



MJ-21041

Seat No. _____

Second Year B. Sc. (Sem. IV) Examination

April / May – 2012

Microbiology : Paper - MB-401

Microbial Chemistry & Physiology - II

Time : 2 Hours]

[Total Marks : 75

- Instructions :**
- (1) All questions are compulsory.
 - (2) Figures at the right indicate marks allotted to the questions.

- 1 (a) Answer in short : 5
- Which enzyme was first isolated in pure form ? By whom ?
 - Give symbol of any five most essential element of the living system.
 - What is V max and Michael's Constant ?
 - List and define sub atomic particles of an atom.
 - Define an Element
- (b) Write an essay on Chemical Bonds ? 10

OR

- 1 Write notes on : (five marks each) 15
- Oxidation - reduction reactions
 - Buffers
 - Biochemistry as inter disciplinary science.
- 2 (a) Answer in short : 15
- Define Carbohydrate and give its general empirical formula.
 - How osazone is formed ?
 - What is inuline ? What is its source ?
 - Give significance of Hyluronic acid.
 - List physical agent that denatures Protein.
- (b) Explain Properties of Protein. 10

OR

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- 2** Write notes on : (Five marks each) **15**
- Functions of carbohydrate
 - Primary structure of protein
 - Classify Amino acid with aliphatic side chain with structure.

- 3** (a) Answer in short : **5**
- Define Glycolipids and give their functions.
 - Define Iodine number and give its significance.
 - List nitrogenous bases found in Nucleic acid.
 - Give name of sterols which occurs in plants.
 - Who discover DNA ? In which year ?
- (b) Explain the structure of DNA. **10**

OR

- 3** Write notes on (Five marks each) **15**
- Classification of Lipids
 - Types of RNA
 - Function of nucleotides.

- 4** (a) Answer in short : **5**
- What is budding ? Name two bacteria in which budding is observed ?
 - Define and give example of Thermophilic Bacteria.
 - Define Gr. and G^t.
 - What is Kolle flask ? What is its use ?
 - Give example of inorganic solidifying agent.
- (b) Discuss normal growth cycle of Bacteria. **10**

OR

- 4** Write notes on (Five marks each) **15**
- Synchronous growth
 - Bacteriological Media
 - Viable Count technique

- 5** (a) Answer in short : **5**
- Who solved the controversy of Pasteur and Liebig ? How ?
 - Define Enzyme.

- Give two examples of vitamins and their coenzyme forms.
 - Steps in resting cell technique.
 - What are constitutive enzymes ?
- (b) Explain techniques for enzyme preparations. **10**

OR

- 5** Write notes on (five marks each) **15**
- Conditions affecting enzyme activity.
 - Difference between Prokaryotic and Eukaryotic enzyme regulation.
 - Major classes of Enzymes with their catalytic reaction.
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