[This question paper contains 4 printed pages.]

1909 *Your Roll No.* .....

B.Sc. Prog./II E

CH-202 : ORGANIC CHEMISTRY

(Admissions of 2008 and onwards)

Time : 2 Hours *Maximum Marks : 50*

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any four questions.
Q.No.1 is compulsary

1. (a) An alkene C_7H_{14}, after ozonolysis yielded two products [A] and [B]. [A] Gives positive idoform reaction whereas [B] gives negative idoform reaction. Identify [A] and [B] and also name the alkene.

(b) How will you differentiate between [A] and [B] obtained above? Explain with reaction.

(c) Mention of electrophile in each of the following reaction: Nitration, sulphonation, chlorination,

P.T.O.

Friedel-Craft's alkylation. (5,5,4)

2. (a) Explain the reaction involved in the synthesis of ethylacetoacetate starting from ethyl acetate. Give the structures of tautomers of ethylacetoacetate.

(b) Starting from ethylacetoacetate synthesise the following (any **three**)

(i) Succinic acid

(ii) 3-methyl-2-pentanone

(iii) Crotomic acid

(iv) Methyl is isoxazolone (6,6)

3. Give reasons why

(a) Nitrobenzene is m-directing whereas toluene is o-, p-directing.

(b) Terminal alkynes react with NaH_2 where alkenes don't.

(c) Conjugated dienes are more stable than isolated dienes.

(d) Chlorobenzene is less reactive than mehyl chloride towards nucleophilic substitution. (4×3)

4. Name and explain the mechanism of following reactions

(a) $C_6H_5CHO + {}^{-}OH \longrightarrow$

(b) $C_6H_5CHO + KCN + C_6H_5OH \longrightarrow$

(c) $C_6H_5OH + CHCl_3 + KOH \longrightarrow$ (3×4)

5. Write short notes on

(a) Salient features of SN1 and SN2 type of reactions

(b) Ozonolysis

(c) Kharasch effect (3×4)

6. Complete the following reactions:

(a) $CH_3CH=CH_2 + Hg(OCOCH_3) + H_2O \longrightarrow$
$[X] + NaBH_4 \longrightarrow$

(b) (i) $C_6H_5CH_2CH_3 + Cl_2 + FeCl_3 \longrightarrow$

(ii) $C_6H_5CH_2CH_3 + Cl_2 + hv \longrightarrow$

(c) $RCOCl + H_2 + pd\text{-}BaSO_4 \longrightarrow$

P.T.O.

(d) $CH_3C{\equiv}CH + O_3/CCl_4 \longrightarrow [X] + H_2O \longrightarrow$

(e) $CH_3CHO + NH_2CONHNH_2 \longrightarrow$

(f) $C_6H_5N_2^+Cl^- + C_6H_5OH \longrightarrow$ (6×2)