15

376562

C 41959

(Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2023

(CBCSS)

Chemistry

CHE 4E 05—INDUSTRIAL CATALYSIS

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

Section A

Answer any eight *questions.*

Each question carries a weightage of 1.

1. How is adsorption dependent on temperature ?
2. Distinguish between Physical adsorption and chemical adsorption.
3. Describe absolute rate theory of chemical adsorption.
4. How surface area and porosity of a material is measured ?
5. Comment on the structure of Zeolite A and X type.
6. Breifly explain the process of regeneration of catalyst
7. Explain the Co-ordination polymerization using Ziegler - Natta Catalyst.
8. What are the drawbacks of Langmuir adsorption isotherm ?
9. Write short note on catalytic cracking.
10. How is catalyst deactivation is different from catalyst poisoning ?

(8 × 1 = 8 weightage)

Section B

Answer any **six** *questions.*

Each question carries a weightage of 2.

11. Sketch different type of adsorption isotherm and explain.
12. Explain the thermodynamics of adsorption

Turn over

13. What is the difference between physisorption and chemisorption ?

14. What is a catalyst ? Establish the difference between homogeneous and heterogeneous catalysts.

15. Distinguish between catalytic promoters and inhibitors.

16. Explain the influence of substrate concentration on enzyme catalysis.

17. Explain single and bi substrate enzyme catalyzed reactions.

18. What are the uses of Biocatalysts in green chemistry ?

(6 × 2 = 12 weightage)

Section C

Answer any **two** *questions.*

Each question carries a weightage of 5.

19. Write short note on the following : (a) Fischer Tropsch process ; and (b) Hydroformylation of olefiens.

20. Discuss about enzyme catalysis. Explain how substrate concentration, pH and temperature affect their kinetics.

21. Compare the theories of homogenous and heterogeneous catalysis.

22. Explain Phase transfer catalyst reaction with their uses.

(2 × 5 = 10 weightage)