

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch- **BIOTECHNOLOGY**

BIOCHEMISTRY

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 2 = 20)

- 1 Define water as biological solvent.
- 2 State the second law of thermodynamics.
- 3 How does glucose reacts with sodium amalgam?
- 4 Write any two importance of hyaluronic acid.
- 5 What is neutral amino acid? Give an example.
- 6 Write the mechanism of denaturation of protein.
- 7 Discuss any two chemical reactions of fatty acids.
- 8 What are unusual bases? Give an example.
- 9 Define citric acid cycle.
- 10 Write any two functions of estrogen.

SECTION - B (25 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Discuss in detail about the buffer systems of blood.
OR
b Write short notes on biological macromolecules.
- 12 a Sucrose is a non-reducing sugar-justify.
OR
b Give an account on glycoprotein.
- 13 a Write notes on secondary structure of protein - *a* helix.
OR
b How will you separate and identify amino acids in a mixture using paper chromatography?
- 14 a Discuss the structure and biological importance of any two phospholipids.
OR
b Explain the structure and functions of mRNA.
- 15 a Discuss in detail the various steps involved in (3 oxidation of saturated fatty acid).
OR
b Give an account on structure and functions of insulin.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Explain the hydrogen bonding and cellular reactions of water.
- 17 Differentiate between the glycogen and starch.
- 18 How would you identify the N-terminal and C-terminal ends of peptides?
- 19 Illustrate the double helix structure of DNA.
- 20 Give a detailed account on biological functions of Vitamin B] and E.