

Total No. of Printed Pages : 4

Total No. of Questions : 9

ICH452

Sl.No. : 0018

II Semester M.Sc. Degree Examination, May 2018
(CBCS Scheme/Revised Syllabus)
INDUSTRIAL CHEMISTRY
ICH 452: ORGANIC CHEMISTRY - II

Time : 3 Hours

Max. Marks : 70

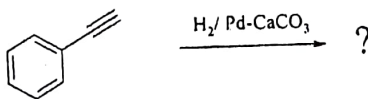
- Instructions : 1) Answer any Five questions from Part - A and any five questions from Part-B
2) Figures to the right indicate marks

PART - A

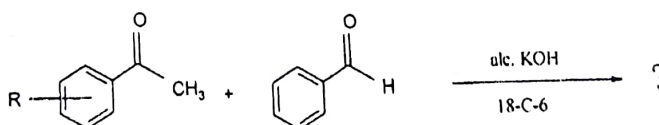
Q1) Answer any FIVE sub-divisions:

[5 × 2 = 10]

- a) Predict the product/s:



- b) What is a molozonide? Outline its formation and draw its general structure.
c) Sketch the mechanism of Birch reduction of toluene.
d) Mention the name reaction and highlight the importance of the product/s:

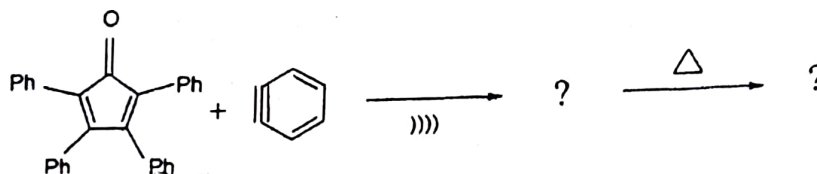


- e) Give the structural differences between Sterols and Triterpenes.
f) Highlight Emde degradation. Give an example of its use in alkaloid chemistry.

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- g) What are phase transfer catalysts? Illustrate their utility in organic chemistry.
 h) Complete the following sequence:



PART - B

Answer any Five of the following:

[5 × 12 = 60]

- Q2)** a) How do you use of 1.3 - dithiane in organic synthesis? Highlight the importance of the reagent in organic syntheses.
 b) Outline the utility of organomagnesium reagents in any two functional group transformations.
 c) Write an account of the synthetic applications of crown ethers.

[4 + 4 + 4 = 12]

- Q3)** a) What are organoboranes? Illustrate the usefulness of organoboranes over diborane in synthetic organic chemistry.
 b) Discuss any two synthetic applications each of:
 i) DCC and ii) Gilman's reagent.
 c) Give an account of use of ionic liquids in organic syntheses.

[4 + 4 + 4 = 12]

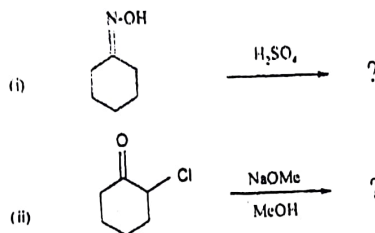
Q4) a) Citing examples discuss:

- i) Mannich reaction ii) Vilsmeier-Haack reaction.

- b) Write an account of the complementarity of the Meerwein-Verley-Ponndorf reduction v/s the Oppenauer oxidation.

[6 + 6 = 12]

- Q5) a) How are inter- and intra-molecular migrations detected in mechanistic organic chemistry?
- b) Outline the Barbier-Wieland degradation.
- c) Predict the product/s, name the reaction and sketch the mechanisms for:



[4 + 4 + 4 = 12]

- Q6) a) Describe any two methods for the isolation of natural products from plant sources.
- b) What is oleic acid? Draw its structure and give its synthesis.
- c) Sketch the mevalonate pathway for conversion of acetyl-CoA to isopentenyl pyrophosphate.

[4 + 4 + 4 = 12]

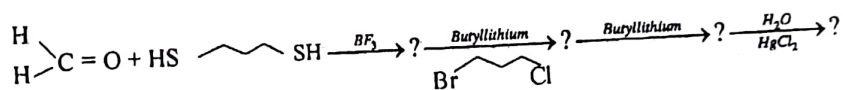
- Q7) a) Outline the structural elucidation of ocimenes.
- b) Sketch the synthesis oestrone.
- c) Explain the structure elucidation of ephedrine.

[4 + 4 + 4 = 12]

- Q8) a) Briefly discuss about ultrasonic equipment normally used in sono chemistry field
- b) Outline the mechanism of phase transfer catalysis.
- c) Give an account of Leuckardt's reductive amination of ketones. [4 + 4 + 4 = 12]

Q9) Write short notes on :

- a) Solid state solvent-less photochemical reactions.
- b) Write the product and predict the mechanism in the following reaction.



- c) Organic syntheses using scavenger resins.

[4 + 4 + 4 = 12]

