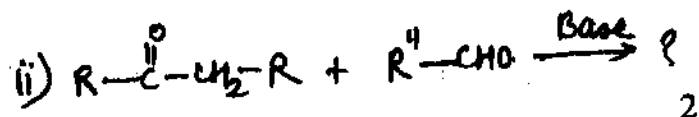
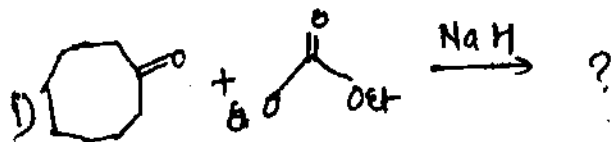


(d) Predict the product for following reactions :—



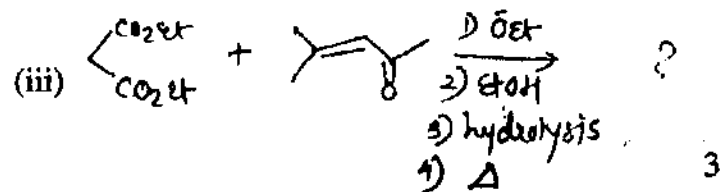
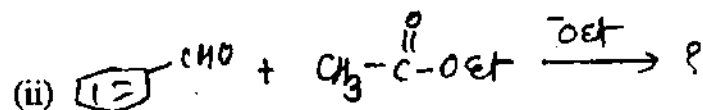
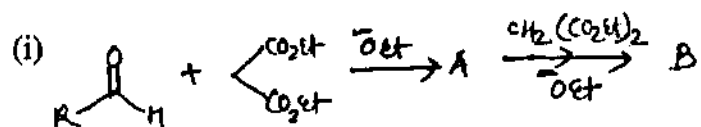
OR

(p) Give an account of :

(i) Distereoselectivity in aldol condensation,

(ii) Stobbe condensation. 6

(q) What product would you expect from the following reaction ?



AQ - 1001

Third Semester M. Sc. (II) Chemistry CBCS
Examination

ORGANIC CHEMISTRY

(Organic Synthesis - I)

Paper - XI

P. Pages : 10

Time : Three Hours]

[Max. Marks : 80

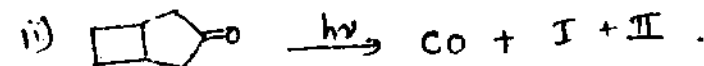
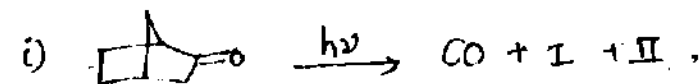
Note : All questions are compulsory and carry equal marks.

1. (a) Explain the following terms :—

(i) Photosensitization.

(ii) Intersystem crossing. 6

(b) Give structure and mechanism of formation of following compounds :—



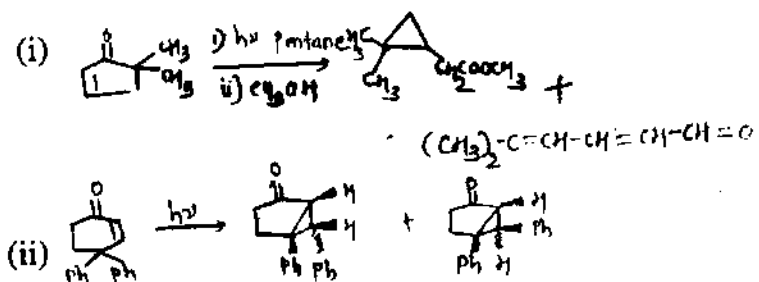
AQ -1001

8

AQ-1001

P.T.O.

(c) Provide the mechanism for each of following reactions :—

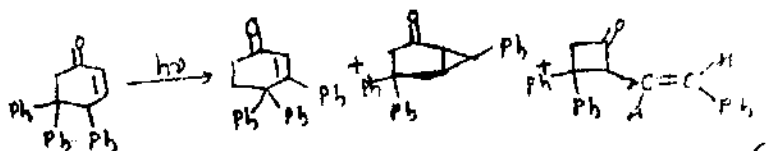


4

OR

(p) What is paterno Buchi reaction ? Discuss its mechanism along with stereochemical consequences. 6

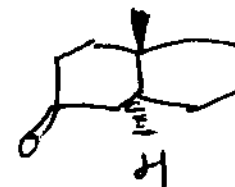
(q) Provide the mechanism for the formation of each product in the following reaction.



6

(r) Discuss the-mechanism of photoreaction of benzophenone leading to formation of Phenzopinacol. 4

(r) Write the stereostructures of the products of reduction of the ketone with $NaBH_4$ and hindered boranes.



