

Seat No.	
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SW-2
Total No. of Pages : 3

B.Sc. (Part-I) (Semester-II) (New)
Examination, October - 2019
CHEMISTRY
Organic Chemistry (Paper-III)
Sub. Code: 59683

Day and Date : Thursday, 17 - 10 - 2019

Total Marks : 50

Time : 12.00 noon to 2.00 p.m.

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to right indicate full marks.
 - 3) Draw neat diagrams and give equations wherever necessary.

Q1) Choose the correct alternative for each of the following and rewrite the sentence: [10]

- a) A neutral molecule containing a divalent carbon atom having two unshared valence electrons is called _____.
- i) Carbene
 - ii) Carbonium ion
 - iii) Nitrene
 - iv) Free radical
- b) Optical activity of a meso compound is due to _____.
- i) external compensation
 - ii) internal compensation
 - iii) racemisation
 - iv) all of these
- c) Dehydration of cyclohexanol forms _____.
- i) Cyclohexane
 - ii) Cyclobutane
 - iii) Methylcyclopentane
 - iv) Cyclohexene
- d) The C - C bond length in 1, 3 butadiene is _____ Å.
- i) 1.54
 - ii) 1.46
 - iii) 1.33
 - iv) 1.35

P.T.O.

- e) The compound lacking of reactive methylene group _____.
- i) $\text{CH}_2(\text{COCH}_3)_2$ ii) $\text{CH}_2(\text{CN})_2$
 iii) $\text{CH}_2(\text{COOH})_2$ iv) $\text{CH}_2 - (\text{COOEt})_2$
- f) As per Huckel's rule the number of π electrons to be aromatic is given by the formula _____.
- i) $2n^2$ ii) $4n^2$
 iii) $(4n + 2)$ iv) $(4 + n^2)$
- g) Alkylation of benzene is a _____ substitution reaction.
- i) electrophilic ii) nucleophilic
 iii) free radical iv) all of these
- h) To prepare acetaldehyde from G.R. _____ needed.
- i) HCN ii) Acid chloride
 iii) Solid CO_2 iv) HCHO
- i) Equimolar mixture of a pair of enantiomer forms inactive mixture known as _____.
- i) diastereo isomer ii) racemic mixture
 iii) conformer iv) geometrical isomer
- j) Free radical is denoted by _____.
- i) R^+ ii) R^\cdot
 iii) R^- iv) R

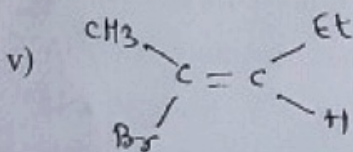
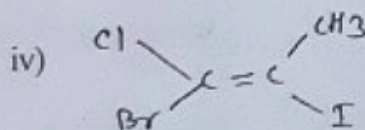
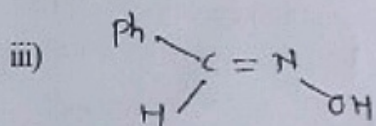
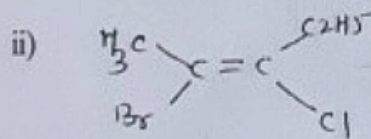
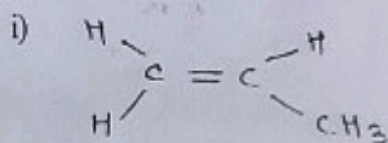
Q2) Attempt any two of the following:

[20]

- a) What are carbanions? Give two methods of preparations of carbanions. Discuss the structure of carbanions.
- b) Discuss optical isomerism in 3 - chloro 2 - butanol.
- c) Give method of preparation of G - R, write any three synthetical applications.
- d) Explain general mechanism of electrophilic aromatic substitution reaction.

Q3) Attempt any four of the following:

- Explain why following compounds are aromatic.
 - Naphthalene
 - Pyridine
 - Pyrrrole
- What is action of following on cyclopropane.
 - Br_2
 - H_2/Ni
- What happens when carbanion is treated with
 - alkyl halide
 - iodine
- How will you prepare following from ethyl aceto acetate
 - butyric acid
 - antipyrine
- What is nitrene? Give two methods of preparations of nitrenes.
- Assign E or Z configuration of the following



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