



61334

Third Semester B.Sc. Degree Examination, April/May 2023  
(CBCS Scheme)

BIOTECHNOLOGY

Paper – III : Biochemistry and Biophysics

Max. Marks : 70

Time : 3 Hours

**Instruction** : Draw a **neat** labelled diagram **wherever** necessary.

PART – I

(Bio-Chemistry)

Section – A

I. Write short notes on the following. (4×2=8)

- 1) Active site
- 2) Rancidity
- 3) Zwitter ion
- 4) Reducing sugar.



Section – B

II. Answer **any two** of the following. (2×6=12)

- 5) Give an account on mechanism of steroid hormone action.
- 6) Discuss the dietary source and role of fat soluble vitamins.
- 7) What are amino acids ? Give its classification.

Section – C

III. Answer **any two** of the following. (2×10=20)

- 8) Discuss the structural organization of protein with suitable example.
- 9) What are enzymes ? Discuss the lock and key, induced-fit model of enzyme action.
- 10) Explain the structure and function of homo-polysaccharide.

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**Section – D**

IV. Answer the following.

(5×1=5)

- 11) Give an example for non-reducing sugar.
- 12) Name the imino acid.
- 13) Vitamin-A is commonly known as \_\_\_\_\_
- 14) Give an example for enzyme activator.
- 15) Cholesterol is an \_\_\_\_\_ hormone.

**PART – II****(Biophysics)****Section – A**I. Answer **any two** of the following.

(2×5=10)

- 1) Discuss the principle and application of ultra centrifugation.
- 2) Explain the mechanism of buffer action of acidic buffer.
- 3) What is X-ray diffraction ? Elaborate on its principle and application.

**Section – B**II. Answer **any one** of the following.

(1×10=10)

- 4) Discuss the principle and application of NMR spectroscopy.
- 5) What is radioactivity ? Explain the methods used to measure radioactivity.

**Section – C**

III. Answer the following.

(5×1=5)

- 6) Buffer.
- 7) Coordinate bond.
- 8) Expand TLC.
- 9) Isotope.
- 10) Fluorescence.

