

1129

B.A./B.Sc.(General)-1st 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.

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I. Explain briefly the following terms:-

- (a) Dialysis
- (b) pH and pOH
- (c) Stereoisomerism
- (d) Homopolysaccharides
- (e) Glycoproteins
- (f) Sphingomyelins
- (g) Waxes
- (h) Liposomes
- (i) Bile acids

(9×1)

UNIT – I

- II. (a) Derive Henderson-Hasselbalch equation.
- (b) How carbonate bicarbonate buffer can resist change in pH within system?
(4+5)
- III. (a) Discuss physical properties of water.
- (b) Explain structure and dissociation of water.
(4+5)

UNIT-II

- IV. (a) Give structure and biological significance of any two disaccharides.
- (b) What are glycosides and sugar acids? Explain their biological significance with exceptions.
(4+5)
- V. (a) Describe in detail the reactions of sugars.
- (b) Explain briefly the structure and functions of polysacchacides of bacterial cell wall.
(4+5)

P.T.O.

(2)

UNIT-III

- VI. (a) Define and classify fatty acids with examples.
(b) Explain saponification, iodine, acid, acetyl and peroxide values of fats. (4+5)
- VII. (a) Give structure, characteristics and functions of lecithin and cephalin.
(b) Elaborate structure and functions of cerebrosides and gangliosides. (4+5)

UNIT-IV

- VIII. (a) Discuss composition, classification and biological functions of lipoproteins.
(b) Describe classification of terpenes and their general characteristics. (4+5)
- IX. (a) Explain structure and properties of prostaglandin and leukotrienes.
(b) Give a structure of cholesterol and short note on steroid hormone. (4+5)

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