

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

P. Pages : 2

Time : Three Hours



GUG/S/23/11614

Max. Marks : 50

1. Describe the various continuous culture methods in detail. **10**

OR

- a) Explain mathematical expression of growth. **2½**
- b) Explain Diauxic growth. **2½**
- c) Write short note on Chemostat. **2½**
- d) Describe exponential growth rate constant. **2½**

2. What is enzyme kinetics? Describe Michaelis Menton's equation and Lineweaver Burk plot. **10**

OR

- a) Describe competitive enzyme inhibition. **2½**
- b) Explain mechanism of enzyme action. **2½**
- c) Explain how temperature affect enzyme action. **2½**
- d) Describe lock and key model. **2½**

3. Describe EMP pathway in detail. **10**

OR

- a) Draw the steps of Urea cycle. **2½**
- b) Write short notes on β – oxidation. **2½**
- c) Draw the steps of TCA Cycle. **2½**
- d) Explain Anapleurotic reaction of TCA Cycle. **2½**

4. Explain Electron Transport Chain in detail. **10**

OR

- a) Describe Lactic acid fermentation. **2½**
- b) Describe non cyclic photophosphorylation. **2½**

c) Write about chemiosmotic coupling hypothesis. 2½

d) Explain Acetone butanol fermentation. 2½

5. Solve **any ten** questions. **1x10**

i) Define Diauxic growth?

ii) What is stationary phase?

iii) What is generation time?

iv) What is Coenzyme?

v) What are Apoenzymes?

vi) What is Holoenzyme?

vii) What is Phosphorylation of Glucose?

viii) What is Isomerization?

ix) What is mixed acid fermentation?

x) Give full form of NADH?

xi) What is Fermentation?

xii) Define high energy rich compounds.
