

K23U 3413



Reg. No. : .....

Name : .....

III Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/  
Improvement) Examination, November 2023  
(2019 to 2022 Admissions)  
COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/POLYMER  
CHEMISTRY

3C03CHE/PCH(BS) : Chemistry (For Biological Science)

Time : 3 Hours

Max. Marks : 32

*Instruction : Answer the questions in English only.*

SECTION – A

Very short answer type. Each carries 1 mark. Answer all 5 questions.

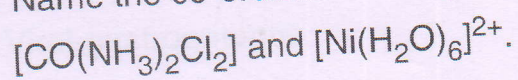
1. Give an example for thermoplastics.
2. Write one example for a nucleophile.
3. \_\_\_\_\_ is constant in an isochoric process.
4. Equation for the half-life of first order reaction is \_\_\_\_\_.
5. Give an example for chelate ligand.

(5×1=5)

SECTION – B

Short answer type. Each carries 2 marks. Answer any 4 questions out of 6.

6. State Markownikoff rule.
7. Explain  $S_N1$  mechanism with example.
8. Define heat capacity.
9. State and explain Werners theory of co-ordination.
10. Define chirality with example.
11. Name the co-ordination compounds :



(4×2=8)

P.T.O.

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SECTION – C

Short essay type. **Each** carries 3 marks. Answer **any 3** questions out of 5.

12. State and explain Walden inversion.
13. What is optical isomerism ? Explain with example.
14. Give an account of synthetic fibres.
15. The half-life of first order reaction is 100 seconds, if the initial concentration of the reaction is  $2\text{mol L}^{-1}$ . How much of it will be consumed in 250 seconds ?
16. If the change in internal energy for the process  $\text{MCO}_3 \rightarrow \text{MO} + \text{CO}_2$  is 105 KJ at 400 K and 1 atm. pressure, calculate enthalpy change. (3×3=9)

SECTION – D

Long essay type. **Each** carries 5 marks. Answer **any 2** questions out of 4.

17. a) What are the factors affecting the stability of co-ordination compounds ? (3+2)  
b) Give applications of co-ordination compounds.
18. a) Explain the difference between enantiomer and diastereomers. (3+2)  
b) Discuss the optical isomerism of lactic acid.
19. a) Explain mechanism of  $\text{S}_{\text{N}}2$  reaction. (3+2)  
b) Discuss the concept of spontaneous and non-spontaneous process.
20. a) What are the factors affecting the rate of reaction ? (2+3)  
b) Explain the collision theory of reaction. (2×5=10)