

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

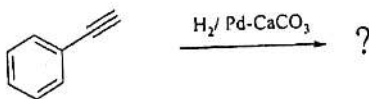
- Instructions :** 1) Answer any Five questions from Part - A and any five questions from Part-B
2) Figures to the right indicate marks

PART - A

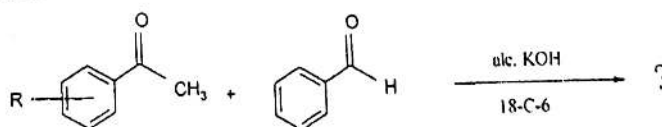
Q1) Answer any FIVE sub-divisions:

[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:

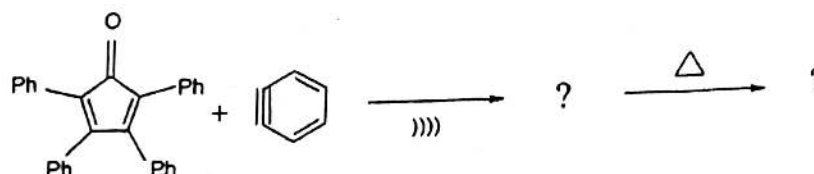


- e) Give the structural differences between Sterols and Triterpenes.
f) Highlight Emde degradation. Give an example of its use in alkaloid chemistry.

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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.

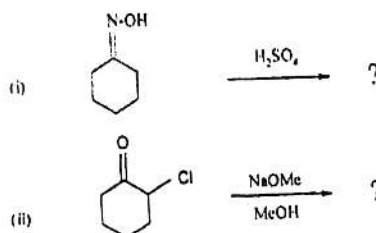
[4 + 4 + 4 = 12]

- 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]

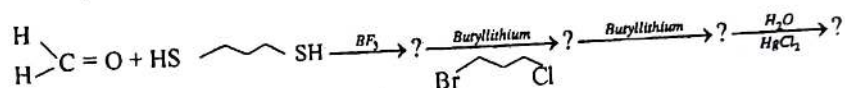
- Q7) a) Outline the structural elucidation of ocimenes.
- b) Sketch the synthesis oestrone.
- c) Explain the structure elucidation of ephidrine.

[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]

