

## P.G. 3rd Semester - 2017

**CHEMISTRY**  
(MAJOR ELECTIVE)  
(ORGANIC)

Paper : MCHEMET303

Full Marks : 40

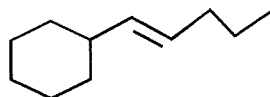
Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

Answer any **five** questions taking at least **two**  
from each group.

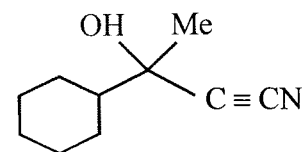
**GROUP-A**

1. a) Suggest the Retrosynthetic analysis of the following TM and then propose a synthetic route starting from the easily available wittig Reagent

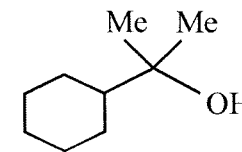


TM

- b) Propose good disconnection for the following TM(S).

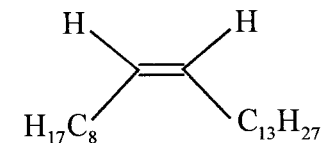


(TM-I)



(TM-II)

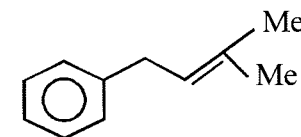
- c) Propose the retrosynthetic analysis of the following TM.



(TM)

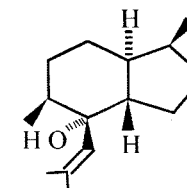
3+3+2=8

2. a) Propose the retrosynthetic analysis of the TM without use of the wittig reagent in the formation of C=C bond



(TM)

- b) Define synthon and synthetic equivalent.  
c) Suggest the retrosynthetic analysis of the following TM based on Ring Closing Metathesis. Give the forward synthesis.



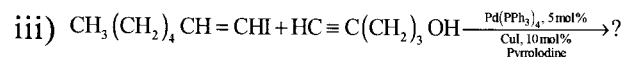
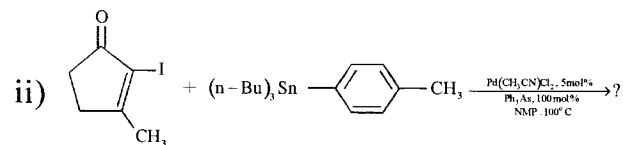
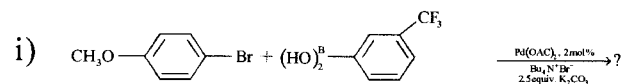
3+2+3=8

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323/Chem.

[ 2 ]

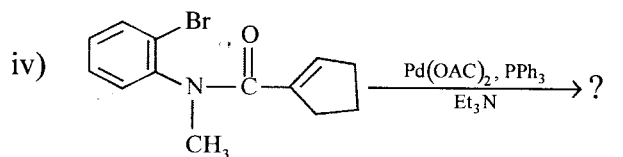
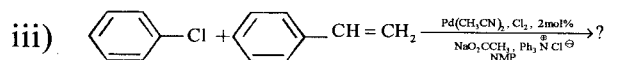
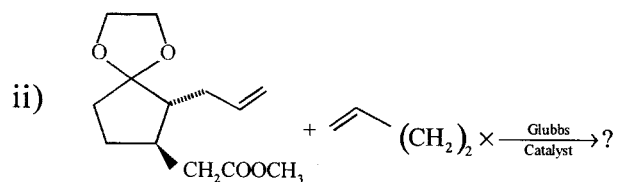
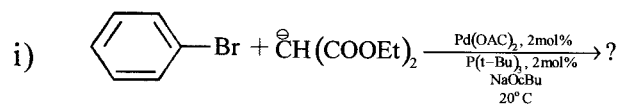
3. a) Give the appropriate product in the following reactions:



- b) Write four basic differences between the Suzuki and Stille coupling reaction.

