Seat Number

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Summer 19

BP-202-T
Pharmaceutical Organic Chemistry-I
(712202)

P. Pages : 3

Time : Three Hours **Max. Marks : 75**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Figures to the right indicate full marks.

1. a) Select the appropriate option for the following. **10**

1) What is the hybridization of the orbital occupied by the lone pair of electrons in ammonia.

i) SP ii) SP^2

iii) SP^3 iv) SP^4

2) The systematic IUPAC name for chloroform is

i) Carbon tetrachloride ii) Methyl chloride

iii) Trichloromethane iv) Chloromethane

3) The dehydrogenation of 2 – bromobutane with alcoholic KOH give mainly.

i) 2 – butene ii) 1 – butene

iii) 1 – butyne iv) 2 – butyne

4) Acetone reacts with HCN to form a cyanohydrin. It is an example of

i) Nucleophilic substitution

ii) Nucleophilic addition

iii) Electrophilic substitution

iv) Electrophilic addition

5) Which of the following is the strongest acid?

i) Formic acid ii) Acetic acid

iii) Trichloroacetic acid iv) Trifluoroacetic acid

6) Alkyl halide undergoes

i) Nucleophilic substitution reaction

ii) Nucleophilic addition reaction

iii) Electrophilic substitution reaction

iv) Electrophilic addition reaction

7) Common name of ethanoic acid is
   i) Formic acid ii) Acetic acid
   iii) Valeric acid iv) Propionic acid

8) Which statement about carbonyl group of ketone and aldehydes is true?
   a) It can attract nucleophiles
   b) It can attract electrophile
   c) It tends to undergo addition reactions
   d) It tends to undergo substitution reactions
   i) a and c ii) b and d
   iii) a, b and c iv) a, c, and d

9) 1, 3 butadiene reacts with bromine to mainly give
   i) 3, 4 – dibromo – 1 – butene
   ii) 4 – bromo – 1 – butene
   iii) 1, 4 – dibromo – 2 – butene
   iv) 1 – bromo – 2 – butene

10) Which of the following compound is most stable?
   i) Ethylene ii) Propylene
   iii) 2, 3 dimethyl – 1 – butene iv) 2 – butene

b) Answer the following. 10

i) Why the more substituted alkene is more stable?

ii) Gives uses of methyl salicylate & acetyl salicylic acid.

iii) Define conjugated diene with examples.

iv) Arrange the following acid in increasing order of their acidic strength with justification.
   i) HCOOH ii) CH_3COOH
   iii) $ClCH_2COOH$

v) Give IUPAC name for

i) $HO-CH_2-CH_2-COOH$

ii) $H_2N-\underset{\underset{O}{\|}}{C}-CH_2-CH_2-CH=CH_2$

2. Attempt **any two** of the following. 20

i) Elaborate in detail E1 and E2 reaction mechanism.

ii) Define hybridization. Write note on SP^3 and SP^2 hybridization along with examples.

iii) Write short note on :

a) Aldol condensation

b) Perkin condensation

3. Attempt **any seven** of the following. **35**

i) Define structural isomerism. Elaborate various types of structural isomerism along with examples.

ii) Explain the Markovnikov's rule including the mechanism and with an example.

iii) Write a note on Cannizzaro reaction.

iv) Discuss the effect of substituents on acidity of monocarboxylic acids.

v) Write any two method of preparation of alcohol.

vi) Give structures of the following

a) Lactic acid

b) Ethanolamine

c) Acetylsalicylic acid

d) Benzyl alcohol

e) Tetrachloromethane

vii) Discuss classification of organic compounds.

viii) Explain Diel's Alder reaction.

ix) Draw the structures from the IUPAC / Common name given below.

a) Hexamethylene diamine

b) N – ethyl – N – methyl propanamine

c) 1 – methoxypropane

d) 2 – methyl – 1 – propanol

e) 2 – methyl propanoic acid.

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