

1127

B.A./B.Sc. (General) First Semester
Bio-Chemistry
Paper - A: Carbohydrates and Lipids

Time allowed: 3 Hours

Max. Marks: 45

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. Explain briefly the following terms:

- a) Buffer
- b) Osmotic pressure
- c) Epimer
- d) Heteropolysaccharides
- e) Deoxy sugars
- f) Iodine value
- g) W-6 fatty acid
- h) Chylomicrons
- i) Bile acids.

(9x1)

UNIT – I

- II. a) Derive an equation to explain how carbonate bicarbonate buffer can resist change in pH within biological system.
- b) If 1.0 ml of 10N NaOH is added to a liter of pure water at pH 7.0, what is the final pH? (5,4)
- III. a) Derive an equation to explain that pure water has pH=7.0.
- b) What do you mean by colligative properties? Explain its significance by giving example. (5,4)

UNIT – II

- IV. a) What do you mean by deoxy and amino derivatives of monosaccharides? Give structure and biological significance of at least one deoxy and amino sugar. (4)
- b) Briefly explain structure and biological significance of (i) chitin (ii) glycogen (2x2½)
- V. a) Explain the structure and function of polysaccharides of bacterial cell.
- b) Discuss the polysaccharides as component of connective tissue. (5,4)

P.T.O.

(2)

UNIT – III

- VI. a) Define fatty acids. What do you mean by essential fatty acids? Explain by giving example. (4½)
- b) Briefly explain following:-
i) Saponification value
ii) Iodine number
iii) Waxes (3x1½)
- VII. a) Explain structure, characteristics and functions of phospholipids.
- b) What do you mean by ether lipids? Explain structure and function of plasmalogens. (5,4)

UNIT – IV

- VIII. a) What are terpenes? Give their classification and biological significance.
- b) Define liposomes and explain its applications. (5,4)
- IX. a) Give a structure of cholesterol and write a short note on steroid hormones.
- b) Explain the biological function of Eicosanoids (5,4)

x-x-x