynthesis.
- Que.3(C) Write a Note on. (Any one out of two) (07)
1. Bacterial photosynthesis.
 2. Short note on: Components of ETC.
- Que.4(A) Give specific answers. (04)
1. Define: Halophiles.
 2. Define: Nitrogen fixation
 3. What do you mean of chemotrophs?
 4. Write any two name of lactic acid bacteria?
- Que.4(B) Answer in Brief. (Any one out of two) (03)
1. How Sulfur Oxidizers involve in metabolism?
 2. Give in brief: Carbon- Assimilation in Methanogens.

- Que.4(C) Write a Note on. (Any one out of two) (07)
1. Write short note on: Nitrogen cycle
 2. Explain: Fermentative patterns of gram-negative.
- Que.5(A) Give specific answers. (04)
1. Define osmosis.
 2. Define: Transport
 3. Explain: Passive transport
 4. Bacterial Plasma membrane is made up of Cellulose (True/False)
- Que.5(B) Answer in Brief. (Any one out of two) (03)
1. Membrane proteins with example.
 2. Explain: Mechanosensitive channels.
- Que.5(C) Write a Note on. (Any one out of two) (07)
1. Active transport.
 2. Quorum sensing.
