DPP
DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

Solutions

Subject : CHEMISTRY
DPP No. : 1

Topic :- Aldehydes, Ketones & Carboxylic Acids

2 **(d)**

Acids are soluble in bases.

3 **(a)**

Eq. of silver salt = Eq. of Ag

$$\frac{0.759}{E} = \frac{0.463}{108}$$

$\therefore$ Eq. wt. of ag salt = 177

$\therefore$ Eq. wt. of acid = 177 – 108 +1 = 70

4 **(b)**

Acetaldehyde on heating with Tollen's reagent give silver mirror test while acetone is not oxidised by Tollen's reagent

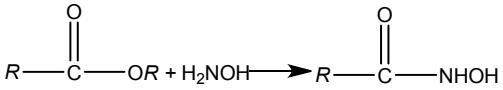
(Ketones oxidise only under drastic condition).

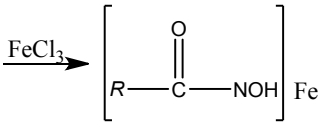
5 **(c)**

Hydroxamic acid test is used to detect presence of esters.

In hydroxamic acid test a few crystals or a few drops of the substance is dissolved in 1 mL of 95% ethanol+1 mL of 1 MHCl. Then, a drop of 5% $FeCl_3$ is added.

Formation of characteristic colour shows the presence of acyl or ester group.





6 **(b)**

$LiAlH_4$ reduces –COOH group to $-CH_2OH$ group without affecting C=C bond.

7 **(a)**

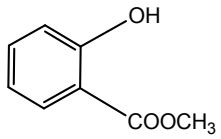
Benzaldehyde $\xrightarrow{\text{Perkin reaction}}$ 3 – phenyl prop – 2ene – 1 – oic acid.

$$C_6H_5CHO + (CH_3CO)_2O \xrightarrow{CH_3COONa} C_6H_5CH = CHCOOH + CH_3COOH$$

Cinnamic acid

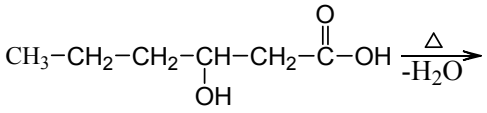
9 **(b)**

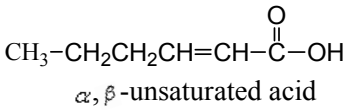
Methyl salicylate is the main component of oil of winter green. Its structure is



13 **(c)**

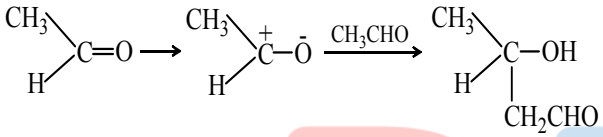
α-hydroxy acids form lactides, γ and δ-hydroxy acids form lactones, (cyclic compounds). While β-hydroxy acids form α,β-unsaturated acid on heating





14 **(c)**

This is Knovengeal reaction.



15 **(d)**

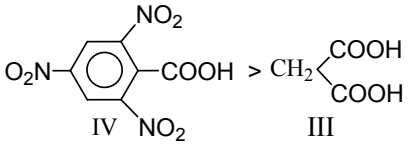
For the conversion of primary alcohol into aldehyde with the same number of carbon, the most suitable reagent is pyridinium chlorochromate (PCC).

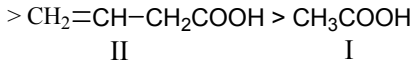
$$RCH_2OH \xrightarrow{PCC} RCHO$$

Note PCC is the mixture of pyridine, CrO_3 and HCl in 1:1:1 ratio.

16 **(c)**

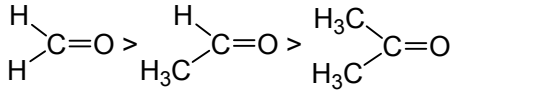
In 2, 4, 6-tri-nitrobenzoic acid, the decarboxylation takes place most easily, because of $-I$ effect of nitro group, whereas in the dicarboxylic acid with one carbon atom having two carboxylic group it is also easier to removeCO_2. Hence, the order of ease of decarboxylation

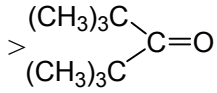




19 **(a)**

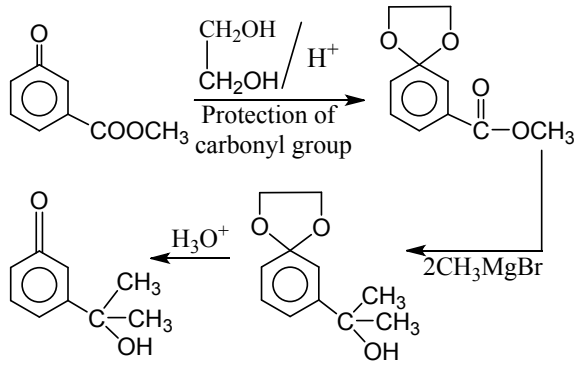
As the number and the size of the alkyl groups increases, reactivity decreases. Hence, the reactivity order is





20 **(c)**

Keto group is protected by ethylene glycol being reduced and ester radical of the compound is reduced to tertiary alcohol by reaction with Grignard reagent and subsequent hydrolysis



ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**D**	**D**	**A**	**B**	**C**	**D**	**A**	**A**	**B**	**A**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**D**	**A**	**C**	**C**	**D**	**C**	**A**	**C**	**A**	**C**