

(i) Printed Pages : 3

Roll No.

(ii) Questions : 9

Sub. Code :

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Exam. Code :

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B.A./B.Sc. (General) 3rd Semester

1125

BIOCHEMISTRY

Paper—A : Carbohydrates & Lipid Metabolism

Time Allowed : Three Hours]

[Maximum Marks : 45

Note :— Attempt **five** questions in all. Question No. 1 is compulsory.
Attempt any **one** question each from Section-I to
Section-IV. All questions carry equal marks.

1. Explain briefly the following terms (any **eight**):

- (i) dialysis
- (ii) hydrogen bonding
- (iii) Mutarotation
- (iv) heteropolysaccharides
- (v) w-3 fatty acid
- (vi) iodine value
- (vii) refractive index
- (viii) chylomicrons
- (ix) Leukotrienes.

SECTION—I

2. Define buffer. Derive an equation to explain how carbonate bicarbonate buffer can resist change in pH within biological system.
3. (a) Derive an equation to explain that pure water has $\text{pH}=7.0$.
(b) Write a short note on osmosis.

SECTION—II

4. (a) What do you mean by deoxysugars and amino sugars ? What is their biological importance ? Write structure of any one amino sugar.
(b) Briefly explain :
 - (i) amylopectin
 - (ii) chitin
 - (iii) glycogen.
5. (a) Briefly discuss glycosaminoglycans.
(b) Give reaction of monosaccharides with hydrazine and hydroxylamine.

SECTION—III

6. (a) Define fatty acids. Write a short note on essential fatty acids.
(b) Briefly explain following :—
 - (i) Acetyl value of fats
 - (ii) Waxes
 - (iii) gangliosides.

7. (a) Explain structure, characteristics and functions of plasmalogens.
- (b) What are phospholipids ? Explain the different types of glycerophospholipids.

SECTION—IV

8. (a) Define lipoproteins. Discuss the role of LDL and HDL in the body.
- (b) Write a short note on liposomes.
9. (a) Define bile acids and draw their structure. Discuss their function within the body.
- (b) Comment on the biological function of thromboxanes and prostacyclins.