

**FACULTY OF SCIENCE****M. Sc-I – Semester Examination, January 2018****Subject : Biochemistry****Paper – I****Chemistry and Metabolism of Proteins and Lipids and Porphyrins****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 Structure of any three unusual amino acids and their significance.
- 2 Small peptides
- 3 Role of glutamate in ammonia circulation
- 4 Glucose alanine cycle
- 5 Phospholipids
- 6 Gangliosides
- 7 Formation of ketone bodies
- 8 Thromboxanes

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

- 9 (a) Write down the classification and structure of 20 amino acids.  
**OR**  
(b) Give an account of :  
(i) Secondary structure of proteins  
(ii) Protein-protein interaction
- 10 (a) Write down the steps for amino acids degraded to succinyl Co-A, and the salient features of homocystenuria and methyl malonyl acidemia.  
**OR**  
(b) Give an account of dietary fate of proteins and the pathway amino acids degraded to pyruvate.
- 11 (a) Write the general structures and properties of sterols and steroids. Add a note on the steroid hormones.  
**OR**  
(b) Explain the structural composition and biological roles of :  
(i) Heme  
(ii) Prostacylins and Leukotrienes
- 12 (a) Write down the steps in  $\beta$ -oxidation of fatty acids, its regulation and significance.  
**OR**  
(b) Give an account of :  
(i) Genetic defects in lipid metabolism  
(ii) Sphingolipids