

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – BIOCHEMISTRY

CHEMISTRY OF BIOPOLYMERS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

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

- Which of the following is an example of bacterial and yeast polysaccharide?
(i) Starch (ii) Glycogen
(iii) Cellulose (iv) Dextrans
- The structure formed by joining the amino acids by a peptide bond is called _____ structure of a protein.
(i) quaternary (ii) tertiary
(iii) secondary (iv) primary
- Prednisolone and prednisone are chemically _____
(i) Steroids (ii) Glycerol derivatives
(iii) Non-steroid anti-inflammatory drug (iv) Amino alcohols
- Identify which of the following is not a correct statement with respect to DNA.
(i) It is a long polymer (ii) It is found in the nucleus
(iii) It is a basic substance (iv) First identified by Friedrich Meischer
- Find which of the following disorder is also called the Royal disease?
(i) Colour blindness (ii) Haemophilia
(iii) Sickle cell anaemia (iv) Alzheimer's disease

SECTION - B (15 Marks)

Answer ALL Questions

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

- a Explain in detail about arabinans.
OR
b Evaluate the biological functions of glycosaminoglycans.
- a Illustrate the supersecondary structure of protein.
OR
b Analyze the significance of ramachandran plot.
- a Sketch the Structure & Molecular action of lipoxins.
OR
b Determine the significance of lipids.
- a State the vedge and Junction model for DNA.
OR
b Discuss the physical properties of ds DNA.
- a Elucidate in detail about anisomorphic DNA.
OR
b Show what is helix turn helix motif?

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11.a Interpret the isolation and purification of polysaccharides.

OR

b Construct a note on polysaccharide with xylose and glucose backbone.

12.a Analyze the primary structure of protein .

OR

b Evaluate ramachandran plot with its significance.

13.a Determine the structure and functions of cholesterol.

OR

b Elucidate the structure and functions of prostaglandins.

14.a Classify different types of DNA.

OR

b Categorize the models for DNA bending.

15.a Justify the formation and stability of triplex DNA.

OR

b Enumerate human genetic diseases with examples.

Z-Z-Z

END