I Semester B.Sc. Examination, May 2022
(NEP) (2021-22 and Onwards)
CHEMISTRY (Paper – I)

Time : 2½ Hours

Max. Marks : 60

Instructions : i) The question paper has **three** Parts. Answer **all** the Parts.
ii) **Draw** diagrams and chemical equations **wherever** necessary.

PART – A

Any four (04) out of six (06) :   (4×2=8)

1. What are determinate and indeterminate errors ?

2. Mention two reagents used in gravimetry.

3. What are electrophiles ? Give an example.

4. Give an example for elimination reaction.

5. Give an example for Diels-Alder reaction.

6. Define homoaromaticity with an example.

PART – B

Any four (04) out of six (6) :   (4×5=20)

7. a) Explain the titration curves for weak base Vs strong acid.

   b) Define : (a) Mean (b) Median.   (3+2)

8. a) Define homolytic and heterolytic fissions with example.

   b) Give the structures of (a) Carbene (b) Benzyne.   (3+2)

9. a) Explain hyperconjugation effect with an example.

   b) Give the preparation of ethane by Wurtz reaction.   (3+2)

10. a) How 2-butene can be prepared by Wittig reaction ? Give equation.

    b) Give the equation for hydration of propene.   **(3+2)**

11. a) Give the mechanism of E_2 elimination by taking suitable example.

    b) Draw the geometrical isomers of 1, 2 – dimethylcyclopropane.   **(3+2)**

12. a) Explain the mechanism of Friedel Craft's alkylation.

    b) How biphenyl can be prepared by Ullmann reaction ?   **(3+2)**

PART – C

Any four (04) out of six (06) :   **(4×8=32)**

13. a) Explain the theory of redox indicators.

    b) What are the factors influencing precipitation ?

    c) List out two quantitative applications of acid-base titrimetry.   **(3+3+2)**

14. a) Give the principle of determination of hardness of water.

    b) Explain acidity and alkalinity with suitable examples.

    c) Give the applications of complexometric titration.   **(3+3+2)**

15. a) Explain pericyclic reaction with an example.

    b) State the postulates of Baeyer's strain theory.

    c) Draw the conformations of butane.   **(3+3+2)**

16. a) Define ozonolysis. Give the equation for ozonolysis of propyne.

    b) Give the mechanism for addition of halogens to alkene through halonium intermediate.

    c) Give one method of preparation of acetylene.   **(3+3+2)**

17. a) Give the mechanism of S_N1 reaction with suitable example.

    b) Explain the aromaticity of Naphthalene based on Huckel's rule.

    c) Define antiaromaticity with an example.   **(3+3+2)**

18. a) What is Birch reduction ? Give an example.

    b) Explain σ and π complexes.

    c) How toluene can be converted to benzoic acid ? Give equation.   **(3+3+2)**

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