20U614 (Pages: 2) Name: .....

Reg.No: .....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2023

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U CHE6 B12 - ADVANCED AND APPLIED CHEMISTRY

(Chemistry - Core Course)

(2019 Admission onwards)

Time : 2.00 Hours Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer ***all*** questions. Each question carries 2 marks.

1. What is meant by ultrafiltration?
2. What happens when a sol of ferric hydroxide prepared by the hydrolysis of ferric chloride is subjected to the prolonged action of an electric field?
3. Give an example for a microwave-assisted reaction in an organic solvent. Give the equation.
4. Give an example of combinatorial synthesis.
5. What are synthetic polymers? Give one example.
6. Write a note on synthetic rubber.
7. What is meant by setting of cement?
8. Name one of the main industry,which produce liquid chlorin in kerala and give the main uses of chlorine.
9. Write the main constituents and calorific value of kerosene.
10. What are rhodenticides? Give two examples.
11. What is meant by TFM of soap?
12. Draw the structure of Indigo.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

Answer ***all*** questions. Each question carries 5 marks.

13. Explain the size dependence of the optical properties of nanomaterials.
14. Briefly explain the terms green synthesis and green solvents.
15. Expalin briefly the optical properties of quantum dots.
16. Discuss the synthesis of carbon nanotubes.

17. What are essential nutrients for plants? Distinguish between micronutrients and macronutrients.

18. Give two examples of food adultrants and their identification tests.

19. Explain acid dye and basic dye on fabric. Give examples. What is the mode of action of these dyes to the fabric?

(Ceiling: 30 Marks)

Part C (Essay questions)

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

20. Explain the term nanocatalysis, its significance from the catalytic efficiency point of view, and its applications.

21. Write a note on combinatorial chemistry and discuss it's applications.

(1 × 10 = 10 Marks)

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