

B.Sc. (CBCS Pattern) Semester-III
USMBT05 - Microbiology Paper-I : Microbial Physiology and Metabolism

P. Pages : 2

Time : Three Hours



GUG/S/25/11614

Max. Marks : 50

1. Write in detail about Bacterial Growth Curve. **10**

OR

- a) Write about Diauxic Growth. **2½**
- b) Classify the bacteria based on Temperature requirement. **2½**
- c) Describe the Coulter counter for bacterial count. **2½**
- d) Explain Turbidostat method for continuous culture. **2½**

2. Explain the classification of Enzymes. **10**

OR

- a) Describe the effect of Temperature on enzyme activity. **2½**
- b) Explain the Lock and Key model. **2½**
- c) write a note on the Competitive inhibition. **2½**
- d) Write general characteristics of enzyme. **2½**

3. Describe the Glycolysis pathway in detail. **10**

OR

- a) Describe Beta oxidation of fatty acid. **2½**
- b) Write about Urea Cycle. **2½**
- c) Give the outline of Metabolic Mill. **2½**
- d) Give the outline of TCA cycle. **2½**

4. Describe the electron transport chain in detail. **10**

OR

- a) Write about cyclic photophosphorylation. **2½**
- b) Explain the chemiosmotic coupling hypothesis. **2½**

- c) Explain production of alcohol by fermentation. 2½
- d) Describe substrate level phosphorylation reactions. 2½

5. Answer **any 10** of the following (1 mark each).

- a) What are Halophiles? 1
- b) What is Binary Fission? 1
- c) What are Mesophiles? 1
- d) What is Holoenzyme? 1
- e) What is activation energy? 1
- f) What is Active site? 1
- g) What is Catabolism? 1
- h) Give the location of TCA cycle in Cell. 1
- i) How many ATP is produced by one FADH molecule. 1
- j) What is location of ETC in cell? 1
- k) What is Oxidative Phosphorylation? 1
- l) Give the example of high energy phosphate compounds. 1
