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# 21BSC1C1CHL(46123)

## B.Sc. I Semester Degree Examination, April/May - 2024
## CHEMISTRY
### DSC - 1 : Fundamentals of 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** mark. **10x1=10**

(a) What is Normality ? **1**

(b) What is molar mass ? **1**

(c) State Aufbau's principle. **1**

(d) Write the de-Broglie equation. **1**

(e) What is inductive effect ? **1**

(f) Write Diels-Alder reaction. **1**

(g) What is Parachor ? **1**

(h) What is Collision frequency ? **1**

(i) Give an example for Redox indicator. **1**

(j) Define post precipitation. **1**

**SECTION - B**

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

**2.** Give precautions to be taken while handling toxic chemicals, concentrated acids and organic solvents. **5**

**3.** Explain the significance of $\psi$ and $\psi^2$. **5**

**4.** Explain $E_1$ mechanism with example. **5**

**P.T.O.**

**5.** Write Vander Waals equation and discuss its applications in explaining the behaviour of real gases. **5**

**6.** Explain the Determination of hardness of water. **5**

**7.** What is Shielding Constant ? Write the Slater's rules. **5**

## SECTION - C

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

**8.** (a) Explain the Calibration of glass wares of Pipette, Burette and Volumetric flasks. **6**

(b) Discuss the importance and scope of Chemistry. **4**

**9.** (a) What are quantum numbers ? Explain four quantum numbers with their significance. **6**

(b) Explain the Pauli's Exclusive principle. **4**

**10.** (a) What is Markownikoff's Rule ? Give mechanism of addition of HBr to Propene. **6**

(b) With suitable example, explain Hyper Conjugation effect. **4**

**11.** (a) Discuss Law of Corresponding State. **6**

(b) What is surface tension ? Explain its determination using Stalagmometer. **4**

**12.** (a) Explain the precipitation titration by Mohr's method. **6**

(b) Explain the titration curves for weak acid with a strong base in titration. **4**

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