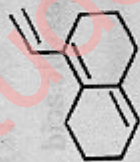
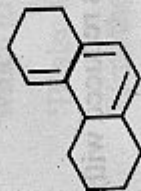


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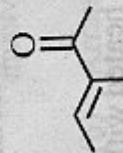
(6)



(ii)



(iii)



(iv)

8

9. (a) Explain the following terms :

(i) Bathochromic shift

(ii) Auxochrome

(iii) Chromophore

(iv) Hyperchromic effect

4

(b) Discuss the basic principle involved in UV spectroscopy.

4

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B.Sc. 3rd Semester (Hons.) New Scheme Examination,
December-2015

CHEMISTRY

Paper-XX (CHCH)-203

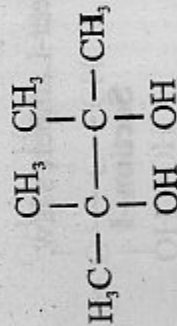
Organic Chemistry

Time allowed : 3 hours] [Maximum marks : 40

Note : Attempt five questions in all, Question no. 1 is compulsory selecting two questions from each

Section-I and II.

1. (a) Write the IUPAC name of



(b) Write the structure of Anisole and Phenetole.

(c) Name the reaction in which polyhydric alcohol is treated with an alkyl cyanide with HCl in presence of anhyd. AlCl_3 in ether solution to form ketimine hydrochloride.

(d) Write the structure of Noble's oil.

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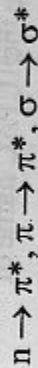
(2)

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(e) Name the reagent by which the presence of carboxyl group is distinguished from alcohols and phenols.

(f) Name the reaction in which carboxylic acid having α -H can be halogenated by reaction with Cl_2 or Br_2 in presence of red P to give α -chloro or α -Bromo acids.

(g) Arrange the following transitions in order of their decreasing energy :

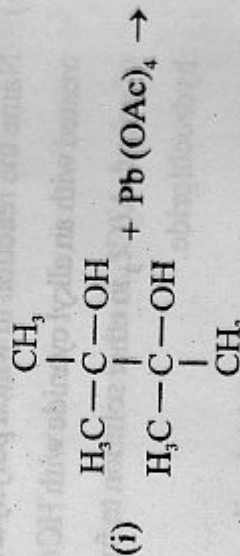


(h) State Beer-Lambert's law.

$8 \times 1 = 8$

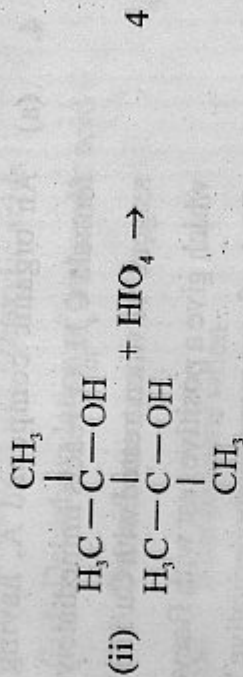
Section-I

2. (a) Complete the following reactions with mechanisms :



(3)

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4

(b) What happens when the following ethers are treated with equimolar amount of HI

(i) Tert butyl methyl ether

(ii) n-Butyl methyl ether. Given reason. 4

3. (a) Bring out the following conversions :

(i) Phenol into picric acid

(ii) Phenol to p-Bromophenol

(iii) Chlorobenzene into phenol

(iv) Phenol to Salicylaldehyde. 4

(b) Arrange the following in the increasing order of acidity with reason :- p-cresol, p-nitrophenol, 2, 4-dinitrophenol and m-nitrophenol. 2

(c) How can you distinguish between alcohols and phenols? 2

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[P.T.O.]

(ii) Reduction of Carboxylic acids

(iii) Decarboxylation of carboxylic acid

(iv) Esterification.

4 × 2 = 8

7. (a) What happens when

(i) Propanoic acid is reduced with LiAlH_4

(ii) Butanoic acid is treated with Br_2 in presence of red P.

(iii) Sodium benzoate is heated with soda lime.

(iv) Benzoic acid is reacted with SOCl_2 .

4

(b) Do the following conversions :

(i) Propanoyl*chloride into Propanoic acid

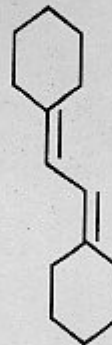
(ii) Acetic acid into acetamide

(iii) Toluene into benzoic acid

(iv) CO_2 into 2-Methylpropanoic acid.

4

8. Using Woodward-Fieser's rules, calculate the λ_{max} of the following :



4. (a) An organic compound A, having molecular formula $\text{C}_4\text{H}_{10}\text{O}$, reacts immediately with Lucas reagent. 'A' when treated with $\text{Cu}/573\text{K}$ forms 'B', which give a positive test with Baeyer's reagent, 'B' also forms monobromoderivative 'C' with HBr . Write the structure of A, B and C and the reactions involved.

4

(b) Arrange the following in the increasing order of their (i) solubility in water (ii) Boiling Point Sec-Butyl alcohol, n-Butyl alcohol, iso-Butyl alcohol and Tert-Butyl alcohol.

4

5. Explain the mechanism of

(i) Fries rearrangement

(ii) Reimer Tiemann Reaction

(iii) Gattermann synthesis

(iv) Lederer-Manasse Reaction.

8

Section-II

6. Explain the following reactions giving examples

(i) Heil-Volhard Reaction