USMBT05 - Microbiology Paper-I : Microbial Physiology and Metabolism

P. Pages : 1

GUG/W/22/11614

Time : Three Hours

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Max. Marks : 50

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

1. Discuss in detail continuous culture of micro – organisms. **10**
   OR
   a) Describe binary fission as a asexual reproduction in bacteria. **2½**
   b) Classify the bacteria on the basis of temperature requirement for growth. **2½**
   c) Add a note on Gaspak system for anaerobic cultivation. **2½**
   d) Discuss about coulter counter. **2½**

2. Describe in detail competitive inhibition with suitable example. **10**
   OR
   a) Write characteristics of enzymes. **2½**
   b) Add a note on Line Weaver Burk Plot. **2½**
   c) Describe of enzyme classification of oxidoreductase and ligase. **2½**
   d) Explain how pH affects enzyme activity? **2½**

3. Describe in detail EMP pathway and energy generation. **10**
   OR
   a) Differentiate between Anabolism and Catabolism. **2½**
   b) Give outline of ED pathway. **2½**
   c) Discuss in short metabolic mill. **2½**
   d) Write about of Urea Cycle. **2½**

4. Give in detail cyclic and non cyclic phosphorylation with suitable example. **10**
   OR
   a) Write general features of electron transport chains. **2½**
   b) Discuss in short fermentation with example. **2½**
   c) Write chemiosmotic coupling hypothesis. **2½**
   d) Add a note on high energy rich compounds. **2½**

5. Solve **any ten** (1 marks each)
   a) Define generation time? **1**
   b) What is synchronous growth? **1**
   c) What are halophiles? **1**
   d) What are allostini enzyme. **1**
   e) What is non competitive inhibition? **1**
   f) How temperature affects activity of enzyme? **1**
   g) What is amphibolism? **1**
   h) What is key compound of TCA cycle? **1**
   i) Define anaplerotic reactions? **1**
   j) What is final electron acceptor in EIC. **1**
   k) Give the name of bacteria for acetone butanol fermentation. **1**
   l) Give the role of succinate dehydrogenase. **1**

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