



IV Semester M.Sc. Degree Examination, June 2017
(NS-2010-11 Scheme) (Repeaters)
CHEMISTRY (ORGANIC)
C401-OC : Organometallic and Heterocyclic Chemistry

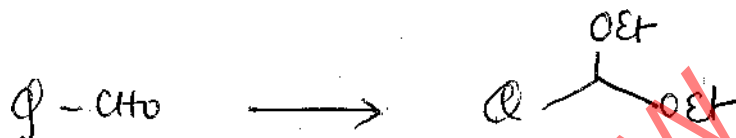
Time : 3 Hours

Max. Marks : 80

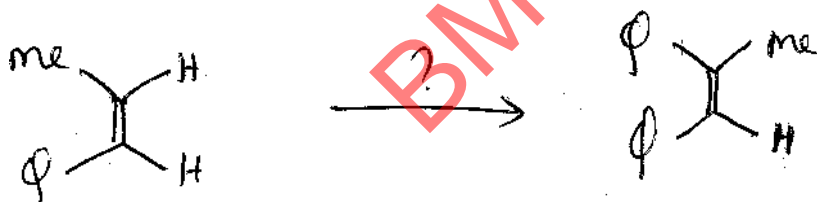
Instruction : Answer Question No. 1 and **any five** of the remaining.

1. Answer **any ten** of the following : (2×10=20)

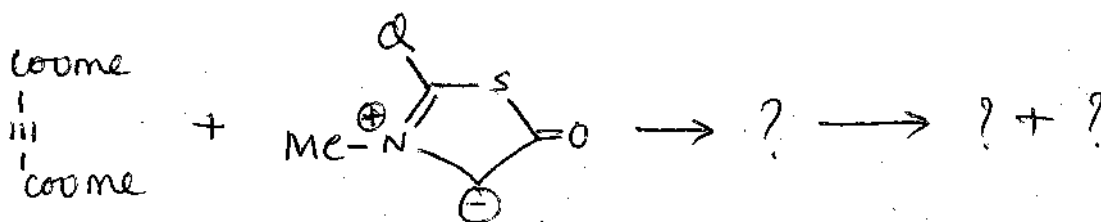
- a) Mention any two methods of preparation of organozinc compounds.
b) How do you achieve the following transformation ? Give reaction sequence.



- c) Propose any two reactions of benzofuran.
d) Suggest a suitable reagent for the following transformation. Give mechanism.

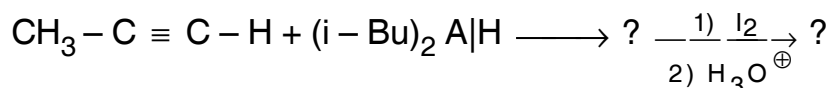


- e) How organotransition metal complexes helps in the stabilisation of cyclobutadiene ?
f) Formulate the product of the reaction :

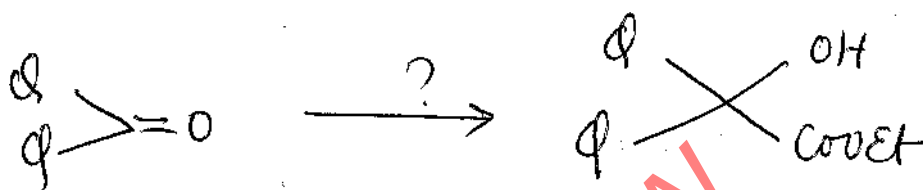




- g) Outline a method for the synthesis of thiepins.
- h) Discuss any one method of preparation and decomplexation of η^2 -carbene complexes.
- i) Predict the product of the following reaction.



- j) Identify the reagents for the following conversion. Give mechanism.



- k) State Green rules.
- l) Write any one reactions of azetidine.

2. Write a note on :

- a) Organo selenium compounds
- b) Organo tellurium compounds
- c) Organo lithium compounds.

(4+4+4=12)

3. a) Propose any one method of synthesis of arsoline and stibolane.
- b) Formulate any two reactions of oxepin.
- c) Mention any two synthesis of Diazoline.

(4+4+4=12)

4. a) Give a brief account on the use of organotin in organo synthesis.
- b) Discuss epoxide ring opening reaction by organo copper reagents.
- c) What is Barton decarboxylation reaction ? Give mechanism.

(4+4+4=12)

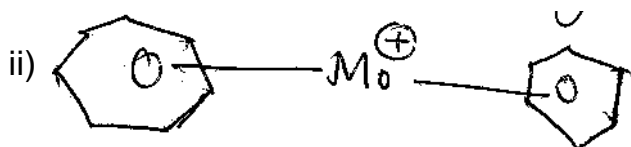
5. a) mention any two synthesis of Diazocine.
- b) Discuss any two methods for the synthesis of Triazines.
- c) Propose any two methods of synthesis of Type A - Mesoionic compounds.

(4+4+4=12)



6. a) Calculate the EAN value for the following :

i) CP_2Fe



b) Write a note on carboxylation reaction with zr compounds.

c) Give the reagent and write the mechanism for the following conversion :



7. Write notes on :

a) Replacement of mercury by electrophiles

b) Peterson olefination

c) Organo aluminium reagents.

(4+4+4=12)

BMSCW