



B.Sc. II Semester Degree Examination, September/October - 2023

CHEMISTRY

DSC-2 : Models and Concepts in Chemistry

(NEP)

Time : 2 Hours

Maximum Marks : 60

Note : Answer *all* sections.

SECTION-A

1. Answer the following sub-questions. Each sub-question carries **one** marks. **10x1=10**
- | | |
|--|---|
| (a) What is Electron gain enthalpy ? | 1 |
| (b) What are carbides ? | 1 |
| (c) What are electrophiles ? | 1 |
| (d) What is pericyclic reaction ? | 1 |
| (e) What is orientation effect ? | 1 |
| (f) What is SN ² reaction ? | 1 |
| (g) What are miller indices ? | 1 |
| (h) Define limit of quantification. | 1 |
| (i) State Nernst distribution law. | 1 |
| (j) Define accuracy. | 1 |

SECTION-B

Answer **any four** of the following questions. Each question carries **five** marks.

4x5=20

- | | |
|---|---|
| 2. What is ionization enthalpy ? Explain the factors affecting ionization enthalpy. | 5 |
| 3. Name the different types of organic reactions. Explain any one of them. | 5 |
| 4. Discuss the mechanism of SN ² reaction with a suitable example. | 5 |
| 5. Explain different types of errors. | 5 |
| 6. Derive an expression of distribution law, when molecules undergo dissociation. | 5 |
| 7. Explain halogenation of benzene. Give its mechanism. | 5 |



P.T.O.

SECTION-C

Answer **any three** of the following questions. Each question carries **ten** marks.

3x10=30

8. (a) What is electronegativity ? Explain pauling and mulliken's scale of electronegativity. **6**
(b) Write a note on oxides, hydrides and halides of group 13 elements. **4**
9. (a) Explain the preparation of alkanes by wurtz reaction and wurtz-fitting reaction. **6**
(b) Discuss the types of bond breaking. **4**
10. (a) Explain the orientation effect in aniline with suitable example. **6**
(b) Explain the mechanism of S_N^{Ar} reaction with example. **4**
11. (a) Explain the determination of type of crystal by single crystal rotation method. **6**
(b) Describe principle and distribution law in parker's process of desilverization of lead. **4**
12. (a) Explain the choice of an analytical method. **6**
(b) A Sample of haematite ore was analysed by a four students. The values obtained for its percentage of iron as 22.62, 22.73, 22.75 and 22.78. Determine the standard deviation. **4**

- o o o -

