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SEAT No._____ No. of printed pages : 02

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SARDAR PATEL UNIVERSITY

M. Sc. Pharmaceutical Chemistry, Second Semester Examination
Monday, 9th April
2018
10.00 a.m. to 1.00 p.m.
Organic Chemistry – II : PS02CPCH21

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) The change in orientation of monochromatic plane of polarized light is term as ……..
(a) Optical rotation (b) Specific rotation (c) Chirality (d) All

(ii) How many conformational isomers are possible for compound having C_2H_6 molecular formula?
(a) 3 (b) 1 (c) 2 (d) 4

(iii) Ylides are intermediates produce during ……. reaction.
(a) Curtius (b) Schmidt (c) Wittig (d) Hofmann

(iv) An enantiomers are……..mirror image.
(a) Non superimpossable (b) Superimpossable (c) Both (d) None

(v) Which is used as reducing agent?
(a) $KMnO_4$ (b) HCOOOH (c) OsO_4 (d) None

(vi) Lindlar catalyst is a mixture of ……
(a) Pb-$CaCO_3$ & $Pb(COOCH_3)_2$ (b) $CaCO_3$
(c) Pb (d) $CaCO_3$ & $Pb(COOCH_3)_2$

(vii) A constituent part of a molecule to be synthesized, which is regarded as the basis of a synthetic procedures called … ……
(a) FGI (b) Free group interconversion
(c) Synthon (d) Retro synthesis

(viii) The design of a synthetic scheme using cheap, traditional reagents, rather than expensive modern reagent is term as ……..
(a) Free radical (b) Inorganic synthesis
(c) Synthetic approach (d) Retro synthesis

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

(i) Write Hofmann rearrangement reaction.
(ii) Explain stability of *t* - carbocation.
(iii) Distinguish between : Plane of symmetry and Centre of symmetry.
(iv) Define reaction intermediate. Write the Wagner – Meerwein rearrangement.
(v) Enlist various reducing agents.
(vi) Write main applications of alkylating agents.
(vii) Define : Synthon and synthon equivalent.
(viii) Define stereogenic centre using suitable example.
(ix) What is meant by FGI in disconnection reaction ?

Q.3

A. Define conformational isomers. Draw all the possible conformers for Cyclohexane. **06**

B. Write in detail about racemic modification. **06**

(P.T.O.)

OR

B. Draw the structure and assign as R and S nomenclature for the following. **06**
(a)3-choro-1-pentane (b) 3-chloro-4-methyl-1- pentane

Q.4

A. Write the reaction and appropriate mechanism for the following : **06**
(a) Curtius rearrangement (b) Schmidt reaction.

B. Identify the reaction intermediate for the following rearrangement and suggest its appropriate reaction mechanism. **06**
(a) Clasein rearrangement (b) Beckmann rearrangement

OR

B. Write the Wittig reaction and its mechanism. **06**

Q.5

A. Define oxidation and oxidizing agent. Write structure and uses of OsO_4 and Potassium permanganate. **06**

B. Write the synthesis and main application of following reagents : **06**
(a) $LiAlH_4$ (b) performic acid

OR

B. Write synthesis, structure and application of Grignard reagent. **06**

Q.6

A. Identify the synthon for antibiotic ciprofloxacin. Write synthetic route for the ciprofloxacin. **06**

B Propose a retrosynthetic analysis for the following two compounds : **06**
(a) Pent-2-en-1-oic acid (b) Pent-3-en-1-oic acid

OR

B Write basic rule of retro synthesis. **06**