

Total No. of Questions :6]

SEAT No. :

P1968

[Total No. of Pages :4

[5145] - 104

F.Y.B. Pharmacy

114: PHARMACEUTICAL ORGANIC CHEMISTRY - I

(2013 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Answer to the two sections should be written in separate answer sheet.
- 3) Neat diagrams must be drawn in separate answer sheet.
- 4) Figures to the right indicate full marks.

**SECTION - I**

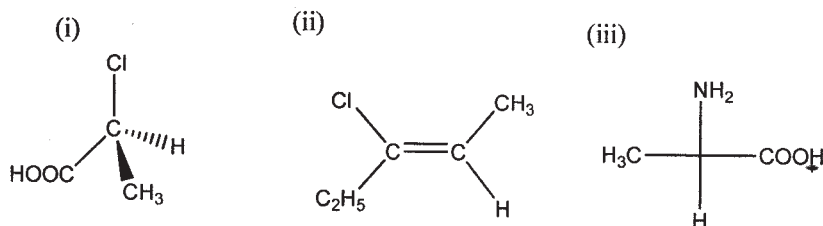
**Q1)** What are elimination reactions? Explain mechanism, stereochemistry of  $E_1$  and  $E_2$  reactions. Compare  $E_1$  and  $E_2$  mechanism [10]

OR

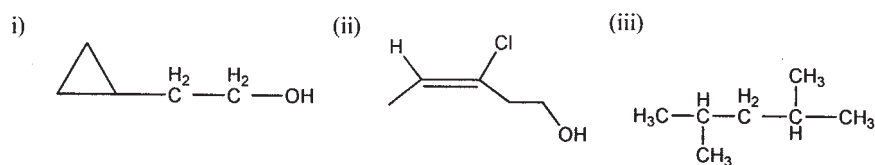
Explain any five factors affecting electron availability? [10]

**Q2)** Answer the following (Any Five): [15]

a) Assign R /S or E/Z configuration to following:



b) Write IUPAC names for following structures



P.T.O.

- c) Write any three reactions of alkanes.
- d) Define following terms with suitable examples:
  - i) Carbocation
  - ii) Carbanion
  - iii) Electrophile
- e) Tertiary carbocations are more stable than secondary carbocations explain.
- f) Explain Tautomerism with example.
- g) Draw resonating structures of any two from following:
  - i) Aniline
  - ii) Nitrobenzene
  - iii) Benzoic acid

**Q3)** Answer the following (Any Two):

**[10]**

- a) Explain the addition-elimination and elimination-addition mechanisms of nucleophilic aromatic substitution.
- b) Define hybridization. Mention different types of hybridization? Explain  $sp^2$  hybridization.
- c) Classify organic compounds on the basis of elemental composition (at least five classes with suitable examples).
- d) Explain with example
  - i) Homolytic bond fission
  - ii) Heterolytic bond fission

## SECTION -II

**Q4)** a) Define isomerism? Explain any three types of isomerism with examples. [10]

b) Explain types of chemical reactions with suitable examples.

OR

Explain the directing effects of following functional groups towards electrophilic substitutions on benzene:

a)  $-\text{OH}$     b)  $-\text{CH}_3$     c)  $-\text{COOH}$     d)  $-\text{NO}_2$

**Q5)** Answer the following (Any Five): [15]

a) Arrange following in order of increasing acidity with explanation

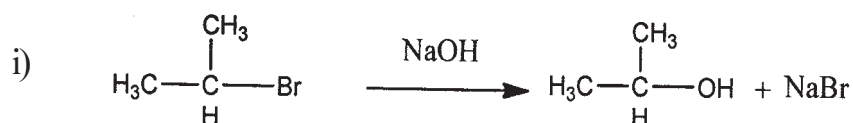
- i) Acetic acid
- ii) Trichloroacetic acid
- iii) Chloroacetic acid

b) Explain Saytzeff rule for 1, 2 elimination reaction?

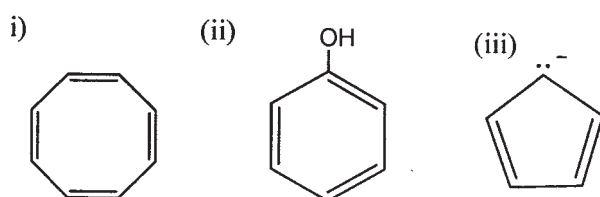
c) Write a note on ozonolysis.

d) Explain mechanism of  $\text{E}_1$  CB reaction.

e) Identify the type of chemical reaction (Addition, Substitution etc) in following:



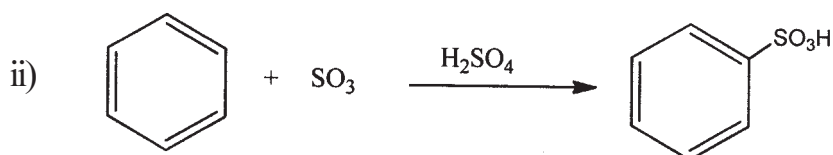
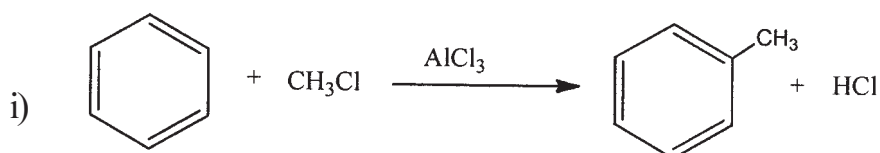
- f) Draw structures from IUPAC names of following:
- 4-nitro aniline
  - 2-chloropropanoic acid
  - 2-Pentanone
- g) Apply Hukel's rule of aromaticity and differentiate following compounds into aromatic and non-aromatic or anti-aromatic compound.



**Q6)** Answer the following (Any Two):

**[10]**

- Explain inter and Intra molecular forces of attraction.
- What are alkynes? Write their any two methods of preparation and two reactions.
- State and explain Markovnikov and Anti Markonikov Rule.
- Write down the stepwise mechanism for following reactions



*EEE*