

**FACULTY OF SCIENCE**  
**M.Sc. I – Semester Examination, December 2014**

**Subject: Microbiology**  
**Paper – IV: Biochemistry**

**Time: 3 Hours**

**Max.Marks: 80**

**Note: Answer all questions from Part - A and Part - B.**  
**Each question carries 4 marks in Part - A and 12 marks in Part - B.**

**PART – A (8 x 4 = 32 Marks)**  
**[Short Answer Type]**

- 1 Buffer
- 2 Free energy change of a reaction
- 3 Complex I in ETC
- 4 ATP synthase
- 5 Prostaglandins
- 6 Nucleotides
- 7 Aromatic amino acids
- 8 Peptide bond.

**PART – B (4 x 12 = 48 Marks)**  
**[Essay Answer Type]**

- 9 a) Write an account of high energy compounds in metabolism.  
**OR**  
 b) Define pH and explain its biological significance. How will you determine pH of a solution.
- 10 a) Describe the components of electron transport chain with sites of oxidative phosphorylation and discuss the inhibitors of ETC.  
**OR**  
 b) Give an account of bacterial photosynthesis.
- 11 a) What do you mean by de novo synthesis and salvage pathways of nucleotide synthesis. Discuss pyrimidine nucleotide biosynthesis in bacteria.  
**OR**  
 b) Write note on different classes of bacterial lipids giving emphasis to their structure and functions.
- 12 a) Write note on:
  - i) Urea cycle
  - ii) Tertiary structure of protein**OR**  
 b) Discuss the reactions in amino acid degradation and biosynthesis.

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