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SARDAR PATEL UNIVERSITY

M.Sc. Pharmaceutical Chemistry, Second Semester Examination
Tuesday, 12th April
2016
10.30 a.m. to 1.30 p.m.

Organic Chemistry: PS02EPCH01

Total Marks : 70

Note : (i) All questions are to be attempted. (ii) Figures to the right indicate marks.

Q.1 Choose the correct option for the following : **8x1=08**

(i) Which reactant will undergo Schmidt rearrangement ?
(a) Amines (b) Carboxylic acid (c) Alkyl halides (d) Esters

(ii) Cyclohexane shows…….. conformational isomers.
(a) three (b) one (c) two (d) four

(iii) Free radicals are produce upon …….. cleavage.
(a) Homolytic (b) Heterolytic (c) both "a" & "b" (d) None

(iv) Which intermediate is produce in ***ene*** reaction ?
(a) Carbcation (b) Free radical (c) Ylide (d) None

(v) Which is used as oxidizing agent ?
(a) $KMnO_4$ (b) HCOOOH (c) OsO_4 (d) all

(vi) What do you mean by reduction ?
(a) loss of electron (b) gain of electron (c) addition of oxygen (d) None

(vii) What do you mean by FGI ?
(a) Functional group inter conversion (b) Free group interconversion
(c) Functional group disconnection (d) Free group disconnection

(viii) Retro synthesis is shown by …….. arrow.
(a) → (b) ⇒ (c) ↔ (d) ⇌

Q.2 Answer the following : (Attempt any seven) **7x2=14**

(i) Write the synthesis of Cycloketone via Dieckmann condensation.

(ii) Give an example of reaction proceeds via non-classical carbocation formation, also write its reaction.

(iii) Distinguish between: Enentiomers and diastereomers.

(iv) Define : (a) carbocation & (b) heterolysis.

(v) What is meant by synthon and reagents ?

(vi) Write the structure and uses of performic acid.

(vii) Write main application of Grignard reagent.

(viii) Write the Diels-Alder reaction.

(ix) Define symmetry operation giving suitable examples.

P.T.O.

Q.3 **Answer the following :**

A Write the reaction and appropriate mechanism for the following: **06**
(i) Hofmann rearrangement (ii) Perkin condensation.

B Identify the reaction intermediate for the following reaction and suggest its reaction mechanism. **06**
(i) Curtius reaction (ii) Lossen Reaction

OR

B Write the reaction and appropriate mechanism for the following: **06**
(i) Wolf rearrangement (ii) Hydroboration.

Q.4 **Answer the following :**

A Define racemic mixture. Write in detail about resolution of racemic modification. **06**

B Define Isomers. Give its classification in detail with suitable example. **06**

OR

B Draw R & S configuration for tartaric acid. Write the limitation of D/L notation. **06**

Q.5 **Answer the following :**

A Define oxidizing agent. Write synthesis, uses of potassium permanganate. **06**

B Write the synthesis and main application of following : **06**
(a) $LiAlH_4$ (b) Lindlar catalyst

OR

B Enlist the name of alkylating agents and explain the function of alkylating agents in synthesis . **06**

Q.6 **Answer the following:**

A What is disconnection approach ? Write basic rule of retrosynthesis. **06**

B Write synthesis of Ibuprofen and n-propanolol *via* retro synthesis. **06**

OR

B Write synthesis of ciprofloxacin and identify synthon and reagents for the reaction. **06**

==X==X==X==