

Reg. No. : .....

Name : .....

Third Semester B.Sc. Degree Examination, March 2022

First Degree Programme under CBCSS

Chemistry

Complementary Course for Home Science

CH 1331.5 : PHYSICAL AND ORGANIC CHEMISTRY

(2013-2016 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. Name a mordant dye.
2. Name an acidic dye.
3. What is the main use of methyl orange?
4. Name the monomer of PVA.
5. Give the structural formula of citral.
6. Which is the heterocyclic ring present in coniine?
7. The term used to determine the protecting power of a lyophilic colloid is \_\_\_\_\_

P.T.O.

8. Fog is an example of which type of colloidal system?
9. The position occupied by non-polar hydrophobic and polar hydrophilic group in a micelle is \_\_\_\_\_
10. Physical adsorption of a gaseous species may change to chemical adsorption with \_\_\_\_\_

(10 × 1 = 10 Marks)

#### SECTION – B

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

11. What is meant by auxochrome?
12. Azobenzene though a coloured compound is not a dye. Explain the reason.
13. Give one example of an azo dye with its structure.
14. How is Nylon 66 is prepared?
15. Show the isoprene linkage in geraniol molecule.
16. What are emulsifying agents?
17. Explain the terms adsorbent and adsorbate.
18. Discuss the essential differences between lyophilic and lyophobic colloids.
19. What are macromolecular colloids? Give example.
20. What is chemisorption?
21. Give any two physiological actions of codeine.
22. How will you analyse –CHO functional group in alkaloids?

(8 × 2 = 16 Marks)



### SECTION – C

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

23. Explain colour and constitution in terms of modern theory.
24. What are dyes? Describe the structural features of (a) acidic dye and (b) basic dye. Give one example each.
25. How is malachite green prepared? What is its use?
26. How is PVF prepared? Mention its important uses.
27. What are colloids? How they are classified?
28. Discuss different applications of colloids.
29. Discuss the principle and applications of zone electrophoresis.
30. Write notes on paper chromatography. Give its applications.
31. Explain the following terms: (a) Coagulation and (b) Dialysis.

(6 × 4 = 24 Marks)

### SECTION – D

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

32. Discuss the preparation, structure and applications of the following industrially important polymers.
  - (a) PVC
  - (b) PVA
  - (c) PMMA
  - (d) PIFE

33. Discuss the preparation and applications of the synthetic rubbers Buna-N and thiokol.
- (a) Buna-N: Reaction - Explanation - Mechanism - Applications
- (b) Thiokol - Reaction - Explanation - Mechanism - Applications
34. Discuss the principle and applications of gas chromatography.
35. Discuss the structure and physiological actions of (a) nicotine and (b) morphine.

(2 × 15 = 30 Marks)

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