

FACULTY OF SCIENCE

M.Sc. I-Semester Examination, December 2013

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 (8X4 = 32 Marks)**  
**[Short Answer Type]**

1. Role of pH in Biology
2. Equilibrium constants
3. Cytochrome oxidase
4. Bacterial chlorophyll
5. Triglycerides
6. Properties of Nucleic acids
7. Essential amino acids
8. Properties of proteins

**PART – B (4x12 = 48 Marks)**  
**[Essay Answer Type]**

- 9.(a) Describe biological redox systems.  
OR  
(b) Write an essay on pH and the biomolecules contributing the buffering of cellular reactions.
- 10.(a) Describe Mitochondrial transport systems.  
OR  
(b) Write an essay on control of oxidative phosphorylation.
- 11.(a) Describe the denovo synthesis of pyrimidines.  
OR  
(b) Write an essay on prostaglandins.
- 12.(a) Describe non-aromatic amino acid biosynthesis from  $\alpha$ -ketoglutarate.  
OR  
(b) Describe the amino acid classification.

\*\*\*\*