

**F. Y. B. SC. (BIOTECHNOLOGY) SEM – I (CBCS - 2015  
COURSE) : WINTER - 2017  
SUBJECT : FOUNDATIONS OF CHEMISTRY AND BIOCHEMISTRY**

Day : **Monday**  
Date : **06/11/2017**

**W-2017-0933**

Time : **02.00 PM TO 05.00 PM**  
Max. Marks : **60**

**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) Define epimers.
  - b) What are homo polysaccharides? Give one example.
  - c) Draw structure of any two disaccharide.
  - d) Name the various conjugated sugars.
  - e) What are reducing sugars? Give two examples.
  - f) Why cellulose is not digested by humans?
- Q. 2** Answer the following: **(10)**
- a) Describe why water is called as an universal solvent.
  - b) What are carbohydrates? Explain the classification of carbohydrate based on number of monomer units.
- Q. 3** Explain the following: **(10)**
- a) What are anomers? Explain mutarotation in detail.
  - b) Describe structure, function and significance of cholesterol in detail.
- Q. 4** Write short notes on the following: **(10)**
- a) ABO blood groups
  - b) Fatty acids

**SECTION - II**

- Q. 5** Answer the following: **(10)**
- a) Describe the classification of lipid based on functional groups, giving example of each class.
  - b) What is buffer? What is the significance of biological buffers?
- Q. 6** Answer in brief: **(10)**
- a) What is spectroscopy? Explain Beer – Lambert's law.
  - b) What are trans fats? Explain the process of rancidity in lipids.
- Q. 7** Explain the following: **(10)**
- a) What are colloids and emulsions? Describe in brief.
  - b) Explain various biological functions of lipids.
- Q. 8** Explain the following: **(10)**
- a) Define normal and molar solutions. Describe how will you make 500 ml, 2 N NaOH solution (Given mol. wt. of NaOH = 40).
  - b) Write a note on liposomes.

\* \* \* \* \*