

TB153100A

Reg. No.....

Name.....

**B. Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2016**

**SEMESTER III - CORE COURSE (CHEMISTRY)**

**CH3B03TB - ORGANIC CHEMISTRY – I**

**Time: Three Hours**

**Maximum Marks: 60**

**PART A**

**Short Answer Questions**

**I. Answer all questions. Each question carries 1 mark**

1. Give the IUPAC name of the compound  $\text{CH}_3-\text{CH}(\text{CH}_3)-\text{CH}_2-\text{CH}_2-\text{CH}_3$
2. Give any two examples of ortho directing groups.
3. What is inductive effect?
4. Define cetane number.
5. What is geometrical isomerism?

**(5×1 = 5)**

**PART B**

**Brief answer Questions**

**II. Answer any five questions. Each question carries 2 marks**

6. Differentiate between electrophiles and nucleophiles.
7. Explain Huckel's rule of aromaticity.
8. Give any two methods of preparation of alkanes.
9. Explain acidity of alkynes.
10. Explain peroxide effect.
11. Give the general mechanism of aromatic electrophilic substitution.
12. Briefly explain Bergius process.
13. Explain Walden inversion.

**(5×2 = 10)**

**PART C**

**Descriptive / Short essay questions**

**III. Answer any five questions. Each question carries 5 marks**

14. Explain E-Z nomenclature.
15. Explain the mechanism of nitration of naphthalene.
16. Explain potential energy relationships between the conformations of cyclohexane.
17. Briefly explain SN 1 reaction with an example.
18. Describe the mechanism of addition of bromine to alkenes.
19. Explain the Friedel-Crafts alkylation reaction with example.
20. Discuss E 2 mechanism.
21. Distinguish between conformational and configurational isomers.

**(5×5 = 25)**

### PART D

#### IV. Answer any two of the following. Each question carries 10 marks.

22. (a) Write the IUPAC names of the following compounds (4)
- I)  $C_6H_5-CH_2-CH=CH_2$ .      II)  $CH_3-CH(Cl)-CH(OH)-CH_3$
- (b) Briefly explain the various types of addition reactions. (6)
23. (a) Explain dehydrohalogenation with mechanism. (5)
- (b) Write short notes on: 1) Resonance energy.    2) Aromatic sextet theory. (5)
24. (a) What are non benzenoid aromatic compounds? Give examples along with their structures. (5)
- (b) Explain the reactivity of naphthalene towards electrophilic substitution. (5)
25. (a) Explain the preparation and properties of 1,3-butadiene. (5)
- (b) Explain the following reactions of alkanes: I) oxidation. II) pyrolysis (5)
- (2×10 = 20)**