10.35 am - 1.35 pm

Seat Number | | | | | | |

CJ-39

BP-202T

Pharmaceutical Organic Chemistry-I

(712202)

Total Pages : 5] **Max. Marks : 75**

Time : 3 Hours

Note : (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) *All* questions are compulsory.

(5) Draw neat chemical structures wherever necessary.

1. (A) Select the appropriate option for the following : $10 \times 1 = 10$

(1) In the preparation of Grignard reagent from haloalkane, the metal used is :

(A) Mg (B) Zn

(C) Li (D) K

(2) Which of the following does *not* react with PCl_5 ?

(A) CH_3OH (B) CH_3COOH

(C) CH_3CHO (D) C_2H_6

(3) The number of structural isomers of alcohol with molecular formula C_4H_9OH is .....

(A) 5 (B) 3

(C) 4 (D) 6

P.T.O.

(4) Why tertiary alkyl halide undergoes SN1 reaction very fast ?

(A) Due to high stability of tertiary carbocation

(B) Due to less stability of tertiary carbocation

(C) Due to less stability of tertiary carboanion

(D) None of the above

(5) Which of the following compounds is named correctly according to the IUPAC system of nomenclature ?

(A) 1,1-chloro-2-bromoethane

(B) 1,1-dichloro-2-bromoethane

(C) 2-bromo-1-1 dichloroethane

(D) 2-bromo-1,1-dichloroethane

(6) Which of the following is *wrong* statement ?

(A) SN2 reactions are bimolecular

(B) SN2 reactions are usually second order

(C) SN2 reactions occur in one step

(D) SN2 reactions occur in two steps

(7) Ketones are less reactive than aldehydes. It is due to :

(A) Alkyl groups are electron donating

(B) Steric hindrance

(C) Both (A) and (B)

(D) None of the above

(8) What is the hybridization of Carbon atom in CF_4 ?

(A) sp^2 (B) sp

(C) sp^3d (D) sp^3

(9) Schiff's test is Positive for :

(A) Ketones (B) Aldehyde

(C) Amines (D) Carboxylic acid

(10) Aldol condensation needs an aldehyde containing ..... carbon atom.

(A) Alpha (B) Beta

(C) Gamma (D) Delta

(B) Answer the following : 10

(a) Give the structure and use of Trichloroethylene and Dichloromethane.

(b) Write any *two* qualitative tests for amines.

(c) How do you differentiate aldehydes and ketones by chemical test ?

(d) Explain why methyl amine is stronger base than ammonia ?

(e) Write about Saytzeff rule.

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

(*a*) Explain the mechanism of Benzoin condensation and crossed Cannizzaro Reaction.

(*b*) What are elimination reactions ? Discuss the kinetics, mechanism, orientation and reactivity of E1 and E2 reaction.

(*c*) Give general methods of preparations and chemical reactions for Carbonyl compounds.

3. Solve any seven of the following : 35

(*a*) What is hybridization ? Write a note on sp^3 hybridization in alkanes.

(*b*) Explain the effect of substituents on acidity of carboxylic acids.

(*c*) Give the IUPAC name of :

(*a*) Acetone

(*b*) Acetic acid

(*c*) Neopentane

(*d*) Formaldehyde

(*e*) Isobutane.

(*d*) Give any *five* chemical reactions of alkyl halides.

(*e*) Define and classify carbocations. Write a note on stability of them.

(f) How do you distinguish primary, secondary and tertiary alcohols by chemical test ?

(g) Explain the reaction and mechanism of Perkin's condensation reaction.

(h) Classify and explain structural isomerism in organic molecules.

(i) Discuss stability of conjugated dienes.