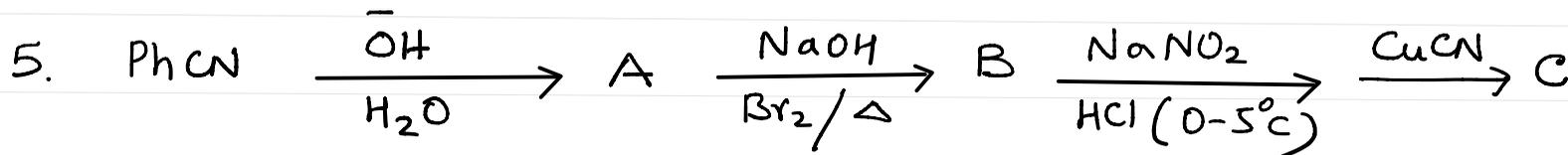
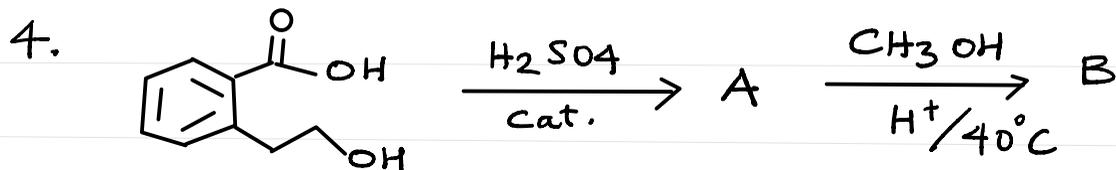
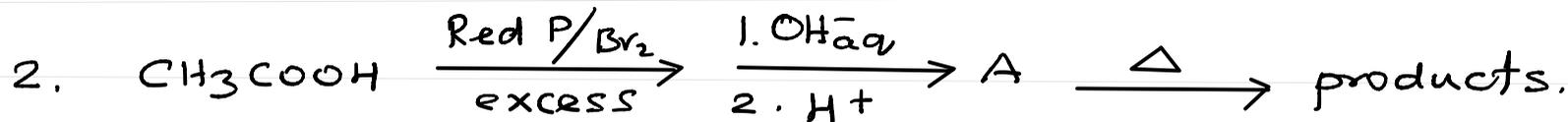
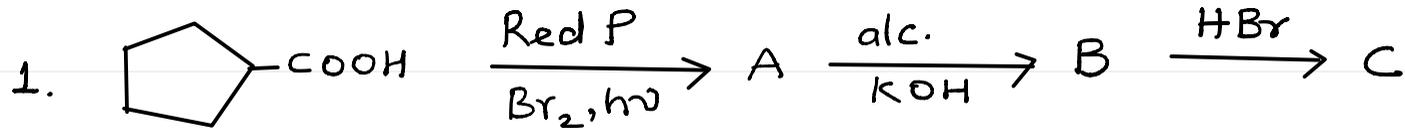
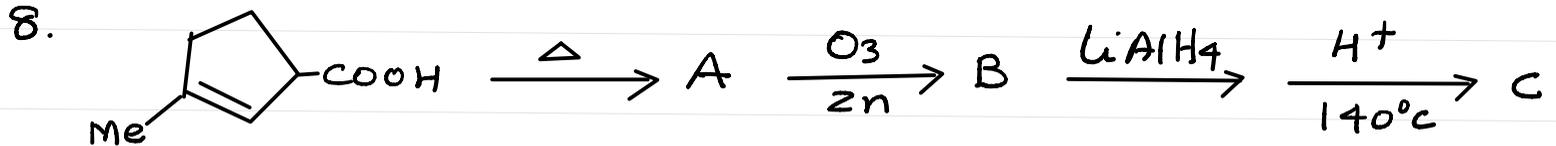
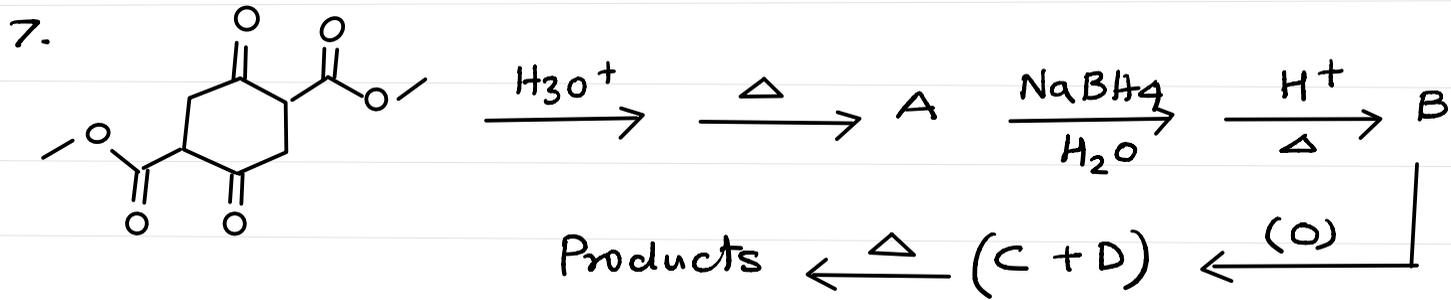
