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**Third Semester B.Sc. Degree Examination,  
November/December 2019**

(CBCS)

**Biotechnology**

**Paper III – BIOCHEMISTRY AND BIOPHYSICS**

Time : 3 Hours]

[Max. Marks : 70

Instructions to Candidates : Draw the structures and neat labelled diagrams wherever necessary.

PART – I

(BIO-CHEMISTRY)

SECTION – A

Write short notes on the following :

(4 × 2 = 8)

1. Acidic amino acid
2. Soap
3. Epimers
4. Apo enzymes.



SECTION – B

Answer any **TWO** of the following :

(2 × 6 = 12)

5. What are reducing and non reducing sugars? Explain.
6. Differentiate between oils and fats.
7. Give an account of glucocorticoid and mineralocorticoid.

SECTION – C

Answer any **TWO** of the following :

(2 × 10 = 20)

8. Explain simple and conjugated proteins in detail.
9. Explain the mechanism of enzyme action.
10. Write short note on :
  - (a) Fat soluble vitamin
  - (b) Derived lipids.

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SECTION - D

Answer the following :

(5 × 1 = 5)

11. Write the chemical name of vitamin A.
12. Expand FAD.
13. PUFA
14. Co-enzyme
15. Testosterone.



PART - II

(BIOPHYSICS)

SECTION - A

Answer any **TWO** of the following :

(2 × 5 = 10)

16. What are buffers? Mention the types.
17. Explain column chromatography.
18. GM counter.

SECTION - B

Answer any **ONE** of the following :

(1 × 10 = 10)

19. Explain the principle and applications of NMR spectroscopy.
20. What is centrifugation? Explain the principle evolved, add a note on application.

SECTION - C

Answer the following :

(5 × 1 = 5)

21. pKa
22. Covalent bond
23. Non ionizing radiation
24. Expand RPM
25. Heavy isotopes.