No. of Printed Pages : **2**

21BSC2C2CHL

B.Sc. II Semester (NEP) Degree Examination,
September/October - 2022
CHEMISTRY
DSC - 2 : Models and Concepts in Chemistry

Time : 3 Hours | Maximum Marks : 60

Instructions : *Answer* ***all*** *Sections.*

SECTION - A

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

(a) Define the covalent bond. **1**

(b) What is electron gain enthalpy ? **1**

(c) What are nucleophiles ? **1**

(d) Write the Wurtz reaction. **1**

(e) Define the unit cell. **1**

(f) State Nernst Distribution law. **1**

(g) What is Walden inversion ? **1**

(h) What is Orientation effect ? **1**

(i) What is precision ? **1**

(j) What is absolute error ? **1**

SECTION - B

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

2. Define electronegativity. Explain Mullikan-Jaffe's electronegativity scales. **5**

3. Explain with examples : **5**

(a) Addition reaction

(b) Elimination reaction

4. Discuss the mechanism of SN^1 reaction with a suitable example. **5**

5. Explain powder-diffraction method. **5**

6. Derive Bragg's equation. **5**

7. Discuss on Determinate and Indeterminate errors. **5**

P.T.O.

SECTION - C

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

8. (a) Explain the factors affecting ionization energy. **6**

(b) What is electron gain enthalpy ? Explain its trends in the periodic table. **4**

9. (a) Explain Free radical Substitution reaction of alkanes with a suitable example. **6**

(b) Explain types of bond breaking. **4**

10. (a) Explain mechanism of nitration reaction in Saturated carbon. **6**

(b) Discuss the factors affecting SN^1 and SN^2 reactions. **4**

11. (a) Explain classification of liquid crystals with an example. **6**

(b) Discuss principle and distribution law in Parker's process of desilverisation of lead. **4**

12. (a) Write a note on limit of detection [LOD] and limit of quantification [LOQ]. **6**

(b) Explain Absolute error and Relative error. **4**

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