

B.Sc. Semester - 5 (Remedial) (CBCS) Examination**February/March. -2020****PROCARYOTIC 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) Answer in detail: (Any one) (07)**
1. Derive Michaelis-Menten Equation.
 2. Explain in detail Regulatory Enzymes.
- Que-1 (B) Answer the following. (Any one) (04)**
1. Energy rich compounds.
 2. Role of ATP in Metabolism.
- Que-1 (C) Answer the following. (Any three) (03)**
1. What is Free energy?
 2. What is Precursor?
 3. Define: Allosteric Enzymes.
 4. What is Monod Equation?
 5. Give Full form: NADPH.
- Que-2 (A) Answer in detail. (Any one) (07)**
1. Explain in detail Glycolysis and its regulation.
 2. Explain Amino acid catabolism in detail.
- Que-2 (B) Answer the following. (Any one) (04)**
1. Write a note on: Stickland reaction.
 2. Write a note on: Beta oxidation of Fatty acids.
- Que-2 (C) Answer the following. (Any three) (03)**
1. What is Glyoxylate cycle?
 2. What is HMP Shunt?
 3. Enlist any two regulatory enzyme of Citric acid cycle.
 4. What is ED Pathway?
 5. Who elucidated Citric acid cycle?
- Que-3 (A) Answer in detail. (Any one) (07)**
1. Write a detailed note on: ETC
 2. Explain in detail: Bacterial Photosynthesis.
- Que-3 (B) Answer the following. (Any one) (04)**
1. Explain use of Biochemical mutants in study of biosynthesis.
 2. Explain: Anaerobic respiration.
- Que-3 (C) Answer the following. (Any three) (03)**
1. What is substrate level phosphorylation?
 2. What is isotope?
 3. Enlist components of ETC.
 4. What is Photophosphorylation?
 5. In Bacteria where photosynthesis takes place?

- Que-4 (A) Answer in detail. (Any one) (07)**
1. Write a detailed note on fermentative pattern of Gram Negative Bacteria.
 2. Discuss in detail: Pattern of Carbohydrate fermentation in lactic acid bacteria.
- Que-4 (B) Answer the following. (Any one) (04)**
1. Write a note on: Iron bacteria.
 2. Write a note on: Photophosphorylation in *Halobacterium*.
- Que-4 (C) Answer the following. (Any three) (03)**
1. Define: Chemoautotrophs.
 2. Define: Nitrifying bacteria.
 3. Name Sulfur oxidizer bacteria.
 4. Define: Methanogens.
 5. Define: Archaeobacteria.
- Que-5 (A) Answer in detail. (Any one) (07)**
1. Write a detailed note on Signal Transduction.
 2. Explain in detail: Active Transport and Passive Transport.
- Que-5 (B) Answer the following. (Any one) (04)**
1. Explain: Quorum Sensing.
 2. Explain: Mechanosensitive channels.
- Que-5 (C) Answer the following. (Any three) (03)**
1. What is PEP-PTS system?
 2. Enlist any two membrane proteins.
 3. What is Iron Transport?
 4. What is Chemiosmosis Driven Transport?
 5. What is Flip Flop movement?
