

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

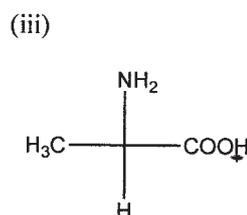
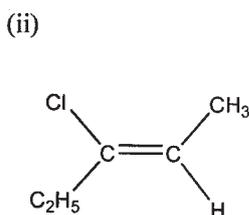
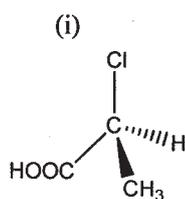
Q1) What are elimination reactions? Explain mechanism, stereochemistry of E_1 and E_2 reactions. Compare E_1 and E_2 mechanism [10]

OR

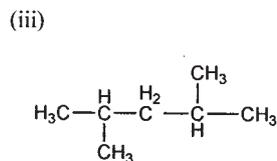
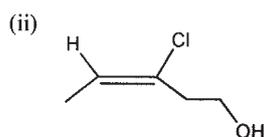
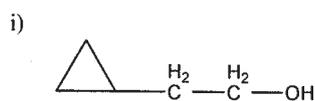
Explain any five factors affecting electron availability? [10]

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

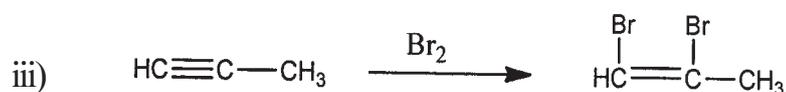
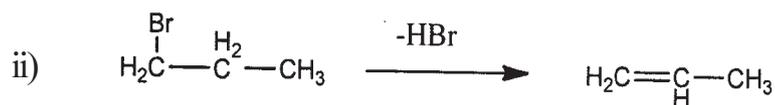
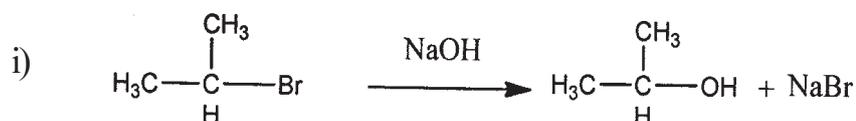
- i) Acetic acid
- ii) Trichloroacetic acid
- iii) Chloroacetic acid

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

c) Write a note on ozonolysis.

d) Explain mechanism of E_1 CB reaction.

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



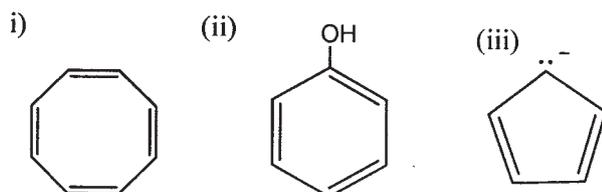
f) Draw structures from IUPAC names of following:

i) 4-nitro aniline

ii) 2-chloropropanoic acid

iii) 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):

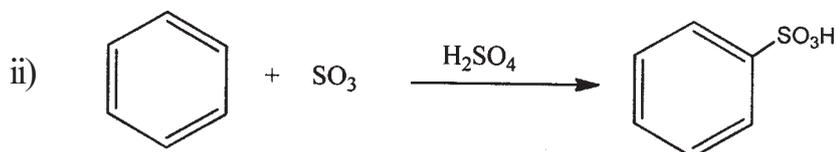
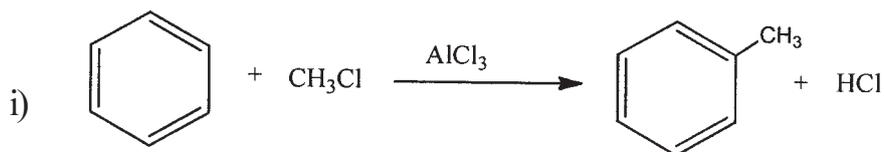
[10]

a) Explain inter and Intra molecular forces of attraction.

b) What are alkynes? Write their any two methods of preparation and two reactions.

c) State and explain Markovnikov and Anti Markonikov Rule.

d) Write down the stepwise mechanism for following reactions



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