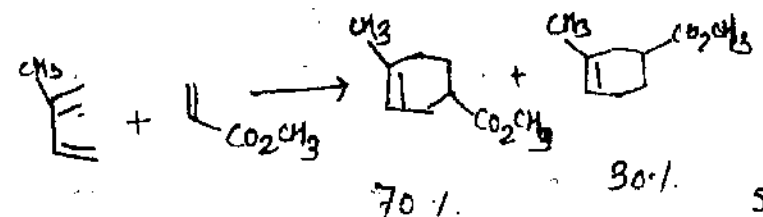
3

(s) What is Oppenauer oxidation ? 3

UNIT IV

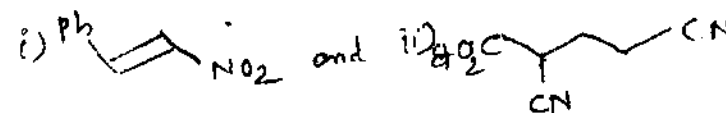
4. (a) Discuss applications of Acetylide in carbon-carbon bond formation reaction. 4

(b) Explain the observation in following reaction.



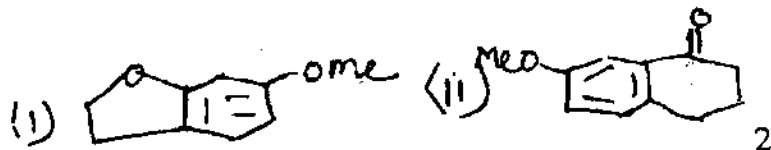
5

(c) How would you synthesize following by acid and Base catalyzed reactions :—

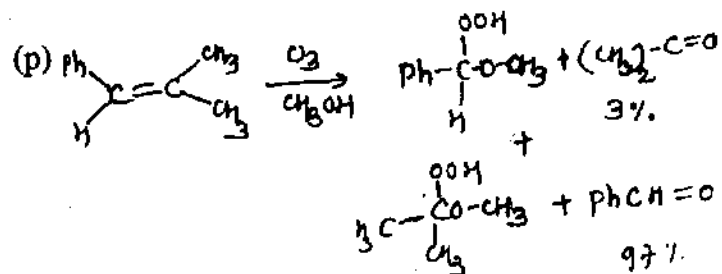


5

(d) Predict the product of Birch reduction of these aromatic compounds.

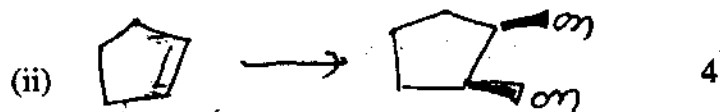
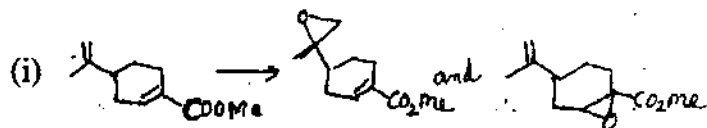


OR



How would you explain the above example of regioselective cleavage ? 6

(q) How would you carry out following transformations :—



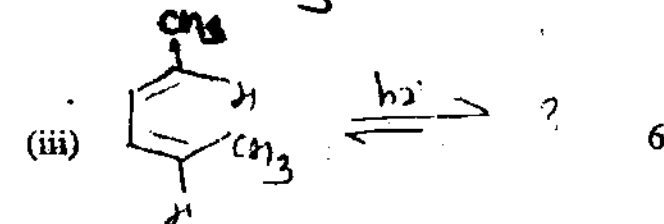
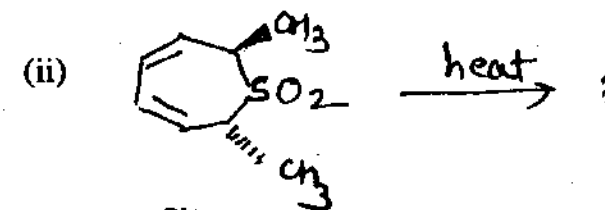
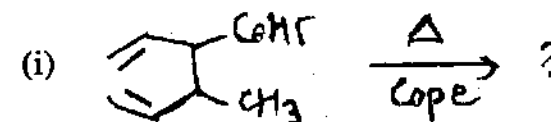
UNIT II

2. (a) Explain the terms :—

(i) Suprafacial and antarafacial shift.

