

## DPP

DAILY PRACTICE PROBLEMS

Class : XII<sup>th</sup>

Date :

Solutio

Subject : CHEMISTRY

DPP No. : 2

### Topic :- Aldehydes, Ketones & Carboxylic Acids

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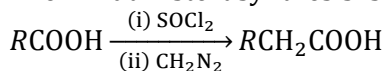
(a)

Acetic acid is  $\text{CH}_3\text{COOH}$  or  $\text{C}_2\text{H}_4\text{O}_2$ . Thus, its empirical formula is  $\text{CH}_2\text{O}$ .

10

(a)

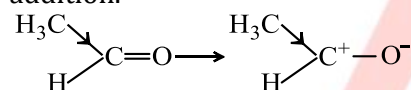
The Arndt-Eistert synthesis is used to convert carboxylic acid to the higher acid homologue



11

(b)

Less +ve inductive effect on carbonyl group and thus more +ve charge on  $\text{C}^+$  to give nucleophilic addition.



12

(a)

$$\% \text{ of C} = \frac{12 \times 0.147}{44 \times 0.2} \times 100 = 20$$

$$\% \text{ of H} = \frac{2 \times 0.12}{18 \times 0.2} \times 100 = 6.66$$

$$\therefore \% \text{ of O} = 100 - 20 - 6.66 = 73.34$$

14

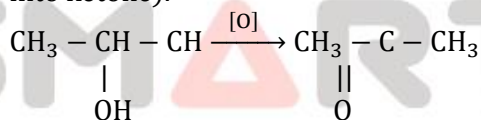
(a)

Resonance in carboxylate ions give rise to identical bond lengths.

15

(a)

2-hydroxypropane or secondary alcohol is oxidised into propanone (corresponding carbonyl compound because in 2-hydroxypropane, secondary alcoholic group is present and it is oxidised into ketone).



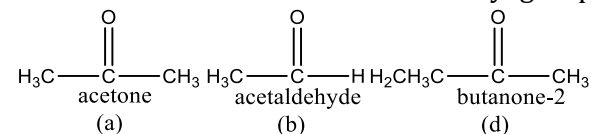
2-hydroxypropane  
(s-alcohol)

propanone  
(ketone)

16

(c)

Only aldehydes and ketones react with 2, 4-dinitrophenyl hydrazine to give orange coloured ppt. This reaction is used as test for carbonyl group. Alcohols does not give this reaction.



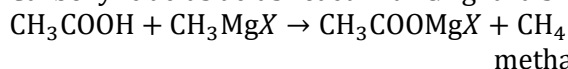
Choice (a), (b) and (d) are carbonyl compounds and they react with 2,4-dinitrophenyl hydrazine.  $\text{CH}_3\text{OH}$  [choice (c)] doesn't have carbonyl group.

$\therefore \text{CH}_3\text{OH}$  [choice (c)] doesn't react with 2,4-dinitrophenyl hydrazine.

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(b)

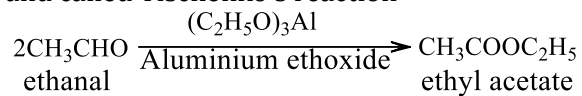
Carboxylic acids react with Grignard's reagent to give alkanes.





19 (d)  
2-pentanone give positive iodoform test.

20 (b)  
Ethyl acetate is obtained by acetaldehyde by using aluminium ethoxide. It is a one step process and called Tischenko's reaction



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



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