

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :5

P1456

[5125] - 41

M.Sc.

**DRUG CHEMISTRY**

**CH-461: Synthetic Methods in Organic Chemistry**

**(2008 Pattern) (Semester - IV)**

*Time : 3 Hours]*

*[Max. Marks :80*

*Instructions to the candidates:*

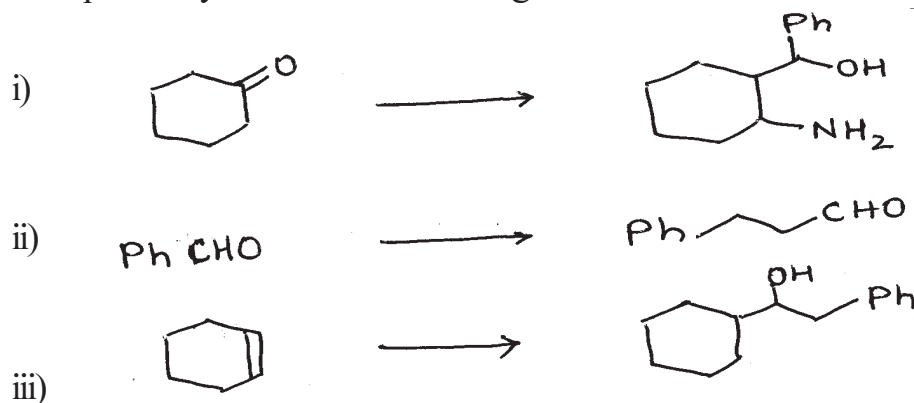
- 1) *All questions are compulsory.*
- 2) *Answers to the two sections should be written in separate answer books.*
- 3) *Figures to the right indicate full marks.*

**SECTION-I**

**Q1) a)** Explain any three of the following: **[9]**

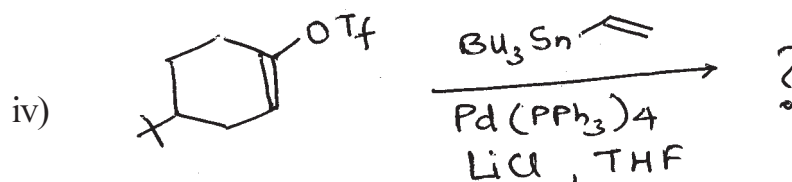
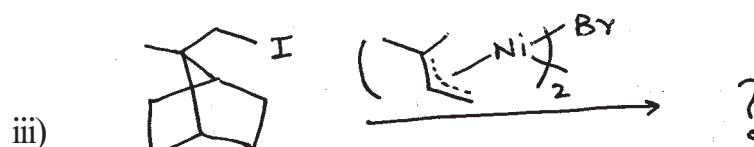
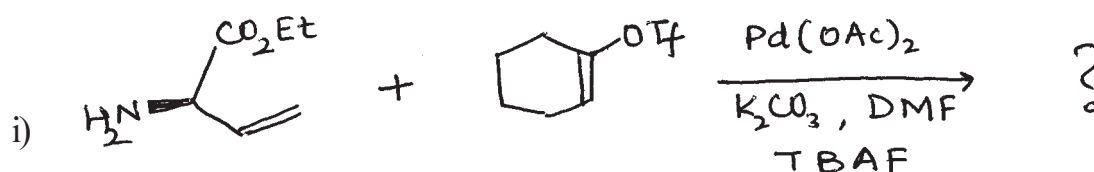
- i) Enamines can be used only with reactive alkylating agents.
- ii) Ter- butoxycarbonyl protection is preferred over acetyl protection in peptide synthesis.
- iii) Ethyl ethylthiomethyl sulfoxide is used for the synthesis of 1,4-dicarbonyl compounds.
- iv) Non-terminal alkenes can be converted to terminal alkenes using hydroboration reaction.

**b)** Complete any two of the following conversions. **[6]**



**P.T.O.**

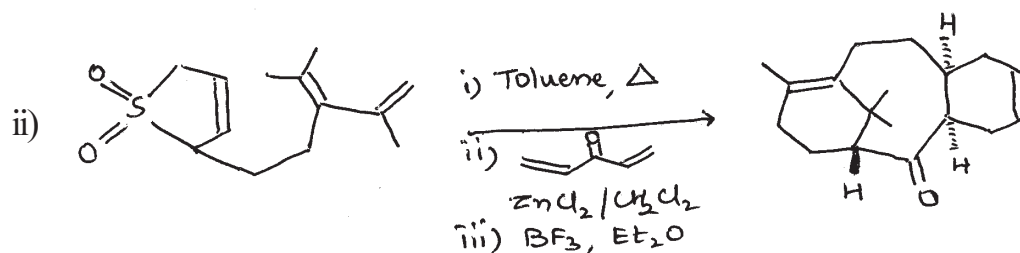
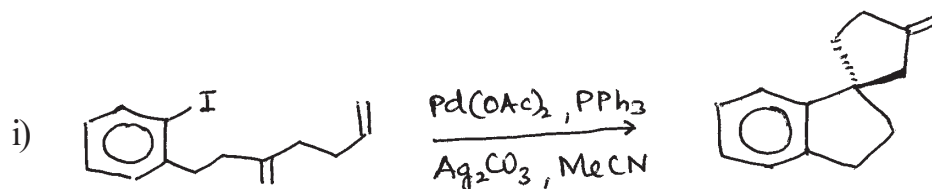
**Q2) a)** Predict the product explaining the mechanism of transition metal complex (any three): [9]