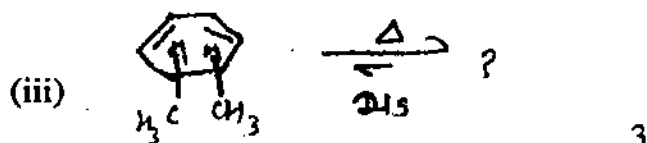
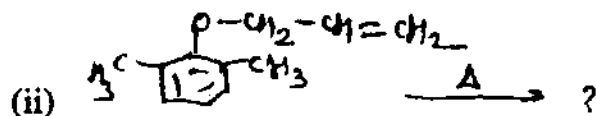
(ii) Conrotatory and disrotatory motion. 4

(b) Predict the product with stereochemistry :—



(c) Define Woodward Hoffmann selection rule for electrocyclic reactions. 3

(d) Complete the following reactions :—

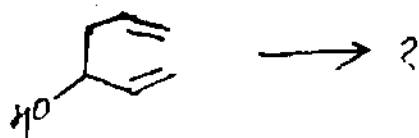
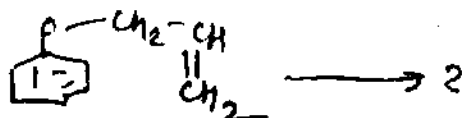


OR

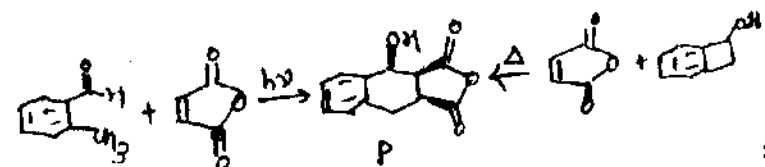
(p) Explain the terms :—

- FMO Approach and
- 1, 3 Dipolar cycloaddition.

(q) Predict the product with mechanism :—



(r) Discuss the formation of the product (P) in the following reaction :—



UNIT III

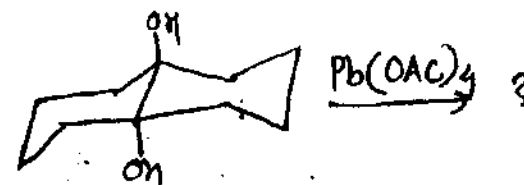
3. (a) Write in brief :—

- Ozonolysis and
- metal hydride reduction.

(b) How will you convert :—



(c) Predict the product with mechanism :—



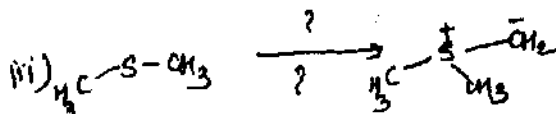
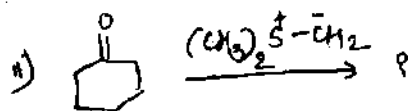
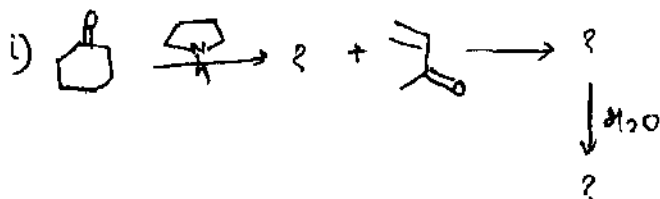
(r) What are the problems associated with Friedal Crafts alkylation Reaction ? 4

(s) Explain intramolecular Diel's Alder Reaction. 3

UNIT V

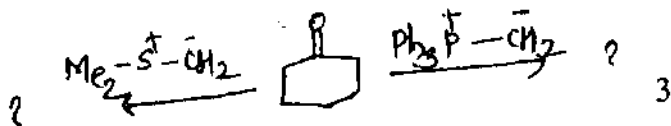
5. (a) What is acyl anion ? Give its generation with suitable examples. 5

(b) Compare the following reactions :—



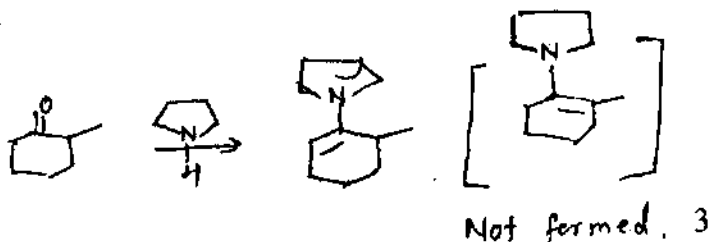
5

(c) Predict the product with mechanism :—



3

(d) Explain the following :—

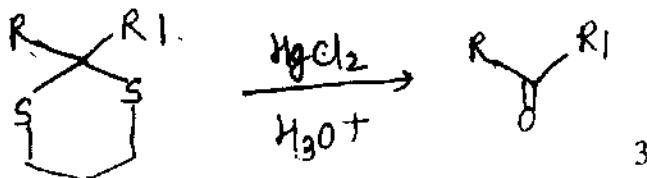


OR

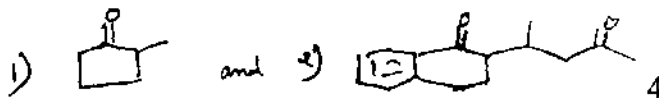
(p) Discuss the synthesis and stereochemistry and synthetic applications of sulphur ylides.

6

(q) Give mechanism for following reaction :—



(r) How will you synthesize following compounds ?



(s) What are metallated enol ethers ? Explain with suitable examples.

3

