



B.Sc. I Semester (NEP) Degree Examination, March/April - 2022

CHEMISTRY

Paper No. DSC - 1 : Fundamental of Chemistry

Time : 3 Hours

Maximum Marks : 60

SECTION - A

1. Answer the following sub-questions, each sub-question carries **one** mark. **10x1=10**
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|---|---|
| (a) What is empirical formula ? | 1 |
| (b) Define Molarity. | 1 |
| (c) State Heisenberg's uncertainty principle. | 1 |
| (d) Give Hund's rule of maximum multiplicity. | 1 |
| (e) What is the influence of hybridization on bond properties ? | 1 |
| (f) What is electromeric effect ? | 1 |
| (g) What are ideal and real gases ? | 1 |
| (h) Define parachor. | 1 |
| (i) Mention any one indicator used in redox titrations. | 1 |
| (j) Give the one advantage of organic reagents over inorganic reagents. | 1 |

SECTION - B

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

4x5=20

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|---|---|
| 2. Explain the importance and scope of Chemistry. | 5 |
| 3. Write a note on Bohr's Atomic Model. | 5 |
| 4. Discuss the strengths of organic acids and bases with factors effecting pK values. | 5 |
| 5. Write Vander Waal's equation and discuss it's application in explaining the behaviour of real gases. | 5 |



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6. Explain the factors influencing precipitation in gravimetric analysis. 5
7. Give the mechanism of ozonolysis of propene. 5

SECTION - C

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

3x10=30

8. (a) Discuss the Do's and Dont's in Chemistry laboratory. 6
(b) Define Normality and Mole fraction with an example. 4
9. (a) Describe the shapes of s, p and d orbitals with neat diagram. 6
(b) Discuss the physical significance of ψ and ψ^2 . 4
10. (a) Give the mechanism of E1 and E2 reaction. 6
(b) Explain sp^3 hybridisation with an example. 4
11. (a) Define surface tension and write it's determination by using stalagmometer. 6
(b) Define Viscosity and write it's determination by using Ostwald Viscometer. 4
12. (a) Discuss the titration curves for strong acid vs strong base, weak acid vs strong base. 6
(b) Explain Mohr's method for the determination of chloride ion. 4

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