

1128

**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. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. a) Differentiate between:-

- i) Osmosis and dialysis
- ii) Anomers & Epimers
- iii) Saturated and unsaturated fatty acids
- iv) HDL and LDL

(4x2)

b) Write structure of β -D-fructofuranose.

(1)

UNIT - I

II. a) Derive Henderson Hasselbach equation.

b) Define buffer. Name some biological important buffers.

(6,3)

III. a) What makes water a biological important solvent? Explain.

b) What do you understand by colligative properties? Comment on its significance in biology.

(4,5)

UNIT - II

IV. a) Give reaction of monosaccharides with hydrogen cyanide and hydroxylamine.

(2x3)

b) What do you mean by glycoproteins? Differentiate between O-glycoproteins and N-glycoproteins.

(3)

V. a) Elaborate on glycosaminoglycans. Give the structure of any two glycoproteins.

b) Differentiate between starch and glycogen.

(6,3)

(2)

- VII. a) Give the salient features of double helical structure of DNA with the help of diagram.
- b) What do mean by minor bases of DNA. Give structure of any two such bases. (6,3)

UNIT - IV

- VIII. a) What do you mean by porphyrins? Draw structure of porphyrin nucleus.
- b) Write a detailed note on the detection of porphyrins. (6,3)
- IX. Discuss heme and other metalloporphyrins occurring in nature in detail. (9)