

Roll No.

91035

B. Sc. (Hons.) Chemistry Ist semester

Examination – December, 2015

CHEMISTRY (ORGANIC CHEMISTRY)

Paper : P - III

Time : Three Hours]

[Maximum Marks : 40

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note: Attempt *five* questions in all, Question 1 is compulsory. Selecting *one* question from each section.

1. (a) Define Retention factor. 1 x 8 = 8
(b) Define Chiral carbon atom.
(c) What is the general formula of cycloalkanes.

91035- 550 -(P-7)(Q-9)(15)

P. T. O.

(d) Name the alkane which cannot be produced by Wurtz reaction.

(e) What is the other name of Marsh gas.

(f) What is bond fission.

(g) Define n-alkanes.

(h) What is Resolution.

SECTION - I

2. (a) Explain the following :

5, 3

(i) Intramolecular H-bond

(ii) Resonance

(iii) Plane of symmetry

(iv) Charge transfer complexes

(v) Threo isomer

91035-550-(P-7)(Q-9)(15) (2)

(b) Give differences in between Inductive effect and Electromeric effect.

3. (a) Explain the following :

4, 4

(i) Centre of symmetry

(ii) Hybridisation

(iii) Chain isomer

(iv) Position isomer

(b) Explain the following:

(i) Metamers

(ii) Functional isomer

(iii) Clathrates

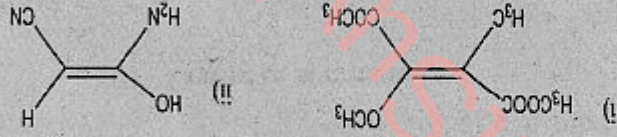
(iv) Inclusion compounds.

91035-550-(P-7)(Q-9)(15) (3)

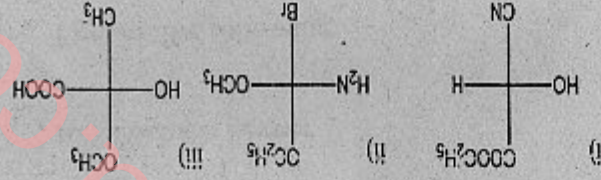
P. T. O.

SECTION - II

4. (a) Assign the 'E' and 'Z' configuration to the following:



- (b) Assign the 'R' or 'S' configuration to the following:



5. (a) Explain the Atropisomerism in Biphenyls. 2, 4, 2
(b) Explain the stability order among the different conformation of butane.
(c) What are conditions of Geometrical isomerism.

91035-550-(P-7)(Q-9)(15) (4)

SECTION - III

6. (a) Explain the Isotopic method to determine the reaction mechanism. 4, 4

- (b) Explain the Paper Chromatography.

7. (a) Explain the following: 6, 2

(i) Bond Fission

(ii) Electrophile

(iii) Nucleophile

- (b) Explain the stability order among primary, secondary, tertiary carbanion.

SECTION - IV

8. What will happen when: $1 \times 8 = 8$

- (a) Methane reacts with Cl_2 /light followed by Na/dry ether, Heat

91035-550-(P-7)(Q-9)(15) (5)

P.T.O.

(b) Ethanoic acid reacts with NaOH/CaO , Heat

(c) Methane reacts with Cl_2/light followed by $(\text{C}_2\text{H}_5)_2\text{LiCu}$

(d) Ethanal reacts with $\text{HI}/\text{Red P}$, Heat

(e) Ethanoic acid reacts with NaOH followed by electrolysis

(f) Methanamine reacts with HNO_2 followed by $\text{HI}/\text{Red P}$

(g) Ethanol reacts with $\text{HI}/\text{Red P}$

(h) Chloromethane reacts with $\text{Na}/\text{dry ether}$.

9. Explain the following reactions :

(a) Wurtz reaction

91035-550-(P-7)(Q-9)(15) (6)

(b) Dieckman condensation

(c) Correy House reaction

(d) Simmons-Smith reaction

2, 2, 2, 2

91035-550-(P-7)(Q-9)(15) (7)