

Seat No.: \_\_\_\_\_

No of pages: 04

[75/A-26]

SARDAR PATEL UNIVERSITY

M.Sc. Semester-III (Organic Chemistry) Examination

Monday, 24<sup>th</sup> October- 2016

PS03CORC02: Organic Synthesis – A Disconnection Approach

Time: 02:00pm to 05:00pm

Total Marks: 70

Q.1 Select the Correct answer in the following.

08

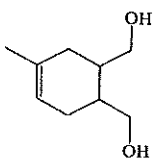
- 1 The synthetic equivalent for the illogical synthon  $\text{COOH}^-$  is \_\_\_\_\_.  
 (a) Benzoic acid (b)  $\text{H}_2/\text{Pt}$   
 (c) KCN (d) Oxalic acid
- 2 Which of the following reaction is used for the preparation of olefins?  
 (a) Mannich reaction (b) Wurtz reaction  
 (c) Wittig reaction (d) Aldol condensation
- 3 Symmetric 1,2 diol can be prepared by \_\_\_\_\_.  
 (a) Perkin reaction (b) Pinacol reduction  
 (c) Darzan condensation (d) Acyloin reaction
- 4 Whenever there is one double bond in the six member cyclic compound &  $-\text{COOEt}$  group present at 3<sup>rd</sup> Position from the double bond, then \_\_\_\_\_ reaction is applicable.  
 (a) Diel's Alder (b) Aldol  
 (c) Mannich (d) None of these
- 5 The reconnection is applicable in the disconnection for  
 (a) 1,4-dicarbonyl Compounds (b) 1,6-dicarbonyl Compounds  
 (c) 1,3-dicarbonyl Compounds (d) 1,5-dicarbonyl Compounds
- 6  $\alpha$ -Hydroxy ketone can be prepared by  
 (a) Pinacol reduction (b) Acyloin reaction  
 (c) Darzan reaction (d) Dieckmann reaction
- 7 The reagent trimethyl silyl chloride is used for  
 (a) protection of ketone (b) protection of aldehyde  
 (c) protection of cyanohydrin (d) protection of amine
- 8 The synthetic equivalent for the synthon  $\text{Ph}^-$  is  
 (a)  $\text{PhONa}$  (b)  $\text{PhCl}$   
 (c)  $\text{PPh}_3$  (d)  $\text{PhLi}$

(1)

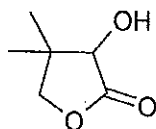
Q.2 Answer the following (Write Any Seven).

14

- 1 Define the term Disconnection with appropriate example.
- 2 Explain the term FGI with example.
- 3 Giving suitable examples explain the Illogical Electrophiles.
- 4 Give the mechanism of Benzoin Condensation with suitable example.
- 5 Write about the protection and deprotection of ketone group.
- 6 Give the suitable example of pinacol reduction.
- 7 Give the examples of sulphur ylide in the preparation of epoxide.
- 8 Do the disconnection and plan the synthesis for the following compound.

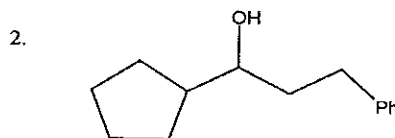
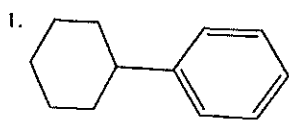


- 9 Do the disconnection and plan the synthesis for the following compound.



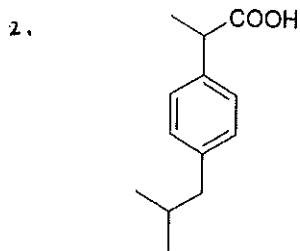
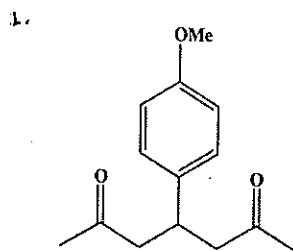
Q.3 A. Do the disconnection and plan the synthesis for the following molecules.

06



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

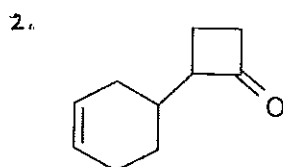
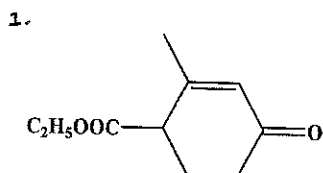
06



OR

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

06

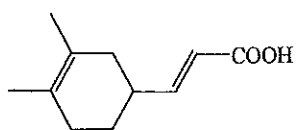


(2)

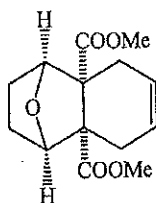
Q.4 A. Using Diels- Alder reaction, do the disconnection and plan the synthesis for the following molecules

06

1.



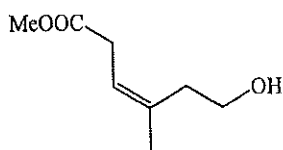
2.



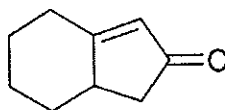
B. Do the disconnection and plan the synthesis for the following molecules.

06

1.



2.

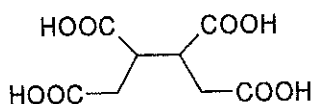


OR

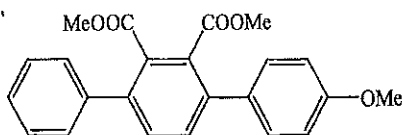
B. Do the disconnection and plan the synthesis for the following molecules.

06

1.



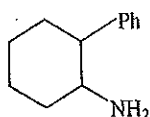
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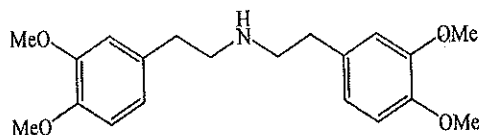
Q.5 A. Do the disconnection and plan the synthesis for the following molecules.

06

1.



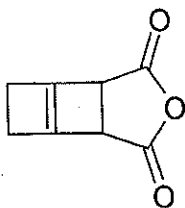
2.



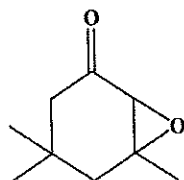
B. Do the disconnection and plan the synthesis for the following molecules.

06

1.



2.

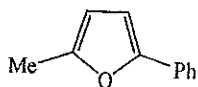


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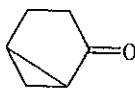
B. Do the disconnection and plan the synthesis for the following molecules.

06

1.



2.



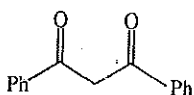
Q.6 A. Answer the followings.

(i) Discuss the protection and deprotection of phenols and amines

03

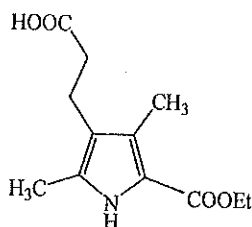
(ii) Do the disconnection & plan the synthesis for the following compound.

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B. Give the synthesis of following pyrrole derivative used as intermediate in the synthesis of Mesoporphyrin IX.

06

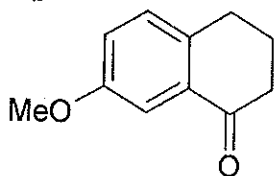


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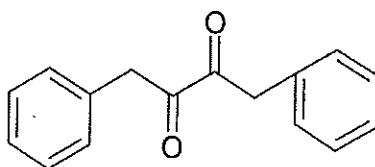
B. Do the disconnection and plan the synthesis for the following molecules.

06

1.



2.



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(4)