

(i) Printed Pages :4]

Roll No.

(ii) Questions :9]

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B.A./B.Sc.(General) 2nd Semester 1055

CHEMISTRY

(Same for B.Sc. Microbiol & Food tech.)

Paper - VI : Organic Chemistry-B

Time : 3 Hours]

[Max. Marks : 45

Note :- Attempt five question in all, selecting one question from each Section. Question No. IX is compulsory. All questions carry equal marks.

SECTION-I

- I. (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
- II. (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

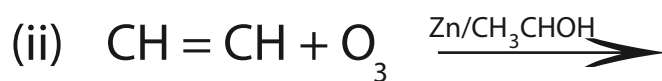
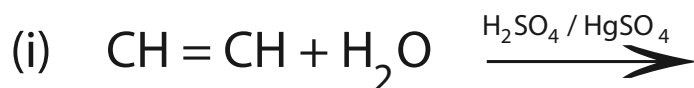
SECTION-II

- III. (a) What do you mean by Saytzeff's 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.
- (c) Complete the following :
- (i) $\text{CH}_3 - \text{CH} = \text{CH}_2 \xrightarrow[\text{H}_2\text{O}_2, \text{OH}^-]{\text{B}_2\text{H}_6}$
- (ii) $\text{CH}_3 - \text{CHOH} - \text{CH}_3 \xrightarrow{\text{Conc. H}_2\text{SO}_4}$
- (iii) $\text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_3 + \text{CH}_2\text{N}_2 \xrightarrow{h\nu}$ 3
- IV. (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
- (c) Write note on ozonolysis olefines. 3

SECTION-III

- V. (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



3

VI. (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. Explain why alkynes undergo nucleophilic addition reactions.

3

SECTION-IV

VII. (a) Chlorine deactivates benzene ring but it is ortho, para directing. Justify.

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(b) Define:

(i) Huckel's Rule

(ii) Annulene.

(c) Write short notes on

(i) σ and π complexes

(ii) Birch reduction.

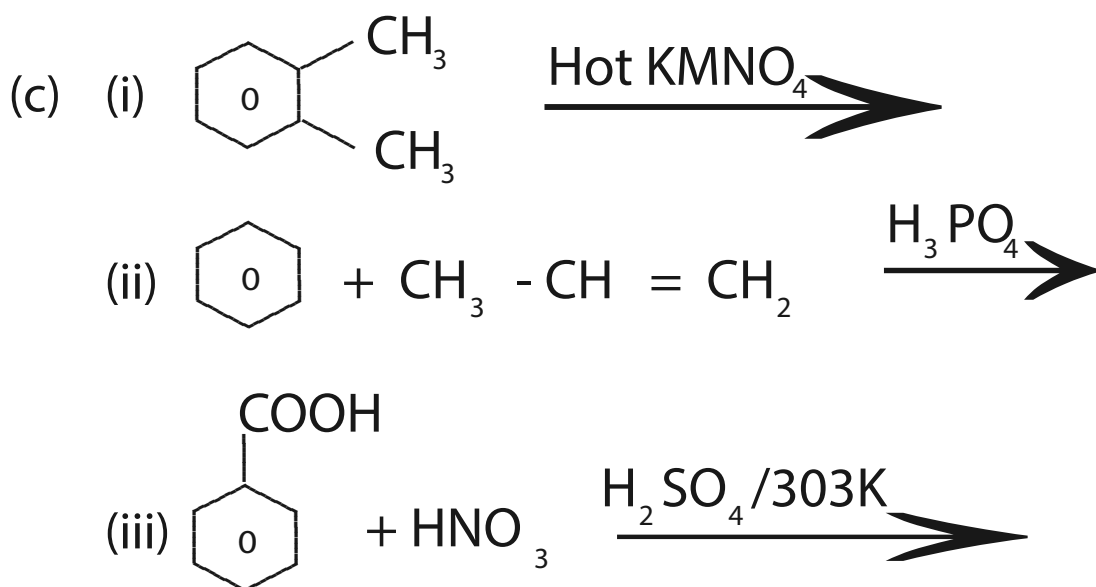
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VIII. (a) What are aromatic, antiaromatic and non-aromatic compounds? Give examples.

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(b) Define Friedel Craft's reaction. Give its mechanisms.

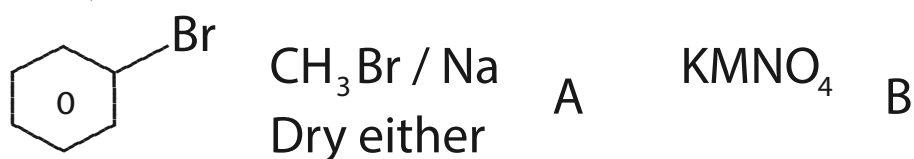
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SECTION-V(Compulsory)

- IX. (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 ?
 (vii) Give molecular orbital structure of benzene.
 (viii) Identify the product A and B:



- (xi) Give one method of formation of biphenyl.

1x9=9