SUM - 2023
2015/23

Seat Number | | | | | | |

CJ-28

BP-202-T

Pharmaceutical Organic Chemistry-I

(712202)

Total Pages : 6]

Time : 3 Hours **Max Marks : 75**

Note : (1) Do not write anything on question paper except Seat No.

(2) Graph or diagram should be drawn with the black ink pen 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) Choose the *correct* answer from the following : 10×1=10

(*i*) In alkenes the carbon atoms are connected to each other by a :

(*a*) Single bond

(*b*) Double bond

(*c*) Triple bond

(*d*) Not connected

(*ii*) Which among these is not a structural isomer of the compound C_4H_8 ?

(*a*) But-1-ene (*b*) But-2-ene

(*c*) But-3-ene (*d*) 2-methyl propene

P.T.O.

(*iii*) Ethylene on reaction with bromine form which among the following product

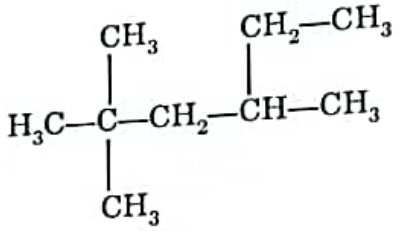
(*a*) $BrCH_2CH_2Br$

(*b*) $BrCH_2{=}CH_2Br$

(*c*) $Br_2CH—CHBr_2$

(*d*) $Br_2CH{=}CHBr_2$

(*iv*) The IUPAC name of the following compound is :



(*a*) 2, 2-dimethyl-4-ethyl pentane

(*b*) 2-ethyl-4, 4-dimethyl pentane

(*c*) 2, 2, 4-trimethyl hexane

(*d*) 2, 4, 4-trimethyl hexane

(*v*) Markovnikov addition of HCl to propene involves :

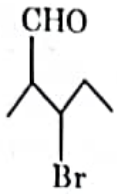
(*a*) Initial attack of Cl ion

(*b*) Isomerization of 1-Chloropropane

(*c*) Formation of n-propyl cation

(*d*) Formation of isopropyl cation

(vi) The IUPAC name of :



(a) 2-methyl-3-bromo hexanal

(b) 2-methyl-3-bromo butanal

(c) 3-bromo-2-methyl butanal

(d) 3-bromo-2-methyl pentanal

(vii) A strong base can abstract an α-hydrogen from :

(a) Amine (b) Alkane

(c) Alkene (d) Ketone

(viii) The correct sequence of steps involved in mechanism of Cannizzaro's reaction is :

(a) Nucleophilic attack, Transfer of $H^{\ominus}$ and transfer of $H^{\oplus}$

(b) Electrophilic attack by $OH^{\ominus}$, transfer of $H^{\oplus}$ and transfer of $H^{\ominus}$

(c) Transfer of $H^{\ominus}$, transfer of $H^{\oplus}$ and nucleophilic attack

(d) Transfer of $H^{\oplus}$, nucleophilic attack and transfer of $H^{\ominus}$

(ix) The correct order of decreasing acid strength of trichloroacetic acid (A) trifluoroacetic acid (B), acetic acid (C), and formic acid (D) :

(a) A > B > C > D

(b) A > C > B > D

(c) B > A > D > C

(d) B > D > C > A

(x) A mixture of Benzaldehyde and formaldehyde on heating with aq. NaOH solution gives :

(a) Benzyl alcohol and sod formate

(b) Sod. benzoate and methyl alcohol

(c) Sod. benzoate and Sod. formate

(d) Benzyl alcohol and methyl alcohol

(B) Write the answer of the following : 5×2=10

(i) Draw the structure of Formaldehyde and Cinnamaldehyde.

(ii) Enlist different types of dienes with example.

(iii) Draw the structure of Acetic acid and Lactic acid.

(iv) Write ozonolysis reaction of alkene.

(v) Give any *two* methods of preparation of alkene.

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

(i) Describe Cannizzaro reaction and crossed Cannizzaro's reaction.

(ii) Give any *one* method of prepration for alcohol. Distinguish alcohol by Lucas test and oxidation test.

(iii) Discuss S_N2 reaction with energy profile diagram. Explain different factors influensing the reaction rate.

3. Attempt any *seven* of the following : $7 \times 5 = 35$

(*i*) Define S_N1 reaction. Desrcibe stereochemistry of S_N1 reaction.

(*ii*) Draw structure and uses of :

(*a*) Ethyl chloride

(*b*) Chloroform

(*c*) Iodoform

(*d*) Tetrachloroethylene

(*e*) Tetrachloromethane

(*iii*) Complete the following reactions with mechanism :

(*a*) $C_6H_5CHO + C_6H_5CHO \xrightarrow[C_2H_5OH]{kCN/HOH} ?$

(*b*) $2\ CH_3—CHO \xrightarrow[\Delta]{NaOH} ?$

(*iv*) Give any *one* chemical reaction for alcohol. Draw structure of :

(*a*) Chlorobutanol

(*b*) Benzyl alcohol

(*c*) Glycerol.

(*v*) Define Elimination reaction. Write a note on E_1 elimination reaction.

(*vi*) Explain Markovnikov rule with example.

P.T.O.

(*vii*) Write a note on electrophilic addition reaction of alkene.

(*viii*) Define Dienes. Write any *two* methods of preparation and chemical reaction of dienes.

(*ix*) Draw the structure of the following compounds :

(*a*) 4-hydroxy-7-keto-2, 5-8-decatrienoic acid

(*b*) 2, 3, 4, 5, 6-Pentahydroxy hexanal.