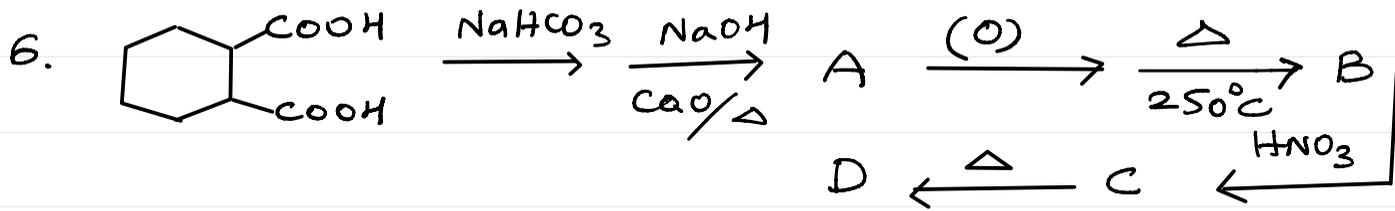
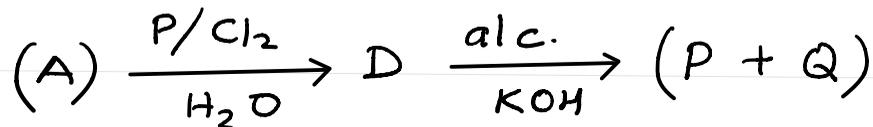
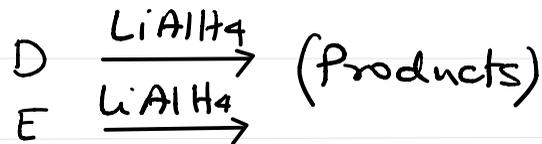
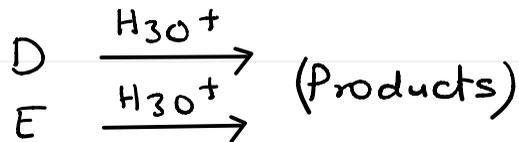
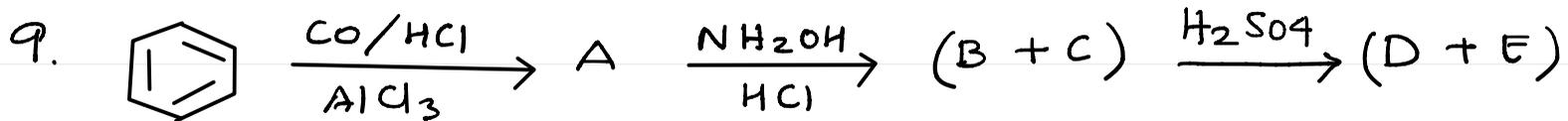


