



Seat No. _____

HAP-003-1013022
Second Year B. Sc. (Sem. III) (CBCS)
(W.E.F. 2016) Examination
June - 2023
Biochemistry : BC-301
(Biomolecules) (Old Course)

Faculty Code : 003
Subject Code : 1013022

Time : $2\frac{1}{2}$ Hours / Total Marks : 70

Instructions : (1) All objective type questions are compulsory.
(2) Figures on the right indicate marks of individual questions.

- 1 (A) Objective type questions: 4
- (1) Define the term invert sugar.
 - (2) Which pentose sugar is wide spread occurrence as a constitute of RNA and nucleotides ?
 - (3) What is chiral carbon ?
 - (4) In medical practice, which term is used for glucose in solution because of dextrorotatory nature of glucose ?
- (B) Write the answer in brief: (any 1 out of 2) 2
- (1) What is the difference between maltose and isomaltose respect to glycosidic bond?
 - (2) Invert sugar.
- (C) Write the answer in detail: (any 1 out of 2) 3
- (1) Mutarotation with example.
 - (2) Biological importance of monosaccharide.
- (D) Write a note on: (any 1 out of 2) 5
- (1) Reaction of monosaccharides.
 - (2) Heteropolysaccharides.

- 2 (A) Objective type questions: 4
- (1) The simplest form of lipid are _____ with hydrocarbon side chain.
 - (2) Draw the structure of sn-glycerol.
 - (3) Write the Full form of PUFA.
 - (4) _____ lipoprotein have role in removing cholesterol from blood circulation and taking it back to liver and hence called good cholesterol.
- (B) Write the answer in brief: (any 1 out of 2) 2
- (1) Nomenclature of triacyl glycerol.
 - (2) Physical and chemical properties of triacyl glycerol.
- (C) Write the answer in detail: (any 1 out of 2) 3
- (1) Structure and function of cholesterol.
 - (2) Classification of lipid.
- (D) Write a note on: (any 1 out of 2) 5
- (1) Phospholipid with function.
 - (2) Biological importance of saturated and unsaturated fatty acids.
- 3 (A) Objective type questions: 4
- (1) What is zwitterion (dipolar ion) ?
 - (2) _____ drug is used as anti- convulsant.
 - (3) Which bond plays an important role in formation of primary structure of the protein ?
 - (4) Phenylalanine is aromatic amino acid. TRUE/FALSE ?
- (B) Write the answer in brief: (any 1 out of 2) 2
- (1) Metalloproteins with suitable example.
 - (2) What is peptide bond ? How it can be formed?
- (C) Write the answer in detail: (any 1 out of 2) 3
- (1) Titration curve of amino acid.
 - (2) Write a note on alfa helix.
- (D) Write a note on: (any 1 out of 2) 5
- (1) Chemical properties of amino acid.
 - (2) Structural classification of proteins.

- 4 (A) Objective type questions: 4
- (1) At which carbon atom ribose and deoxyribose differing in their structure ?
 - (2) _____ discovered DNA.
 - (3) How thymine differs from uracil according to its occurrence ?
 - (4) The DNA double helix is wrapped around the core protein namely _____, which are basic in nature?
- (B) Write the answer in brief: (any 1 out of 2) 2
- (1) Draw the basic structure of DNA.
 - (2) Difference between nucleoside and nucleotide.
- (C) Write the answer in detail: (any 1 out of 2) 3
- (1) Factors affecting T_m .
 - (2) B-form of DNA with diagram.
- (D) Write a note on: (any 1 out of 2) 5
- (1) Draw the structure of t-RNA and label it.
 - (2) Griffith experiment.
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- 5 (A) Objective type questions: 4
- (1) Pellagra is caused due to deficiency of vitamin _____.
 - (2) Which vitamin helps in blood clotting?
 - (3) Porphyrin is found in Urine. (True / False)
 - (4) Warfarin is a synthetic analogue that can inhibit vitamin _____ action.
- (B) Write the answer in brief: (any 1 out of 2) 2
- (1) Why oxyhemoglobin is formed easily?
 - (2) Classify the vitamin on the basis of its solubility in water.
- (C) Write the answer in detail: (any 1 out of 2) 3
- (1) Bile pigment.
 - (2) Biological functions of vitamin A.
- (D) Write a note on: (any 1 out of 2) 5
- (1) Rich sources, RDA and functions of vitamin D.
 - (2) Rich sources, RDA and functions of vitamin C.