

USMBT05 - Microbiology Paper-I : Microbial Physiology And Metabolism

P. Pages : 2

GUG/S/19/11614

Time : Three Hours



Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

- 1.** What is the concept of continuous culture? Describe working of chemostat and Turbidostat. **10**
- OR**
- a) Describe the logarithmic phase in growth curve. **2½**
- b) Describe generation time and growth rate. **2½**
- c) Explain working of coulter counter for quantitative measurement of growth. **2½**
- d) Explain temperature as a physical condition for growth. **2½**
- 2.** Derive Michaelis - Menten equation for enzyme kinetics. Add note on LB plot. **10**
- OR**
- a) Add a note on competitive inhibition. **2½**
- b) Describe effect of temperature on enzyme activity. **2½**
- c) Explain Emil Fischer model of enzyme substrate reaction. **2½**
- d) Give an account on allosteric modulators. **2½**
- 3.** Describe in detail TCA cycle with diagrammatic representation. **10**
- OR**
- a) Give outline of HMP pathway **2½**
- b) Describe outline of metabolic mill. **2½**
- c) Describe metabolism, Anabolism and catabolism in short. **2½**
- d) Describe Anaplerotic reactions with suitable example. **2½**
- 4.** Give in detail cyclic and noncyclic photophosphorylation. **10**
- OR**
- a) Give an account on alcohol fermentation in short. **2½**
- b) Describe the role of ATP as high energy rich compounds. **2½**
- c) Explain chemiosmotic coupling hypothesis. **2½**
- d) Describe enzymes of electron transport chain. **2½**

5. Solve any ten.

- a) What is Diauxic growth. 1
- b) Which paper is used for membrane filter. 1
- c) Define synchronous culture. 1
- d) What are co-factors? 1
- e) What is active site? 1
- f) What is isoenzyme. 1
- g) What are cytochromes? 1
- h) What is Amphibolism? 1
- i) What are end products of ED pathway? 1
- j) Define substrate level phosphorylation? 1
- k) What is full form of NADH? 1
- l) Write the number of ATPs generated in alcohol fermentation. 1
