

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – BIOTECHNOLOGY

CHEMISTRY OF BIOMOLECULES

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. Which bond is formed by mutual sharing of electrons between two atoms?
(i) Covalent bond (ii) Ionic bond
(iii) H-bond (iv) Vander walls force
2. Mention the minimum possible number of carbon atom present in a carbohydrate.
(i) 6 (ii) 4
(iii) 3 (iv) 1
3. Identify the chemical name of lecithin.
(i) Phosphatidyl ethanolamine (ii) Phosphatidyl serine
(iii) Phosphatidyl choline (iv) Phosphatidic acid
4. Which of these amino acid is not optically active?
(i) Cysteine (ii) Lysine
(iii) Arginine (iv) Glycine
5. Which of the following is not a fat soluble vitamin?
(i) Vitamin A (ii) Vitamin B
(iii) Vitamin D (iv) Vitamin K

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a. List the various biomolecules and mention its function.
OR
b. Describe the laws of thermodynamics.
- 7 a. Describe the structure and functions of lactose.
OR
b. Explain the structure and functions of sucrose.
- 8 a. Discuss the functions of various lipids.
OR
b. Illustrate the structure of tRNA.
- 9 a. How amino acids are classified based on their side chain?
OR
b. Elaborate the classification of proteins based on its function.

Cont...

10 a. Write a brief note on vitamins.

OR

b. Describe the chemistry and functions of Flavonoids

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a. Justify the role of water as biological solvent and Explain its properties.

OR

b. Discuss about functions of biological buffers.

12 a Write a detailed account on classification of carbohydrates.

OR

b. Describe the structure and biological function of starch.

13 a. Explain briefly the structure and importance of phospholipids.

OR

b. Summarize the Watson and Crick model of DNA double helical structure.

14 a Explain about the peptide bond and biologically important peptides.

OR

b. Sketch the structure of Hemoglobin.

15 a Classify hormones based on chemical nature.

OR

b Discuss the structure and biological functions of Vitamin D.

Z-Z-Z

END