

(A-86)

No of pages: 04

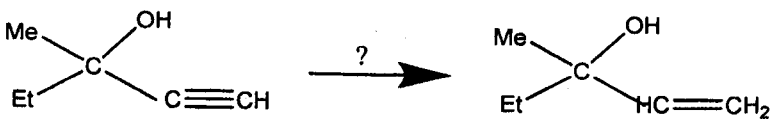
**SARDAR PATEL UNIVERSITY**  
**M.Sc. Semester-III (Organic Chemistry) Examination**  
**Wednesday, 22<sup>nd</sup> April 2015**  
**PS03CORCO2: Organic Synthesis – A Disconnection Approach**

Time: 2:30pm to 05:30pm

Total Marks: 70

**Q.1** Select the Correct answer in the following.

8

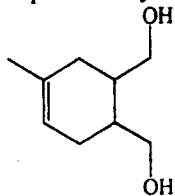
- 1 The synthetic equivalent for the illogical synthon  $^- \text{COOH}$  is  
 (a) Acetic acid (b) KCN  
 (c)  $\text{Mg}/\text{CO}_2$  (d) Oxalic acid
- 2 Which of the following reaction is used for the preparation of olefins?  
 (a) Wittig reaction (b) Wurtz reaction  
 (c) Aldol Condensation (d) Mannich reaction
- 3 The symmetrical 1,2-diol can be prepared by  
 (a) Dieckmann reaction (b) Pinacol reduction  
 (c) Darzan reaction (d) Acyloin reaction
- 4 The umpolung of carbonyl group can be carried out by converting into  
 (a) Acetal derivative (b) Alcohol  
 (c) Amine (d) 1,3-Dithiane derivative
- 5 Reconnection Concept is possible in  
 (a) 1,6-dicarbonyl Compound (b) 1,5-dicarbonyl Compound  
 (c) 1,4-dicarbonyl Compound (d) 1,3-dicarbonyl Compound
- 6 The Phthalamide derivative is useful for the protection of  
 (a) Amine (b) Alcohol  
 (c) Phenol (d) Ketone
- 7  $\alpha$ -Hydroxy ketone can be prepared by  
 (a) Acyloin reaction (b) Pinacol reduction  
 (c) Darzan reaction (d) Dieckmann reaction
- 8   
 (a)  $\text{H}_2\text{O}/\text{H}^+$  (b)  $\text{H}_2/\text{Pd-C}$   
 (c)  $\text{CrO}_3^-$  (d) None of these

Q.2 Answer the following (Any Seven).

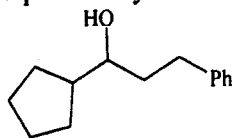
15

14

- 1 Define the terms: (i) Disconnection (ii) Synthetic Equivalent
- 2 Define the terms: (i) Reagent (ii) FGI.
- 3 Give the mechanism of Benzoin condensation with suitable example.
- 4 Explain the Illogical Electrophiles.
- 5 Write about the protection of Phenols.
- 6 Explain 'Control' and 'activation' in organic synthesis.
- 7 Explain pinacol reduction with suitable example.
- 8 Do the disconnection and plan the synthesis for the following compound.



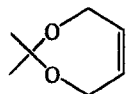
- 9 Do the disconnection and plan the synthesis for the following compound.



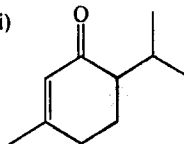
Q.3 A. Do the disconnection and plan the synthesis for the following molecules.

06

(i)



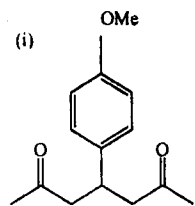
(ii)



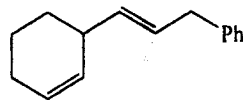
B. Do the disconnection and plan the synthesis for the following molecules.

06

(i)



(ii)

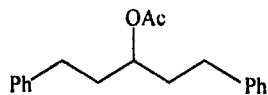


OR

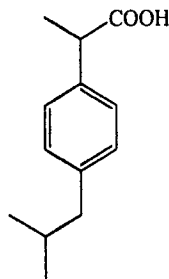
B. (i) Do the disconnection and plan the synthesis for the following compound.

06

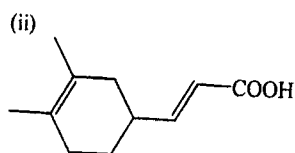
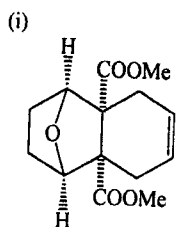
(i)



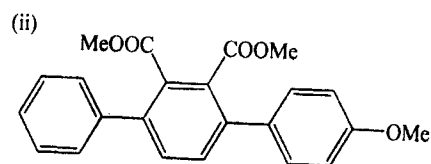
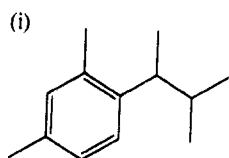
(ii)



**Q.4 A.** Using Diels- Alder reaction, do the disconnection and plan the synthesis for the following molecules. 06

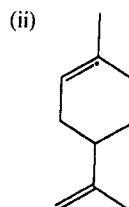
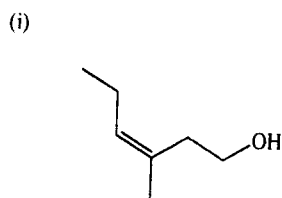


**B.** Do the disconnection and plan the synthesis for the following molecules. 06

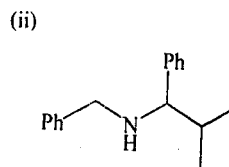
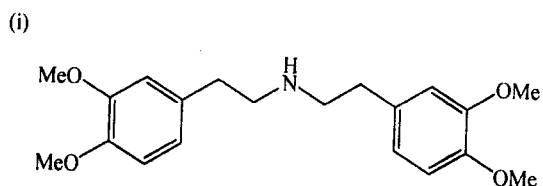


**OR**

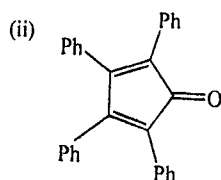
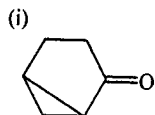
**B.** Do the disconnection and plan the synthesis for the following molecules. 06



**Q.5 A.** Do the disconnection and plan the synthesis for the following molecules. 06

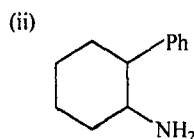
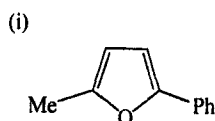


**B.** Do the disconnection and plan the synthesis for the following molecules. 06



OR

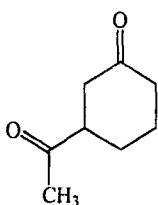
B. Do the disconnection and plan the synthesis for the following molecules. 06



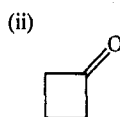
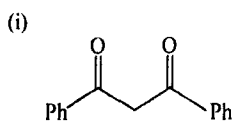
Q.6 A. Answer the followings.

(i) Discuss the protection and deprotection of ketone and aldehydes. 03

(ii) Give the synthesis of following molecule. (Starting material is acetaldehyde) 03

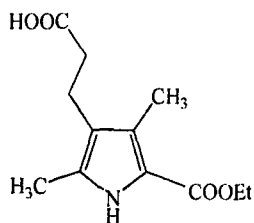


B. Using umpolung approach, plan the synthesis for the following molecules. 06



OR

B. (I) Give the synthesis of following pyrrole derivative used as intermediate in the synthesis of Mesoporphyrin IX. 03



(ii) Discuss the protection and deprotection of amines. 03

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