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Fourth Semester B.Sc. Degree Examination, August 2022

First Degree Programme under CBCSS

Chemistry

Complementary Course for Zoology

CH 1431.4 : ORGANIC AND BIOPHYSICAL CHEMISTRY

(2013-2016 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. **Each** question carries **1** mark.

1. Monomer of nucleic acids are ————————.
2. Write one method of synthesis of alanine.
3. When a protein is heated with ———————— an yellow colour develops.
4. ———————— is an example for condensation polymer.
5. Write the structure of neoprene.
6. Adsorption ———————— with increase of temperature.
7. The zigzag, irregular motion exhibited by minute particles of matter when suspended in a fluid is called ————————.

P.T.O.

8. The process of precipitation of colloidal particles due to aggregation of the particles is called _____.

9. In GSC, the stationary phase is _____.

10. Expanded form of TLC is _____.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks.

11. Describe Ninhydrin test for proteins.

12. What do you mean by the term 'specificity of enzymes'. Give two examples.

13. What are the components of DNA and RHA?

14. What are lipids? How are they classified?

15. Write two examples each for natural and synthetic polymers.

16. Explain vulcanisation of rubber.

17. What are isotonic solutions?

18. Explain reverse osmosis.

19. Distinguish between gels and emulsions?

20. What is Tyndal effect?

21. Write the principle of column chromatography?

22. Explain the different types of paper chromatography.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. **Each** question carries **4** marks.

23. Explain the primary and secondary structure of proteins.

24. What are nucleic acids? Give two examples.

25. Write a note on coenzymes.

26. What are the general properties and uses of terpenes?

27. Discuss any two methods of isolation of essential oils.

28. Describe the preparation and properties of any two synthetic rubbers.

29. Distinguish between electrophoresis and electroosmosis.

30. Explain the cleansing action of soaps and detergents.

31. Write a note on factors affecting column efficiency.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks.

32. Explain the different ways of classification of aminoacids with examples. What is isoelectric point?

33. Discuss the terms

    (a) rancidification,

    (b) acid value,

    (c) saponification value,

    (d) iodine value and

    (e) phospholipids.

34. Describe the applications and the factors affecting adsorption. Discuss Langmuir theory of adsorption.

35. (a) Write short notes on stability of colloids (8)

(b) Differentiate thermo plastics and thermo setting plastics. (7)

(2 × 15 = 30 Marks)