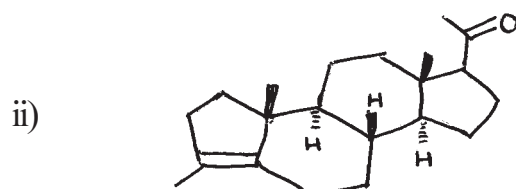
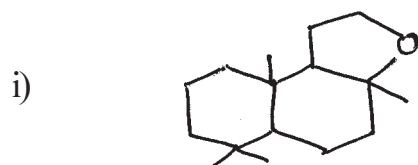
**b)** Explain any two of the following: [6]

- Role of chiral organoborane in synthesis of optically active alcohols.
- Use of Pd(0) in Suzuki coupling.
- Advantage of homogenous catalysis over heterogenous catalysis.

**Q3) a)** What is Domino reaction? Explain the steps involved in any one of the following Domino reaction. [5]

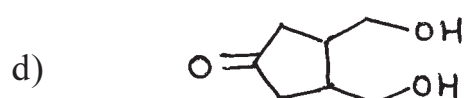
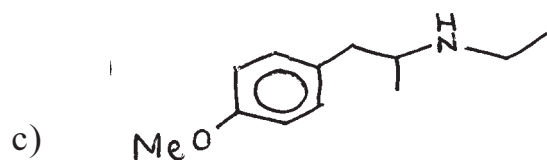
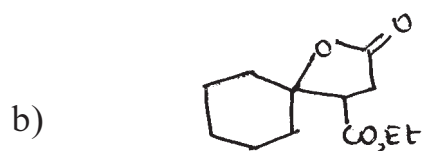
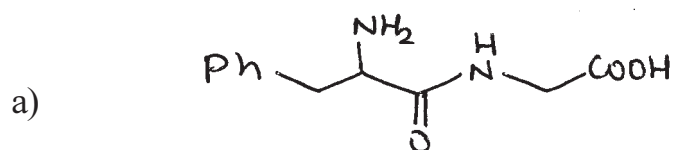


- b) Explain how biomimetic approach is used to obtain any one of the following compounds. [5]

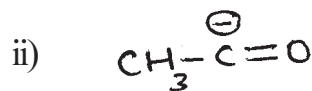


### SECTION-II

- Q4)** Using retrosynthetic analysis suggest a suitable method to synthesize any three of the following: [12]



**Q5) a)** Give one reaction with reagent for each synthon given below: [6]



b) Using the method of umpolung carry out any two of the following conversions: [6]

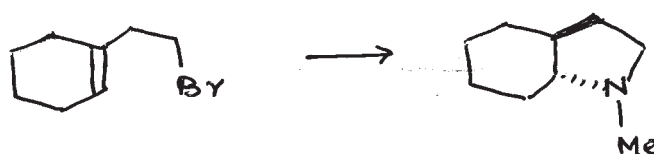


**Q6) a)** Give brief account of any one of the following: [4]

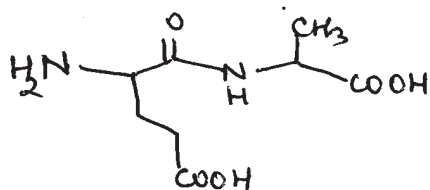
- Principles of Green Chemistry.
- Advantage of convergent synthesis over linear synthesis.

b) Answer any four of the following: [12]

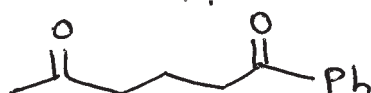
- Carry out the following conversion using organoborane chemistry.



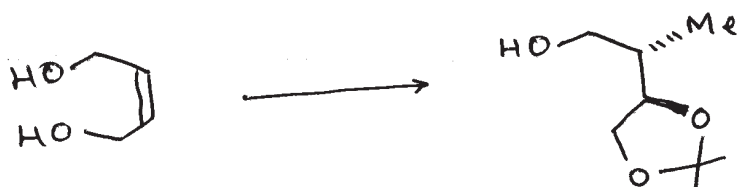
- ii) Discuss the steps involved in the synthesis of the following dipeptide.



- iii) Synthesise the following compound using examine approach.



- iv) Discuss the steps involved in the following conversion.



- v) Carry out the following conversion.



EEE