

Day : Wednesday
Date : 25/10/2017

Time : 03.00 PM TO 06.00 PM
Max. Marks : 60

W-2017-0555

N.B.:

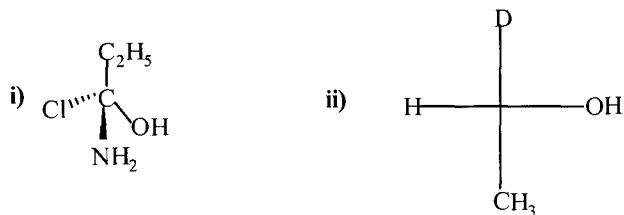
- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SAME** answer book.

SECTION – I

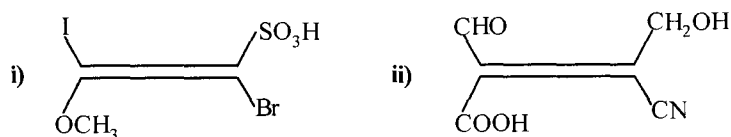
- Q.1** A) Select the correct option and rewrite the complete sentence: **[06]**
- a) The resonance energy of anthracene is _____ Kcal/mole.
 i) 36 ii) 72 iii) 84 iv) 23
 - b) The racemic modification is optically inactive because _____.
 i) External Compensation iii) Absence of Chiral Center
 ii) Internal Compensation iv) None of these
 - c) In five membered heterocyclic compounds electrophilic attack takes place at _____ position.
 i) 2nd ii) 3rd iii) 1st iv) 5th
 - d) Ionic size _____ down the group of halogen family elements.
 i) decreases iii) remains constant
 ii) increases iv) varies randomly
 - e) Outer electronic configuration of carbon group elements is _____.
 i) ns^1 ii) $ns^2 np^1$ iii) $ns^2 np^2$ iv) $ns^2 np^3$
 - f) Which one of the following is an interhalogen compound?
 i) HCl ii) $AlCl_3$ iii) ClF_3 iv) NaCl
- B)** Attempt the following: **[06]**
- a) What are optical isomers?
 - b) Define asymmetric carbon atom.
 - c) What is geometrical isomerism?
 - d) What are polynuclear aromatic compounds?
 - e) Mention two conditions necessary for optical activity.
 - f) Define Dextro compound.
- Q.2** Attempt **ANY THREE** of the following: **[12]**
- a) Discuss the molecular orbital structure of Thiophene.
 - b) Give any two synthesis of pyrrole.
 - c) Discuss sulphonation and nitration of naphthalene.
 - d) Write a note on : Enantiomers.
- Q.3** Attempt **ANY FOUR** of the following: **[12]**
- a) Discuss any two methods of preparation of cycloalkenes.
 - b) How do you bring about following conversions?
 i) Anthracene to Anthraquinane.
 ii) Anthracene to 9-Bromoanthracene.
 - c) What are heterocyclic compounds? Discuss reduction of furan.

P.T.O.

d) Assign R/S configuration to the following:



e) Assign E/Z configuration to the following compounds.

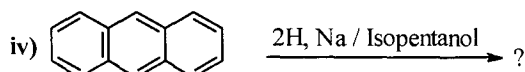
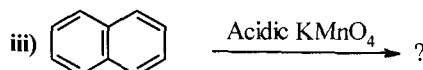
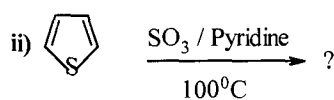
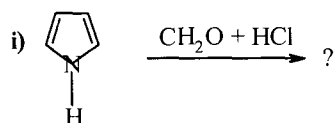


Q.4 A) Attempt ANY ONE of the following:

[06]

a) What is conformational isomerism? Draw all possible conformations of n-propane and explain their stability with energy profile diagram.

b) Predict the product/s:



SECTION – II

Q.4 B) Attempt ANY ONE of the following:

[06]

a) First member of each group of p-block elements show anomalous behavior. Explain it with a suitable example.

b) Comment upon electronegativity, electron affinity and oxidation states of halogen family elements.

Q.5 Attempt ANY TWO of the following:

[12]

a) Write the names, outer electronic configuration of nitrogen family elements. Discuss the trends in atomic size, ionization potential and electronegativity of these elements.

b) Define oxyacid. Discuss oxyacids of phosphorous and sulphur.

c) i) Define electron affinity. Why electron affinity of fluorine is less than that of chlorine?

ii) Give the comparison between diamond and graphite.

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