

B.Sc. Semester - 3 (CBCS) Examination
Nov/Dec. -2021 (OLD COURSE)
BIO-CHEMISTRY(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q-1 A Answer the following (Any one out of two) (07)**
- (i) Write a note on bacterial cell wall polysaccharides.
 - (ii) Write a detailed note on glycoproteins.
- Q-1 B Attempt any One (Out of two) (04)**
- (i) Write a brief note on: Stereoisomerism of sugars.
 - (ii) Write a brief note on: Mutarotations.
- Q-1 C Attempt any Three (Out of five) (03)**
- (i) Define: Epimers.
 - (ii) Which form of sugars is predominant in nature?
 - (iii) Which glycosidic linkage is present in cellulose?
 - (iv) What is the significance of blood group polysaccharides?
 - (v) Give any two examples of non reducing sugars.
- Q-2 A Answer the following (Any one out of two) (07)**
- (i) Write a detailed note on: Properties and functions of phospholipids.
 - (ii) Write on: Characterization and nomenclature of triglycerides.
- Q-2 B Attempt any One (Out of two) (04)**
- (i) Discuss: Biological significance of fats.
 - (ii) Discuss role and significance of any one glycerophospholipids.
- Q-2 C Attempt any Three (Out of five) (03)**
- (i) What is Meissel number?
 - (ii) What is the significance of saponification value of fats?
 - (iii) Give examples of any two common saturated fats.
 - (iv) What is the function of lecithin in the body?
 - (v) What is the function of cerebrosides in the body?
- Q-3 A Answer the following (Any one out of two) (07)**
- (i) Write in detail on various protein conformations.
 - (ii) Write a detailed note on: Globular proteins.
- Q-3 B Attempt any One (Out of two) (04)**
- (i) Write on: Non-standard amino acids.
 - (ii) Write on: Classification of amino acids based on solubility.
- Q-3 C Attempt any Three (Out of five) (03)**
- (i) What is a zwitterion?
 - (ii) Enlist any three essential amino acids.
 - (iii) Enlist ways by which proteins can be denatured.
 - (iv) What is an RS system?
 - (v) What is the function of collagen in our body?

- Q-4 A Answer the following (Any one out of two) (07)**
- (i) Write on: Hershey and Chase's experiment.
 - (ii) Draw a neat and labeled diagram of B-DNA double helix with all its bonds.
- Q-4 B Attempt any One (Out of two) (04)**
- (i) Write on: Structure and roles of different RNAs.
 - (ii) Write a note on: Central dogma of molecular biology.
- Q-4 C Attempt any Three (Out of five) (03)**
- (i) What is the essence of Griffith's experiment?
 - (ii) What is the approximate distance between successive base pairs of B-DNA?
 - (iii) Define: Gene.
 - (iv) How DNA molecule can be denatured?
 - (v) RNA is more fragile than DNA. Why?
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- Q-5 A Answer the following (Any one out of two) (07)**
- (i) Write on: Classification of porphyrins.
 - (ii) What is bile? Write on its physiological significance.
- Q-5 B Attempt any One (Out of two) (04)**
- (i) Write on: Deficiency of various vitamins.
 - (ii) Write on: Detection of porphyrins by fluorescence.
- Q-5 C Attempt any Three (Out of five) (03)**
- (i) Enlist important porphyrins occurring in nature.
 - (ii) What is the chemical nature of bile?
 - (iii) Enlist fat soluble vitamins.
 - (iv) What is the other name of cyanocobalamin?
 - (v) Name a disease caused by vitamin C deficiency.
