

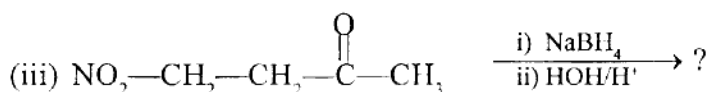
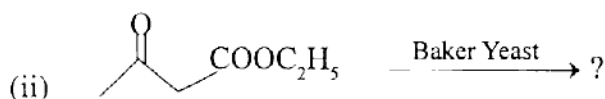
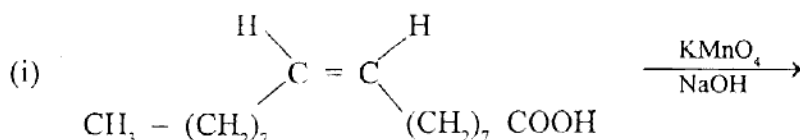
M.Sc. Semester-III (C.B.C.S.) Examination
CHEMISTRY (NEW)
(Organic Chemistry-I (Organic Synthesis-I))
Paper—XI

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory.
 (2) All questions carry equal marks.

1. (a) Complete the following reaction :



6

(b) Compare the reduction using LiAlH_4 and sodium borohydride with example.

5

(c) Explain Oppenquer oxidation with its mechanism.

5

OR

(p) Describe :

(i) Wolf-Krishner Reduction

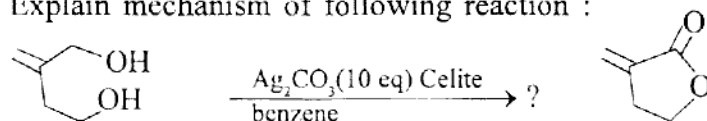
(ii) Selective oxidation of alkyl side chain in aromatic compounds

(iii) Metal based reduction using $\text{Li}/\text{Na}/\text{Ca}$ in liquid ammonia.

9

(q) Explain mechanism of following reaction :

4



(r) Mechanism of ozonolysis.

3

2. (a) Explain Nazarov cyclization reaction.

4

(b) Give the method of preparation for (i) Oxiranes and (ii) Naphthalene.

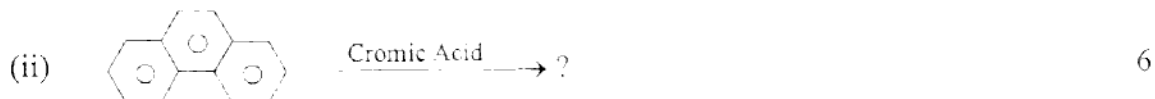
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(c) Explain the aromaticity of heterocyclic compounds.

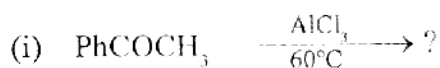
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OR

- (p) Explain Pauson-Khand reaction. 5
- (q) Give the synthesis and importance of azirines. 5
- (r) Complete the following reactions :

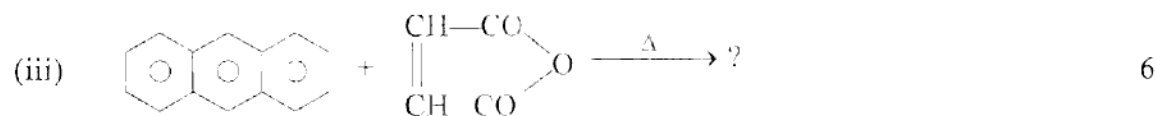
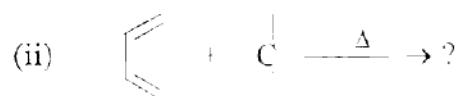


3. (a) What do you expect from following and give the name of reaction :



- (b) State and explain Claisen reaction with mechanism. 5

- (c) Complete the following reaction :



OR

- (p) Explain Perkin reaction with mechanism. 5

- (q) Describe :

(i) Synthetic equivalent

(ii) Retrosynthesis. 5

- (r) In C-C bond formation reactions, give the generation and applications of electrophilic and nucleophilic carbon species. 6

4. (a) Explain regioselectivity in Stark enamine reaction. 5

- (b) Give applications of phosphorous ylide in organic synthesis. 5

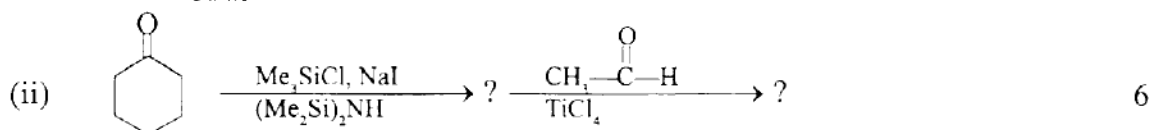
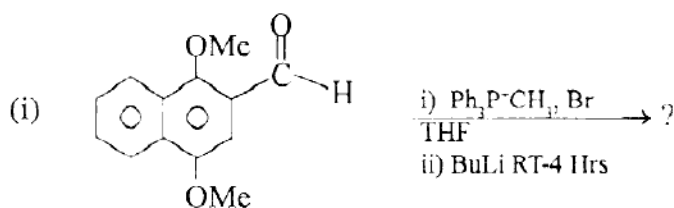
- (c) Describe :

(i) Dipole inversion

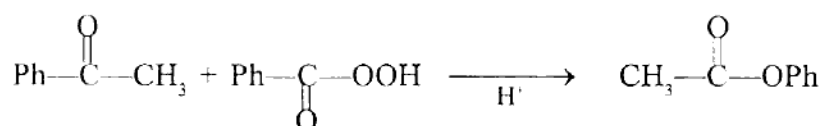
(ii) Generation of acyl anion. 6

OR

- (p) Explain applications of sulphur ylide in organic synthesis. 5
- (q) Give the mechanism of elimination of β -hydroxysilane in acidic medium. 5
- (r) Predict the product and explain their formation :



5. (a) State and explain Shapiro reaction with mechanism. 5
- (b) How will you convert following :



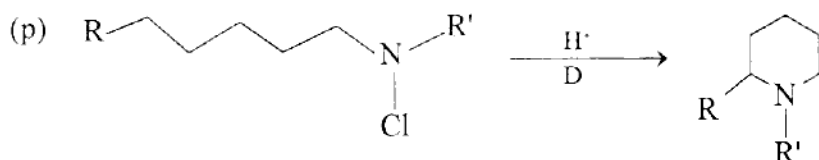
Give the name of reaction. 5

- (c) Explain :

(i) Buchwald-Hartwig coupling reaction

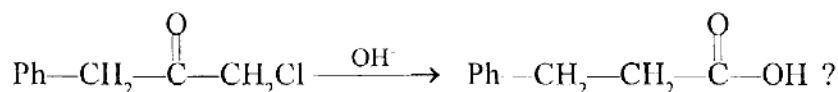
(ii) Julia Lythgoe Olefination. 6

OR



Give the name of reaction. Explain its mechanism. 6

- (q) How will you convert :



Explain its mechanism. 5

- (r) Explain :

(i) Eschenmo Ullmann Coupling Reaction

(ii) Sonogishira Cross Coupling. 5

