

**FACULTY OF SCIENCE** Code No. 3011  
B.Sc. I-Semester (CBCS) Examination, November / December 2018

**Subject : Biochemistry**

**Paper – I : Chemistry of Biomolecules**

**Time : 3 Hours**

**Max. Marks: 80**

**PART – A (5 x 4 = 20 Marks)**  
**(Short Answer Type)**

**Note : Answer any FIVE of the following questions.**

- 1 Stereochemistry with reference to carbohydrates.
- 2 Scope of biochemistry
- 3 Structure of Glucose and Fructose
- 4 Mutarotation
- 5 Essential Fatty acids
- 6 Amphipathic lipids
- 7 Ninhydrin reaction
- 8 Denaturation of proteins

**PART – B (4 x 15 = 60 Marks)**  
**(Essay Answer Type)**

**Note: Answer ALL questions.**

- 9 (a) Explain in detail the Henderson-Hasselbalch equation. Add a note on stereochemistry of amino acids.  
**OR**  
(b) Justify water as a biological solvent. Add a note on Biological Buffers.
- 10 (a) Discuss the structure and function of storage polysaccharides. Add a note on bacterial cell wall polysaccharides.  
**OR**  
(b) Explain the reaction of monosaccharides.
- 11 (a) Write the classification of lipids with suitable examples.  
**OR**  
(b) Explain in detail the fluid mosaic model. Add a note on sphingolipids.
- 12 (a) Discuss the structural organization of proteins and highlights the forces that stabilize the structure of proteins.  
**OR**  
(b) Explain the nature and conformation of peptide bond. Add a note on Glutathione and Enkephalin.

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