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D 103032   (Pages : 2)   Name...................................

Reg. No...................................

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION APRIL 2024

Chemistry

CHE 4C 04—PHYSICAL AND APPLIED CHEMISTRY

(2019 Admission onwards)

Time : Two Hours   Maximum : 60 Marks

Section A (Short Answers)

Answer questions up to 20 marks.
Each question carries 2 marks.

1. Distinguish between true solutions and colloidal solutions.

2. What are lyophilic colloids ? Give an example.

3. Explain 1D nanomaterials with an example.

4. What is R_f value ? How is it used in the identification of a compound ?

5. Name any *one* biodegradable polymer and write its application.

6. Give any *two* applications of nanomaterials in medicine.

7. Which are the monomers of Buna-S and Bakelite.

8. Write any *two* examples each for artificial sweeteners and permitted food colours.

9. Define octane number and cetane number.

10. What is eutrophication ?

11. What are chromophores and auxochromes ?

12. What is greenhouse effect ? Name any *two* greenhouse gases.

[Ceiling of marks : 20]

Turn over

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Section B (Paragraph)

Answer questions up to 30 marks.
Each question carries 5 marks

13. Explain briefly the cleaning action of soap.

14. Differentiate between thermoplastics and thermosetting plastics.

15. What is meant by green chemistry ? Describe the principles of green chemistry.

16. Describe the principle and applications of gas chromatography.

17. Briefly explain UV-Visible spectroscopy.

18. Write a short note on the causes and effects of water pollution.

19. Explain any two methods for purification of colloids.

[Ceiling of marks

Section C (Essay)

*Answer any **one** question.*
The question carries 10 marks.

20. (i) Discuss the principle of NMR spectroscopy.

    (ii) Draw the NMR spectrum of ethanol and explain.

21. Briefly explain the manufacture of cement.

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