

M.Sc. Semester - 1 (CBCS) Examination

Oct/Nov. -2018

ORGANIC CHEMISTRY (CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

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

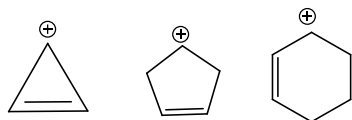
Q.1 Answer any **seven** of the following ten questions.

[14 Marks]

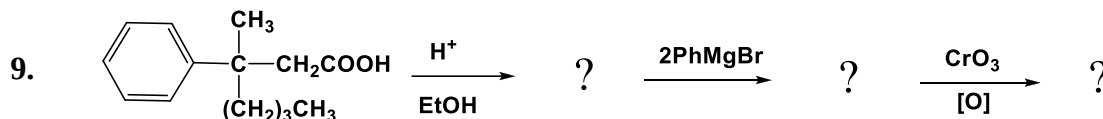
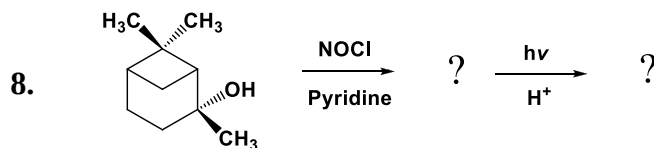
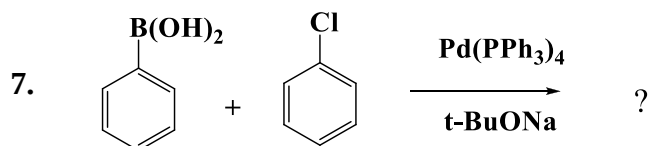
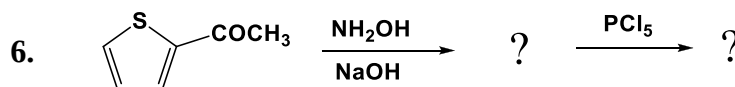
1. How resonance affect the stability of Carbanion ? Explain with example
2. What is carbene? Explain singlet and triplet state of carbene.
3. How will you generate Benzyne? Explain with one example.
4. What is Miscellaneous Carbocation?

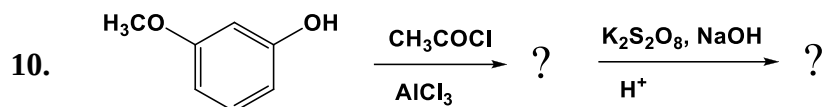
Arrange the following Carbocation according to their increasing order of stability:

5.



Complete the following reactions and give name of the corresponding reaction.





Q.2 Answer any **two** of the following three questions. [14 Marks]

Describe the following reagents in detail:

1. Wilkinson's catalyst
2. DDQ
3. Woodward & Prevost reagent

Q.3 Answer the following questions. [14 Marks]

1. Explain principle, mechanism and applications of Beckmann rearrangement.
2. Describe Fries rearrangement in detail.

OR

Q.3 Answer the following questions. [14 Marks]

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

1. Suzuki reaction
2. Stille coupling reaction

Q.4 Answer any **two** of the following three questions. [14 Marks]

Describe principle, mechanism, and three applications of the following multi-component reaction (MCR):

1. Ugi
2. Passerini
3. Biginelli

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

1. What is asymmetric epoxidation? Describe principle, mechanism and stereoselectivity of Sharpless-epoxidation reaction.
2. Write a note of Merrifield Resin.
3. Give principle, mechanism and applications of the Prins reaction.
4. Describe principle, mechanism and application of Vilsmeier Haack reaction.
