

**F. Y. B. SC. (BIOTECHNOLOGY) SEM – I (CBCS - 2015**  
**COURSE) : SUMMER - 2018**  
**SUBJECT : FOUNDATIONS OF CHEMISTRY AND BIOCHEMISTRY**

Day : **Wednesday**  
Date : **04/04/2018**

Time : **10.00 am to 01.00 pm**  
Max. Marks : 60

**S-2018-1044**

**N. B. :**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.**
- 2) Answer **ANY TWO** questions from **Q. No. 2, 3, 4** in Section - I.
- 3) Answer **ANY TWO** questions from **Q. No. 6, 7, 8** in Section - II.
- 4) Figures to the right indicate **FULL** marks.
- 5) Answers to both the sections should be written in the **SEPARATE** answer books.
- 6) Draw structures and labelled diagram **WHEREVER** necessary.

**SECTION - I**

- Q.1** Answer **ANY FIVE** of the following: (10)
- a) Draw the structure of D and L glyceraldehyde.
  - b) Name the bond connecting the two monomers in a disaccharide unit.
  - c) What are lectins?
  - d) Define biochemistry.
  - e) What is the difference between oil and fats?
  - f) Give names of any 2 structural lipids.
- Q.2** Answer the following: (10)
- a) Define epimers. Explain epimers of glucose with their structure.
  - b) What are conjugated sugars? Add a note on their importance.
- Q.3** Explain the following: (10)
- a) Describe the various biological functions of lipids.
  - b) Differentiate between starch and cellulose.
- Q.4** Write short notes on the following: (10)
- a) Water as an universal solvent
  - b) Mutarotation

**SECTION - II**

- Q.5** Answer the following: (10)
- a) What is pH meter? Describe working, principle and application of pH meter.
  - b) What are lipid conjugates? Explain their biological functions.
- Q.6** Answer in brief: (10)
- a) What is chromatography? Explain various types of chromatographic technique.
  - b) Differentiate between saturated and unsaturated fats.
- Q.7** Explain the following: (10)
- a) What is colorimetry? Add a note on Beer – Lambert's law.
  - b) What are true solutions? Explain the colligative properties of true solution.
- Q.8** Explain the following: (10)
- a) What are steroids? Explain the biological functions of cholesterol.
  - b) Define normality. How will you make 200ml, 5 N NaCl solution (Mol. wt. of NaCl = 58.5)

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