

Day: Monday

Date: 23-04-2018

S-2018-3940

Time: 10:00 A.M. To 1:00 P.M.

Max. Marks: 80

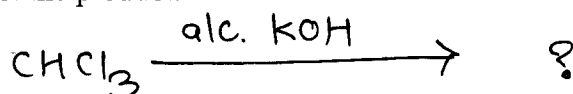
N.B:

- 1) Q. No. 1 and Q. No. 5 are **COMPULSORY**. Solve **ANY TWO** of the remaining from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

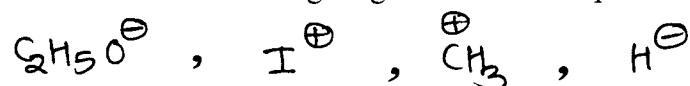
SECTION - I

Q.1 Answer **ANY FIVE** of the following: (10)

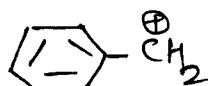
- a) What is Bond dissociation energy?
- b) What is Dipole moment? How it is calculated?
- c) Predict the product.



- d) Give Dimerisation reaction of Carbenes.
- e) Give two reactions of σ -complexes.
- f) Differentiate the following reagents into Nucleophiles and Electrophiles.



- g) Give resonance involved in following Carbocation.

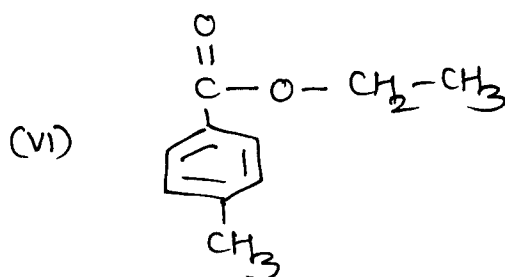
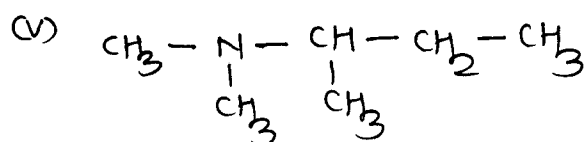
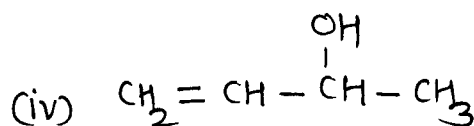
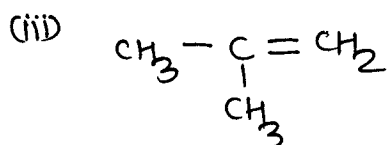
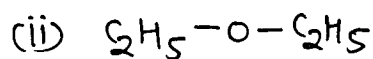
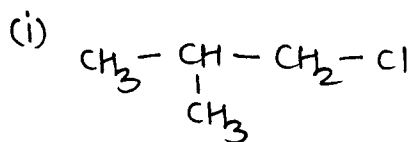


Q.2 a) Give different types of Steric effects with suitable examples. (10)

b) Give Lewis Dash-dot method of writing resonance. (05)

Q.3 a) Define reaction intermediates. Give methods of preparation and reactions of Carbanions and π -complexes. (10)

b) Give IUPAC names of following compounds. (any FIVE) (05)

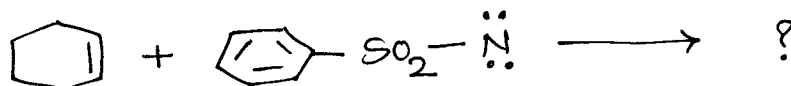


P.T.O.

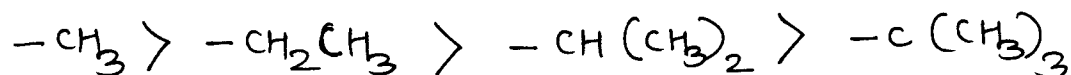
- Q.4** Write short notes on **ANY THREE** of the following: (15)
- Optical Isomerism
 - Hybridization
 - Melting Point
 - Nitration reactions

SECTION -II

- Q.5** Answer **ANY FIVE** of the following: (10)
- How bond length affects bond energy? Explain with example.
 - What are Vander Waals forces of attraction?
 - Predict the product.



- Explain: σ -complex salt isolation is possible. Give one example.
 - Enlist different reagents used in Sulphonation reactions.
 - What is Ingold scale?
 - Explain Steric strain with suitable example.
- Q.6** a) Explain: Alkyl groups attached to benzene ring have +I effect in the following order. (08)



- b) Give applications of Inductive effect. (07)
- Q.7** a) Give definition, reaction, mechanism, kinetics, stereochemistry and factors affecting rate of $\text{S}_{\text{N}}2$ reaction. (15)

- Q.8** Write short notes on **ANY THREE** of the following: (15)
- Benzynes
 - Collision theory
 - Carbon radicals
 - $\text{S}_{\text{N}}1$ reactions

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