

M.Sc. Semester - 1 (CBCS) Examination
Jan/Feb. -2022 [OLD COURSE]
ORGANIC CHEMISTRY (CORE)

Time: 1:30 Hours

Marks: 42

Instructions:

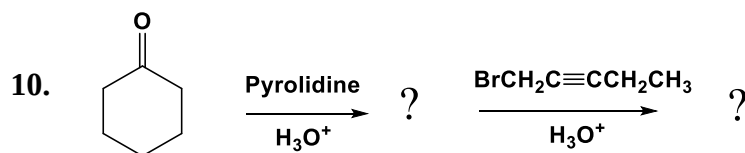
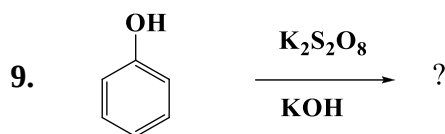
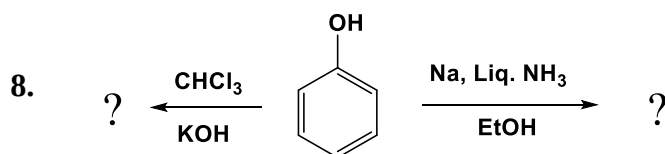
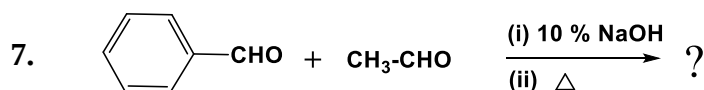
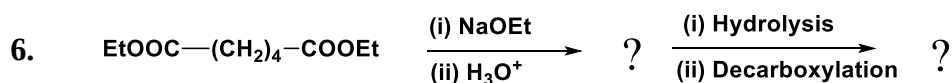
1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions..
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Q.1 Answer any **seven** of the following ten questions.

[14 Marks]

1. What is Enamine? Explain with example.
2. Why Beckmann rearrangement is stereospecific?
3. Explain singlet and triplet state of carbene.
4. Discuss stability of non-classical carbocation with example.
5. What is benzyne? Explain reactivity of benzyne towards various nucleophiles.

Complete the following reactions and give name of the appropriate reactions.

**Q.2** Answer any **two** of the following three questions.

[14 Marks]

Describe the following reagents in detail:

1. Tetrabutylammonium bromide
2. Wilkinson's catalyst
3. Merrifield Resin

Q.3 Answer the following questions.

[14 Marks]

1. Explain principle, mechanism and applications of Prins reaction.
2. Describe Neber rearrangement in detail.

OR

Q.3 Answer the following questions.

[14 Marks]

Describe principle, mechanism, migratory aptitude and three applications of the following rearrangement:

1. Sommelet Hauser
2. Favorskii

Q.4 Answer any **two** of the following three questions.

[14 Marks]

Describe principle, mechanism, and three applications of the following reaction:

1. Noyori annulation
2. Stille coupling
3. McMurry coupling

Q.5 Answer any **two** of the following four questions.

[14 Marks]

1. Give principle, mechanism and applications of the Suzuki cross-coupling reaction.
2. Discuss principle, mechanism, and migratory aptitude for Baeyer Villiger oxidation reaction.
3. What is multicomponent reaction (MCR)? Give principle, mechanism and two application of Ugi reaction.
4. What is epoxidation? Explain principle, mechanism and stereoselectivity for Sharpless- asymmetric epoxidation reaction.
