

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

P. Pages : 2

Time : Three Hours



**GUG/W/24/11614**

Max. Marks : 50

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**1.** Describe in detail about Bacterial Growth curve. **10**

**OR**

- a) Describe the logarithmic phase in growth curve. **2½**
- b) Describe Turbidostat of continuous culture. **2½**
- c) Explain pH as a physical condition for bacterial growth. **2½**
- d) Explain Breed's method in brief for quantitative measurement of bacteria. **2½**

- 2.**
- a) Describe the effect of pH on enzyme activity. **2½**
  - b) Add a note on competitive inhibition. **2½**
  - c) Give the general characteristics of enzyme. **2½**
  - d) Explain Emil Fischer model of enzyme substrate reaction. **2½**

**3.** Describe in detail EMP pathway with diagrammatic representation. **10**

**OR**

- a) Give the outline Urea Cycle. **2½**
- b) Give outline of Beta-Oxidation Pathway. **2½**
- c) Describe anaplerotic reaction with suitable example. **2½**
- d) Write a short note on metabolic mill. **2½**

**4.** Define Phosphorylation? Give details about cyclic & Non-cyclic photophosphorylation. **10**

**OR**

- a) Give short note on Lactic acid fermentation. **2½**
- b) Describe the substral level phosphorylation reaction. **2½**
- c) Give an account on alcohol fermentation in short. **2½**
- d) Give short note on High energy rich compounds. **2½**

5. Write **any ten** (each carry **1** mark)

**10**

- a) What is Diauxic growth?
- b) What are mesophilic bacteria?
- c) Write the generation time for Escherichia Coli.
- d) What is active site?
- e) Define km.
- f) What is Holoenzyme.
- g) What is Anabolism?
- h) What is Amphibolism?
- i) Write the number of ATPs are generated in TCA cycle.
- j) What is full form of NADH?
- k) What is the last electron acceptor in ETC.
- l) Define oxidative phosphorylation.

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