

M.Sc.(Chem.) Semester - 1 (CBCS) Examination

Nov/Dec - 2022 [OLD COURSE]

ORGANIC CHEMISTRY(CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

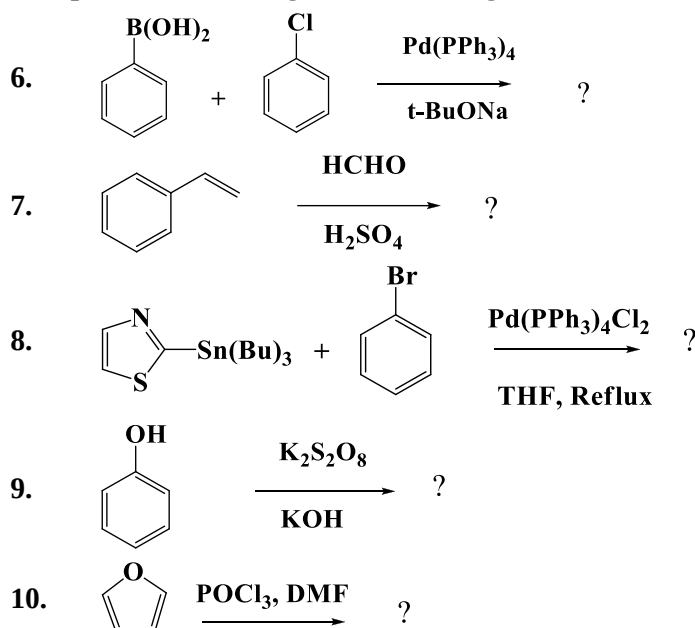
1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1 Answer any **seven** of the following ten questions.

[14]

1. What is heterolytic fission? Explain with example
2. Write principle of Beckmann rearrangement.
3. Explain singlet and triplet state of carbene.
4. How resonance affect the stability of carbocation ? Explain with example.
5. What is benzyne? Discuss hybridization and reactivity of benzyne.

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

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

[14]

Describe the following reagents in detail:

1. TBAB
2. Wilkinson's catalyst
3. DCC

Q.3 Answer the following questions.

[14]

1. Explain principle, mechanism and applications of Reformatsky reaction.
2. Describe Fries rearrangement in detail.
3. Discuss woodward and prevost dihydroxylation with examples.

OR

Q.3 Answer the following questions. [14]

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

1. Sommelet Hauser
2. Benzil Benzilic acid

Q.4 Answer the following questions. [14]

(a) Answer any two out of following three questions:

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

1. Birch reduction
2. Barbier-Wieland degradation
3. Willgerodt-Kindler

(b) Answer any one out of two questions:

1. Passireni reaction
2. Elbs-persulphate reaction

Q.5 Answer any **two** of the following four questions. [14]

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