2024/12

SET A

M.Sc. MICROBIOLOGY
FIRST SEMESTER
MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY
MMB-103

[USE OMR FOR OBJECTIVE PART]

Duration: 1.30 hrs. **Full Marks: 35**

Objective

Time: 15 min. **Marks: 10**

Choose the correct answer from the following: *1X10=10*

1. The enzyme involved in the conversion of 6 phosphogluconate to 2 keto-3 deoxy 6 phosphogluconate
   a. Glucose 6 phosphate
   b. 6- Phosphogluconatehydratase
   c. 6- Phosphogluconatedehydratase
   d. 2 keto 3 deoxy 6 phosphogluconatealdolase

2. In aerobic respiration , the terminal electron acceptor is
   a. Oxygen
   b. Nitrogen
   c. Hydrogen
   d. Nitrate

3. The reaction, where small precursor molecules are assembled into larger organic molecules is referred as
   a. Anabolism
   b. Catabolism
   c. Metabolism
   d. None

4. When acetate is the sole source of carbon for some microorganism the cycle which is used is called
   a. Pentose phosphate pathway
   b. Glycolytic pathway
   c. Glyoxylate pathway
   d. Oxaloactate pathway

5. In anaerobic respiration , the terminal electron acceptor is
   a. Oxygen
   b. Nitrate
   c. Sulphate
   d. None

6. Which of the following Biomolecules simply refers to as "Staff of life"?
   a. Lipids
   b. Proteins
   c. Vitamins
   d. Carbohydrates

7. Which of the following monosaccharides is the majority found in the human body?
   a. D-type
   b. L-type
   c. LD-types
   d. None of the above

8. Which of the following factors is not responsible for the denaturation of proteins?
   a. Heat
   b. Charge
   c. pH change
   d. Organic solvents

9. Which of the following is responsible for specifying the 3D shape of a protein?

a. The peptide bond
b. The amino acid sequence
c. Interaction with other polypeptides
d. Interaction with molecular chaperons

10. Which of the following statements is true about proteins?

a. Proteins are made up of amino acids.
b. Proteins are essential for the development of skin, teeth and bones.
c. Protein is the only nutrient that can build, repair and maintain body tissues.
d. All of the above

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(Descriptive)

Time : 1 hrs. 15 min. **Marks : 25**

[Answer question no.1 & any two (2) from the rest]

1. Describe the glycolytic pathway and ED pathway with the net ATP synthesis **5+5=10**

2. Explain the anaerobic respiration in bacteria with a neat diagram. **10**

3. Define Oxidative phosphorylation? Explain the ETC pathway with a neat diagram **2+8=10**

4. Define carbohydrates and write a note on their classification **5+5=10**

5. Define proteins ? Write a note on zwitter ion formation **10**

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