C 41201 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER (CBCSS-UG) DEGREE EXAMINATION, APRIL 2023

Chemistry

CHE 4C04—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. What are associated colloids ?
2. What is peptization ? Give an example.
3. What is atom economy in green chemistry ?
4. Give any two applications of nanomaterial in medicine.
5. Define R_f value in chromatography.
6. Arrange different electronic transitions in the order of increasing energy levels.
7. What is meant by finger print region ?
8. What are thermoplastics ? Give an example.
9. How is nylon-66 prepared ?
10. What is BOD ?
11. How ozone layer depletion does increases temperature of atmosphere ?
12. What is antibiotics ? Give an example.

[Ceiling of marks : 20]

Section B (Paragraph)

Answer questions up to 30 *marks.*

Each question carries 5 *marks.*

13. Write notes on electrophoresis.
14. Explain the properties of nanoparticles.
15. Mention advantages and limitations of TLC.
16. How are following prepared (a) PVC ; (b) PTFE ; (c) Polythene ?

Turn over

17. How is acid rain produced ?

18. Explain terms (a) chromophores ; (b) auxochrome. With examples.

19. How will you differentiate the following pairs of compounds by IR spectroscopy, (i) acetophenone and benzaldehyde ; (ii) ethanol and ether.

[Ceiling of marks : 30]

Section C (Essay)

Answer any **one**.

The question carries 10 *marks.*

20. (a) What is meant by chemical shift ?

(b) Draw NMR spectrum of 1,3-dibromopropane and explain it.

(c) What are the applications of UV spectroscopy ?

21. Write a note about manufacture of cement and glass.

(1 × 10 = 10 marks)