

G-2/214/21

Roll No.

M.Sc. II Semester Examination, 2021**CHEMISTRY****Paper II****(Organic Chemistry)**

Time : 3 Hours]

[Max. Marks : 80

Note : All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.

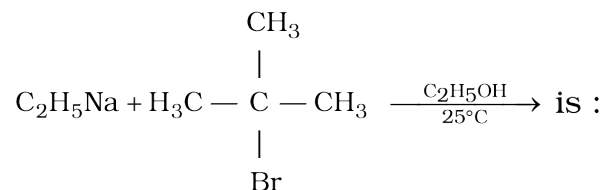
SECTION A**1×8=8****(Objective Type Questions)**

Choose the correct answer :

1. The reaction in which silver salts of carboxylic acids react with a halogen to give an organic halide is :

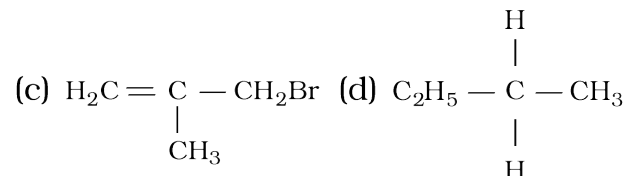
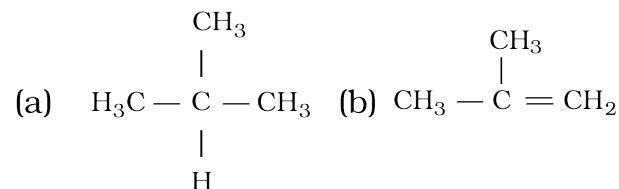
- (a) Hunsdieker Reaction
(b) Sandmeyer Reaction
(c) Aldol Reaction (d) Benzoin reaction

2. The product of the reaction



P.T.O.

[2]



3. Propene on hydroboration gives :

- (a) Propan-1-ol (b) Propan-2-ol
(c) Propanone (d) None of these

4. Michael addition reaction involves :

- (a) Carbocation (b) Free radical
(c) Carbanion (d) None of these

5. Lithium aluminium hydride reduction of 4-t-butyl cyclohexanone gives which alcohol ?

- (a) Axial alcohol (b) Equatorial alcohol
(c) Both (a) and (b) (d) None of these

6. Wittig reaction uses :

- (a) Carbonyl compounds with ylides
(b) Alcohol with ylides

G-2/214/21

(c) Phosphate esters

(d) None of these

7. A 1, 3 migration of carbon can take place thermally with of configuration.
8. Pericyclic reaction are concerted, unaffected by catalysts or solvent and have transition state.

SECTION B

4×6=24

(Short Answer Type Questions)

Note : Answer the following questions in 250 words.

Unit-I

1. Explain Neighbouring Group Assistance in detail.

Or

Explain the mechanism of E₁ and E₂ reactions.

Unit-II

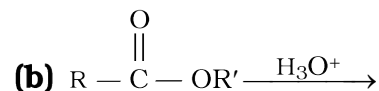
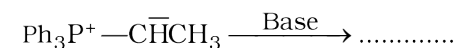
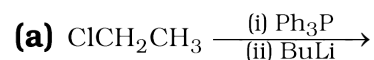
2. Write explanatory notes on Mechanistic and stereo chemical aspects of addition reaction involving electrophiles.

Or

Explain Hydrogenation of double and triple bonds with suitable examples.

Unit-III

3. Complete the following reactions :



Or

Explain the mechanism of Hydrolysis of esters and amides.

Unit-IV

4. Explain cycloaddition antarafacial and suprafacial addition.

Or

Explain FMO approach for cycloaddition reaction.

SECTION C**12×4=48****(Long Answer Type Questions)****Note :** Answer the following questions in 500 words.**Unit-I****1.** Explain :

- (i) Auto oxidation coupling of alkynes.
- (ii) Arylation of Aromatic compounds by diazonium salts.

Or

Explain :

- (i) The spectrum of E₁, E₂ and E₁CB mechanism.
- (ii) Mechanism and orientation in Pyrolytic elimination.

Unit-II**2.** Discuss the addition reaction to cyclopropane ring and hydrogenation of aromatic rings.*Or*

Explain in detail :

- (i) Michael Reaction,
- (ii) Sharpless Asymmetric Epoxidation.

Unit-III**3.** How an aldol reaction can be made regioselective, diastereo selective and enantio

selective ? Explain taking suitable compounds and only the reagents and conditions in each case.

Or

Give the mechanism and applications of the following reactions :

- (i) Perkin Reaction,
- (ii) Mannich Reaction,
- (iii) Stobbe Reaction.

Unit-IV**4.** Write explanatory notes on :

- (i) Fluxional Tautomerism,
- (ii) Sigmatropic Rearrangements,
- (iii) Conrotatory and Disrotatory motions.

Or

Explain taking one example as to how FMO method, PMO method and correlation diagram can be used for analysing a Pericyclic reaction.

★ ★ ★ ★ ★ c ★ ★ ★ ★ ★