

2122

B.A./B.Sc. (General) First Semester
Biochemistry

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) Essential fatty acids
- b) Glycosides
- c) Dialysis
- d) Stereoisomers
- e) Cerebrosides
- f) Bile acids
- g) Waxes
- h) Liposomes
- i) Polysaccharide of bacterial cell wall

(9x1)

UNIT - I

II. a) Discuss physical properties of water.

b) Derive Henderson-Hasselbalch equation.

(4,5)

III. a) Define pH and pOH and explain dissociation of water.

b) Explain carbonate bicarbonate buffer in biological system.

(4,5)

UNIT - II

IV. a) Explain homo and heteropolysaccharides with examples.

b) Describe various reactions of monosacchrides.

(4,5)

V. a) Define and classify carbohydrates.

b) Explain structure and biological significance of sucrose and lactose.

(4,5)

P.T.O.

UNIT – III

- VI. a) Explain structure and functions of phospholipids and sphingomyelins.
b) Define and classify fatty acids with examples. (4,5)
- VII. a) Discuss saponification, iodine, acid, acetyl and peroxide values of fats.
b) Write important reactions of functional groups of fatty acids. (4,5)

UNIT – IV

- VIII. a) Give structure and biological significance of cholesterol and steroid hormone.
b) What are lipoproteins? Discuss color reactions of sterol. (4,5)
- IX. a) Explain structure and properties of leukotriene and prostaglandins.
b) Describe classification of terpenes and their general characteristics. (4,5)

x-x-x