
Paper-V (VA & VB)

(Organic Chemistry), F.M.—35 (Time: 1 Hr 20 minutes)

Answer Q No. 1 & any two from Gr.A & Gr. B

Paper-(VA)

1. MCQ question

7 x 1 = 7

(a) What will be the stereochemistry of the product for 1-phenyl ethanol / SOCl₂ reaction.

- (i) Inversion (ii) Racemization (iii) Retention (iv) 75% ee w.r.t (+)

(b) Chugaev reaction is an example

- (i) E1 (ii) E2 (iii) E1cB (iv) Pyrolytic Syn Elimination

(c) Michael acceptor for the dimedone synthesis

- (i) Me₂C=CH.COMe (ii) CH₂(CO₂Et)₂ (iii) MeCH=CH.CHO (iv) Me₂C=CH.CHO

(d) Which reagent is used for sucrose structure determination?

- (i) LTA (ii) HIO₄ (iii) SeO₂ (iv) OsO₄

(e) Butterfly T.S. is involved which of the following reaction

- (i) Baeyer Villiger Oxidation (ii) Wittig reaction (iii) Stobbe reaction (iv) Prieschaieve's reaction

(f) Brucine is not used for the resolution of

- (i) (±) Acid (ii) (±) Base (iii) (±) Amino acid (iv) (±) Alcohol

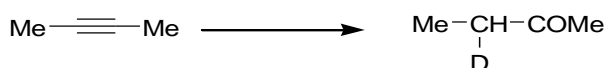
(g) RMgBr on rxn with D₂O produces

- (i) RH (ii) ROH (iii) ROD (iv) RD

Paper-(VB)

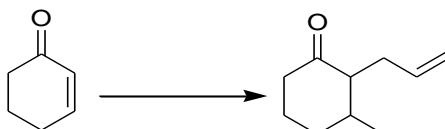
Gr. A

2. (a) What happens when Et₂NH is heated with HCHO and HCO₂H. (b) In presence of pyridine the threo isomer 1,2-dibromo-1,2-diphenyl ethane undergo dehydrobromination to give (Z)-1-bromo 1,2-diphenyl ethene, whereas erythro isomer undergoes dehydrobromination to give (E)-1,2-diphenyl ethene. Account the observation. (c) Carry out the following conversion. **(2+3+2)**



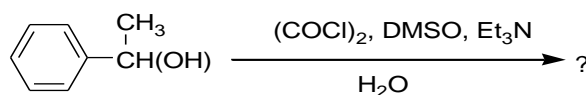
3. (a) Using Reformatsky reaction to synthesis $\text{PhC}(\text{Me})=\text{C}(\text{Me})\text{CO}_2\text{H}$. Why Mg can't replace Zinc in this synthesis. (b) Alkaline hydrolysis of benzonitrile gives salt of benzoic acid but in presence of H_2O_2 an amide is formed. Explain. (c) Convert aniline to 1,2,3-tribromo benzene. (3+2+2)

4. (a) Calculate the ee and sp. rotation of a mixture containing 6 g of (+) 2-butanol and 4 g of (-) 2-butanol. The sp. Rotation of enantiomerically pure (+) 2-butanol is $+13.5^\circ$. (b) What happens thiourea with EtI and the resultant product is hydrolysed. (c) Define and give expression of specific rotation. (d) Using appropriate organometallic reagent do the following conversion. (2+2+1.5+1.5)

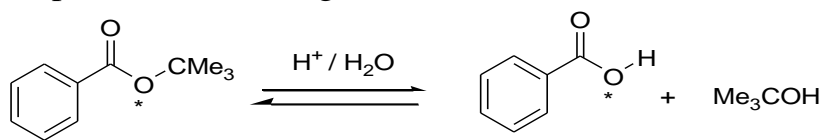


Gr. B

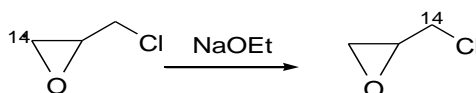
5. (a) Predict the product with mechanism. 2



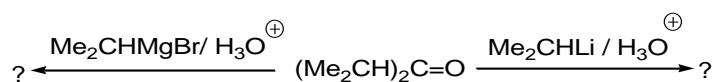
(b) Mechanistically explain the following observation. 2



(c) On heating $\text{H}_3\text{C}.\text{CH}=\text{CH}.\text{COOH}$ decarboxylate easily than $\text{R}_3\text{C}.\text{CH}=\text{CH}.\text{COOH}$. Explain why? (d) Explain the mechanism of the following reaction. (1.5+1.5)



6. (a) Explain benzoin gives $\text{PhCH}(\text{OH})\text{CO}(p\text{-Tol})$ when treated with *p*-methyl benzaldehyde. (b) Applying Wittig reaction convert PhCHO to PhCH_2CHO . Predict the product of the following reactions. (2+2+3)



7. Predict the product with mechanism.

[(2 x 2) + (1.5 x 2)]

