

**S.No. 3529**

**P 16 BC 11**

(For candidates admitted from 2016–2017 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Biochemistry

CHEMISTRY OF BIOMOLECULES

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL questions.

1. Write a short note on chitin.
2. Comment on fructans.
3. What is protein denaturation?
4. What are essential amino acids?
5. Comment on hydrogen bond interactions in protein structure.
6. Mention any two applications of affinity chromatography.
7. Specify two functions of phospholipids.
8. Write briefly on any two functions of glycolipids.
9. Comment on buoyant density of DNA.
10. What is meant by DNA supercoiling?

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the structure of O-linked and N-linked oligosaccharides.

Or

- (b) Describe briefly on the structure of glycogen.

12. (a) Outline the secondary structure of protein.

Or

(b) Explain the synthesis of peptides by Merrifield method.

13. (a) Describe briefly on (a) helix-loop-helix (b) hairpin  $\beta$  motif.

Or

(b) Explain the oxygen binding mechanism of hemoglobin.

14. (a) Describe the structure and functions ergosterol.

Or

(b) Outline the structure of leukotrienes. Specify its functions.

15. (a) Enumerate briefly on quadruple structure of DNA.

Or

(b) Give a brief note on mRNA and rRNA.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

16. Explain the structure of bacterial cell wall polysaccharides.

17. Exemplify on classification of proteins.

18. Elaborate the role affinity chromatography in purification of proteins.

19. Narrate in detail on structure, properties and functions of thromboxanes.

20. Write a detail note on DNA sequencing.

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