

CHEMISTRY Paper-VI

(Organic Chemistry–B)

Time Allowed : 3 Hours

Maximum Marks : 45

Note : Attempt five questions in all, selecting one question from each Section.

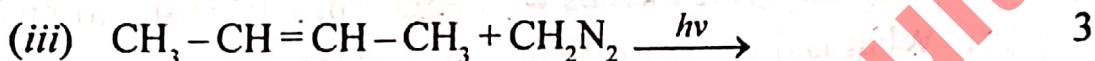
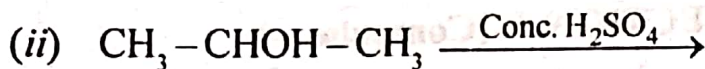
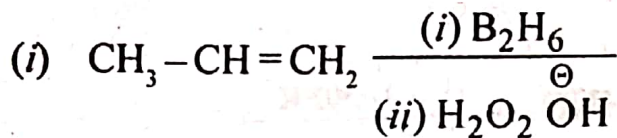
Question No. 9 is compulsory. All questions carry equal marks.

SECTION-I

1. (a) Bromine is less reactive but more selective whereas chlorine is more reactive but less selective. Explain with example. 3
- (b) Define Wurtz-reaction. Discuss its mechanism. 3
- (c) Explain Sachse-Mohr theory of strain less rings. 3
2. (a) What is Corey-House reaction ? Discuss its advantages over Wurtz reaction. 3
- (b) Discuss the mechanism of chlorination of methane and give three evidences in support of the above mechanism. 3
- (c) Discuss Bayer's Strain theory and its limitations. 3

SECTION-II

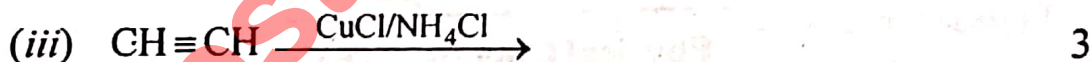
3. (a) What do you mean by Saytzeffs Rule? Give one example. Arrange the following alkenes in order of their stabilities But-2-ene, 2-methyl but-2-ene, 2,3-dimethyl but-2-ene. 3
- (b) Discuss the mechanism of Anti Markownikoff's addition to alkenes. 3
- (c) Complete the following :



4. (a) Give the mechanism of oxymercuration reduction. 3
- (b) What do you understand by 1, 2-hydride shift? Explain with suitable examples from dehydration of alcohols. 3
- (b) Write note on ozonolysis olefines. 3

SECTION-III

5. (a) What is the cause of acidic nature of alkynes? Explain. 3
- (b) Which is more stable penta-1, 4-diene or buta-1, 3-diene? Explain. 3
- (c) Complete the following :



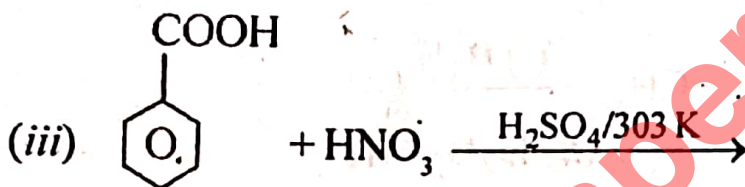
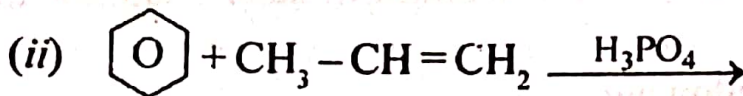
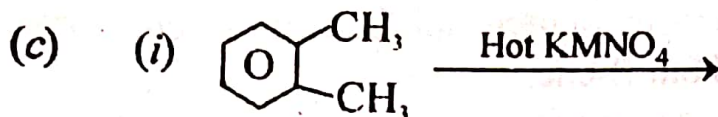
6. (a) What is Diels Alder reaction referred to as (4 + 2) Cycloaddition reaction? Explain with example. 3
- (b) Give any three methods for the preparation of dienes. 3
- (c) Explain why alkynes undergo nucleophilic addition reactions. 3

SECTION-IV

7. (a) Chlorine deactivates benzene ring but it is ortho, para directing. Justify. 3
- (b) Define :
- (i) Huckel's Rule
- (ii) Annulenes. 3
- (b) Write short notes on :
- (i) α and π complexes
- (ii) Birch reduction 3

8. (a) What are aromatic, antiaromatic and non-aromatic compounds ?
Give examples. 3

(b) Define Friedal Craft's reaction. Give its mechanism. 3



SECTION-V (Compulsory)

9. (i) Why are cycloalkanes with large rings not easily formed ?

(ii) What is meant by orientation in halogenation of alkanes ?

(iii) What is Epoxidation ?

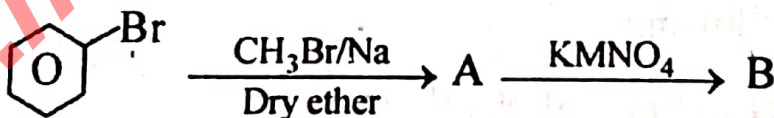
(iv) Explain the term torsional strain.

(v) Define the term dienophile.

(vi) How can you convert propyne to 2-pentyne ?

(vi) Give molecular orbital structure of benzene.

(viii) Identify the product A and B :



(ix) Give one method of formation of biphenyl.

1 × 9 = 9