

**FIRST SEMESTER M.Sc. DEGREE EXAMINATION, FEBRUARY 2013**

(CCSS)

General Biotechnology

GBI C2—BIOMOLECULES

(2010 admissions)

Time : Three Hours

Maximum : 36 Weightage

**Section A***Answer **all** questions.**Each question carries 1 weightage.*

1. What are essential fatty acids ?
2. Define  $R_t$  value.
3. What are isoprenoids ?
4. Why glucose is said to be a reducing sugar ?
5. What is the significance of Henderson-Hasselbalch equation ?
6. Define enthalpy.
7. What do you know about isoelectric pH ?
8. Name two techniques employed for studying protein structure.
9. What do you know about phosphodiester bond ?
10. Distinguish between Globular proteins and Fibrous proteins with examples.

**(10 x 1 = 10 weightage)****Section B***Answer any **seven** questions.**Each question carries 2 weightage.*

11. What is meant by mutarotation ?
12. **Give** an idea about the principle behind NMR spectroscopy.
13. What are the major functions of secondary metabolites in plants ?
14. Explain the principle behind SDS-PAGE.
15. Explain the application of Ramachandran Map.
16. Give an idea about the biological significance of diffusion.

**Turn over**

17. Draw the structure of a purine and a pyrimidine nucleotide.
18. Mention the functions and structure of phospholipids.
19. How do buffers act ? Explain with an example.
20. Differentiate heteropolysaccharides and homopolysaccharides. Give examples.

(7 x 2 = 14 weightage)

### Section C

*Answer any two questions.  
Each question carries 6 weightage.*

21. How laws of thermodynamics are applicable to biological system ?
22. Write a note on the structure and function of fat soluble vitamins.
23. Give an idea about various types of chromatographic techniques.

(2 x 6 = 12 weightage)