



B.Sc. II Semester Degree Examination, Sept./Oct. - 2024

CHEMISTRY

DSC - 2 : Models and Concepts in Chemistry

(NEP)

Time : 2 Hours

Maximum Marks : 60

Note : Answer **all** Sections.

SECTION - A

Answer the following sub-questions. Each sub-question carries **one** mark. **10x1=10**

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|----|-----|---|---|
| 1. | (a) | Define ionic radii. | 1 |
| | (b) | What are carbides ? | 1 |
| | (c) | Define addition reaction. | 1 |
| | (d) | What are nucleophiles ? Give an example. | 1 |
| | (e) | Name any two factors effecting SN^1 and SN^2 reactions. | 1 |
| | (f) | What are ring activating groups ? | 1 |
| | (g) | What is anisotropy ? | 1 |
| | (h) | State Nernst's Distribution Law. | 1 |
| | (i) | Define correlation coefficient (R^2). | 1 |
| | (j) | Define analysis. | 1 |

SECTION - B

Answer **any four** of the following questions. Each question carries **five** marks. **4x5=20**

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|----|--|---|
| 2. | Discuss the following properties with reference to s and p-block elements. | 5 |
| | (i) Atomic radii | |
| | (ii) Electron gain enthalpy | |
| 3. | Explain free radical substitution reaction of alkanes with a suitable example. | 5 |



4. Explain the orientation influence of OH group in phenol. 5
5. Describe the determination of types of crystal by single crystal rotation method. 5
6. Explain the minimization of errors. 5
7. Write the mechanism of Friedel-Craft alkylation of benzene. 5

SECTION - C

Answer **any three** of the following questions. Each question carries **ten** marks. **3x10=30**

8. (a) What is electronegativity ? Explain the variation of electronegativity with respect to bond order, partial charge and hybridization. 6
- (b) Write a note on oxides and halides of the group 13 elements. 4
9. (a) Explain the following with a suitable example 6
- (i) Pericyclic reaction
- (ii) Substitution reaction
- (b) Explain the homolytic and heterolytic bond cleavage. 4
10. (a) Discuss the mechanism of S_NAr reaction Via Benzyne intermediate. 6
- (b) Write a note on ortho-para ratio. 4
11. (a) Discuss the principle and distribution law in Parker's process of desilverisation of lead. 6
- (b) Briefly describe the classification of liquid crystals. 4
12. (a) Explain the choice of an analytical method. 6
- (b) Write the differences between LOD and LOQ. 4

