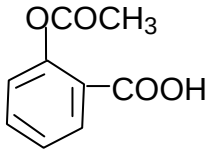
JB Academy
Review Exams (2019-20)
Class XII (Chemistry)

Time : 1.5 hrs. MM- 35

Q1. Chloroform is stored in closed dark coloured bottles completely filled so that air is kept out. Give reason. (1)

Q2. What happen when Bromobenzene is treated with Mg in presence of dry ether? (1)

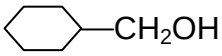
Q3. Write down common and IUPAC name of following compound. (1)



Q4. Write the mechanism of hydration of propene to form alcohol. (2)

Q5. Show how the following alcohols prepared by the reaction of suitable Grignard reagent on methanal.

(i) $(CH_3)_2CHCH_2OH$

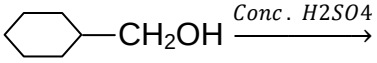
(ii)  (2)

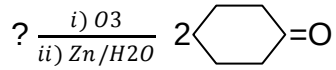
Q6. Give simple chemical test to distinguish between the following pairs of compounds. (3)

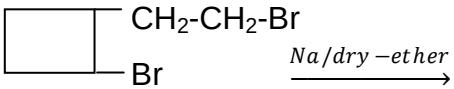
(i) pentan-2-one and pentan-3-one
(ii) Benzoic acid and ethyl-benzoate
(iii) Acetaldehyde and acetone

OR

Complete each synthesis by giving missing starting material.

(i) 

(ii) 

(iii) 

Q7. Account for the following : (3)

(i) While separating a mixture of ortho and para-nitrophenol by steam distillation, name the isomer which will be steam volatile. Give reason.

(ii) Formic acid reduces tollen's reagent while other carboxyllic acids do not.

(iii) chlorobenzene is extremely less reactive toward nucleophilic substitution reaction. give reason.

P.T.O.

Q8. Write short note on the following : (3)

(i) Reimer-Tiemann reaction
(ii) HVZ-reaction
(iii) Cross-Cannizzaro reaction

Q9. What happen when (3)

(i) Phenol is treated with CH_3COCl in presence of anhydrous $AlCl_3$.

(ii) Benzaldehyde is treated with Br_2 in presence of $FeBr_3$.

(iii) Tert-Butyl-bromide is treated with CH_3ONa.

OR

How will you bring about the following conversions.

(i) Ethanol to But-1-yne
(ii) Benzene to biphenyl
(iii) Aniline to bromo-benzene

Q10. Arrange the following compounds in increasing order of their property as indicated: (3)

(i) Benzoic acid, 4-nitrobenzoic acid, 2-nitrobenzoic acid, 4-methylbenzoic acid (Acid strength)
(ii) Acetaldehyde, Acetone, Di-tert-butylketone, methyl-tert-butylketone, (reactivity toward HCN)
(iii) 2-bromo-2-methylbutane, 1-bromopentane, 2-bromo-pentane (SN^2 reaction)

Q11. Compound A ($C_5H_8O_2$) is reduced to pentane when treated with Zn-Hg/HCl. With NH_2OH 'A' form dioxime and also gives Iodoform test and Tollen's tests. Identify the compound A and also write equation for the reaction involved. (3)

OR

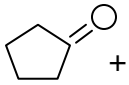
An organic compound A having molecular formula (C_6H_6O) gives a characteristic colour with $FeCl_3$ solution. A on treatment with CO_2 and NaOH at 400K under pressure gives B which on acidification gives a compound C. The compound C react with acetyl chloride to give D, which is popular pain killer. Deduce the structure of A, B, C and D and explain all the reaction.

Q12. An organic compound contains 69.77% Carbon, 11.63% hydrogen and rest oxygen. The molecular mass of the compound is 86. It does not reduce Tollen's reagent but form an additional compound with $NaHSO_3$ and give positive iodoform test. On vigorous oxidation it gives Ethanoic acid and propanoic acid. Write the possible structure of the compound and proper reaction? (5)

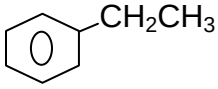
OR

Primary alkyl halide (A) C_4H_9Br reacted with alcoholic KOH to give compound (B). B is reacted with HBr to give (C) which is an isomer of (A). when A is reacted with Na metal it gives compound (D),C_8H_{18} which is different from the compound formed when n-butyl bromide is reacted with sodium.Give the structural formula of (A) and write the equations for all the reaction.

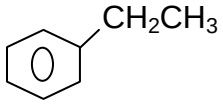
Q13. Predict the products of the following reactions? (5)

(i)  + $NH_2CONHNH_2$ $\xrightarrow{H+}$

(ii) O=  $-CH_2COOCH_3$ $\xrightarrow{NaBH4}$

(iii)  $\xrightarrow{Br2/hv}$

(iv) $(CH_3)_3COH$ + Alco.KOH $\xrightarrow{Heat}$

(v)  $\xrightarrow{KMnO4/KOH}$

OR

(A) Give plausible explanation for each of the following:

(i) Cyclo-hexanone forms cyanohydrin in good yield but 2, 2, 6- trimethyl-cyclohexanone does not.

(ii) O-nitrophenol is more acidic than O-methoxyphenol.

(B) How would you convert Ethanal into the following compounds?

(i) Butane-1, 3-diol (ii) But-2-enal (iii) But-2-enoic acid

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