

**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.

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