$$1 \frac{1}{2} + 1 \frac{1}{2} + 2 + 3 = 8$$

4. a) Give appropriate product in the following reactions:  $4 \times 2 = 8$



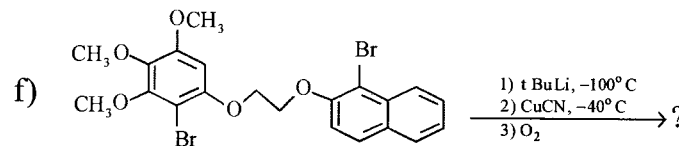
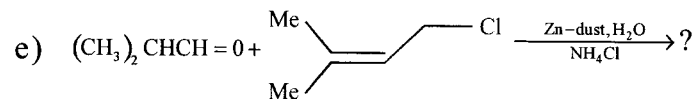
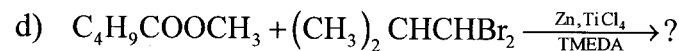
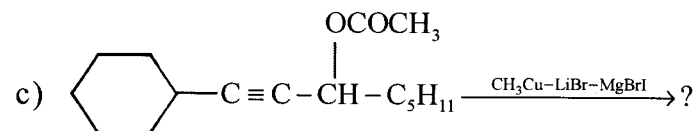
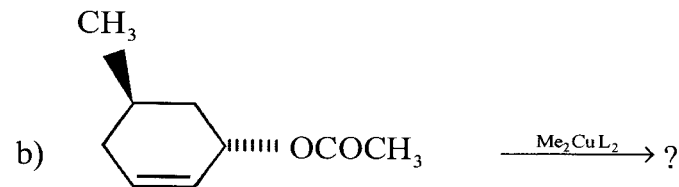
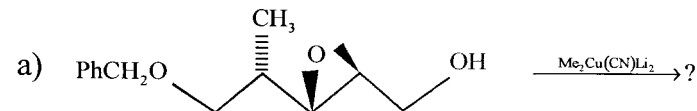
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## GROUP-B

5. Give the appropriate product in the following reactions:



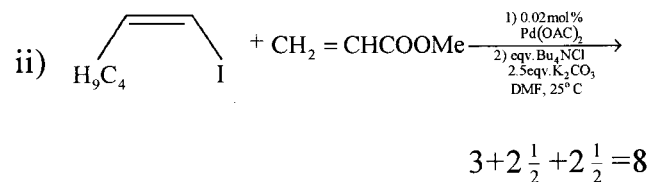
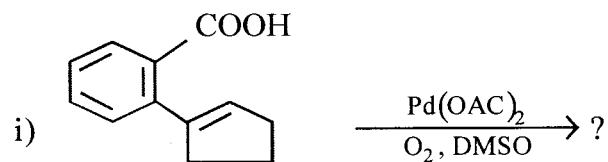
$$1 + 1 + 1 \frac{1}{2} + 1 \frac{1}{2} + 1 \frac{1}{2} + 1 \frac{1}{2} = 8$$

6. a) Same products are obtained from 2-acetoxy-4-phenyl-3-butene and 1-acetoxy-1-phenyl-2-butene. Account for the abbreviation with mechanism.

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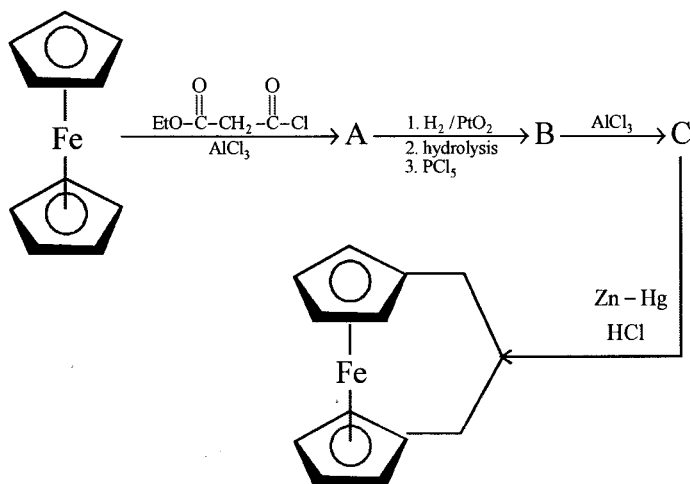
[ 4 ]

b) Give product with mechanism:

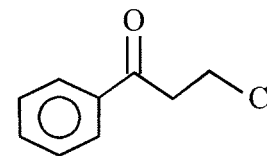


7. a) Discuss the fluxional behavior and ring whizzing of  $(\eta^5-C_p)(\eta^5-C_p)Fe(CO)_2$ .

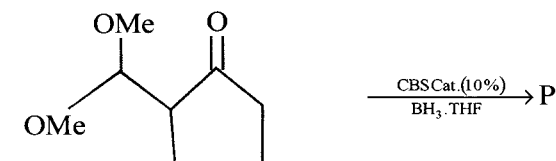
b) Write the structure of intermediate compound A and B in the following reaction scheme:



c) Synthesis (s)-Fluoxetine starting from



d) Identify (P) of the following reaction



$2 + 3 + 2 + 1 = 8$

8. a) Define chiral pool and chiral auxiliary. Give example in each case with exact structure.

b) Synthesis imipenem starting from L-aspartic acid.

c) Synthesis (-)-frontalin.  $3 + 3 + 2 = 8$