**HWS-2**  
**Class Test-2**



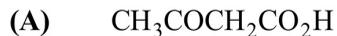




## Class Test - 1

6.

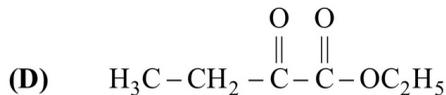
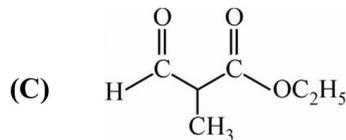
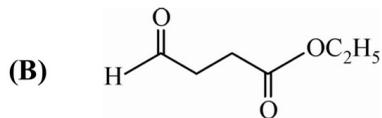
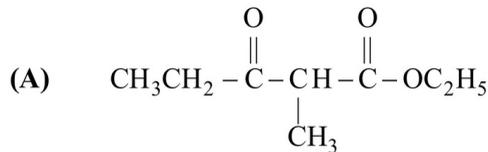
$\text{CH}_3\text{CO}_2\text{C}_2\text{H}_5 \xrightarrow[\text{(ii) H}_3\text{O}^+]{\text{(i) C}_2\text{H}_5\text{O}^-\text{Na}^+/\text{H}^+}$  A. The structure of the compound A is :



50.

Which of the following compound is formed as major product when ethyl propanoate and ethyl methanoate are reacted in the presence of sodium ethoxide in ethyl alcohol followed by acidification ?

The structure of the compound A is :

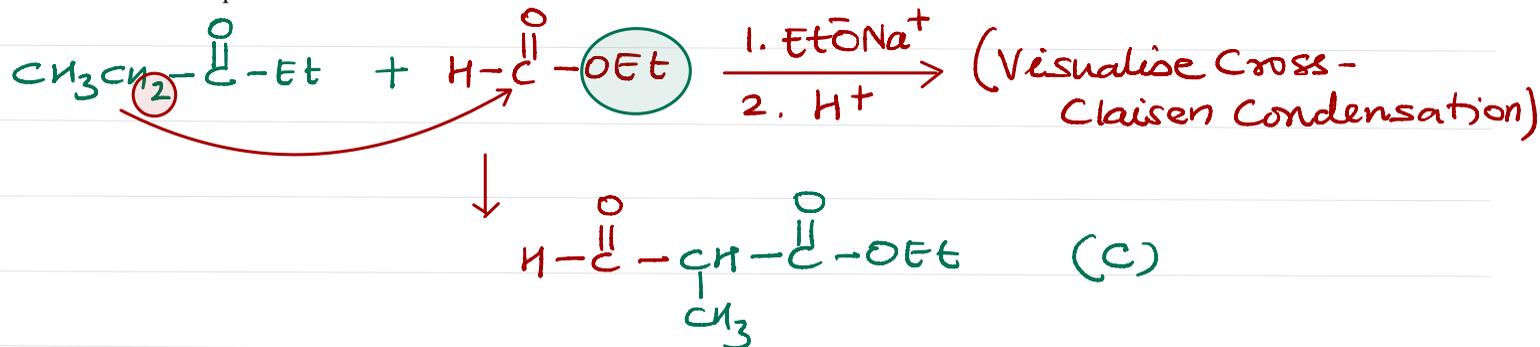


Ans: Q6. A                      Q50. C



50. Which of the following compound is formed as major product when ethyl propanoate and ethyl methanoate are reacted in the presence of sodium ethoxide in ethyl alcohol followed by acidification ?

The structure of the compound A is :

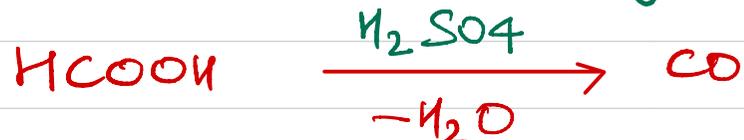


28.

The reaction of formic acid with concentrated  $\text{H}_2\text{SO}_4$  gives :

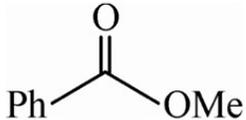
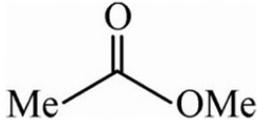
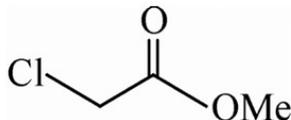
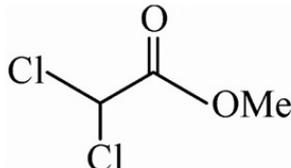
- (A)  $\text{CH}_3\text{COOH}$  (B)  $\text{CO}_2 + \text{H}_2\text{O}$  (C)  $\text{CO} + \text{H}_2\text{O}$  (D)  $\text{HCHO}$

$\text{H}_2\text{SO}_4$ : A dehydrating agent:



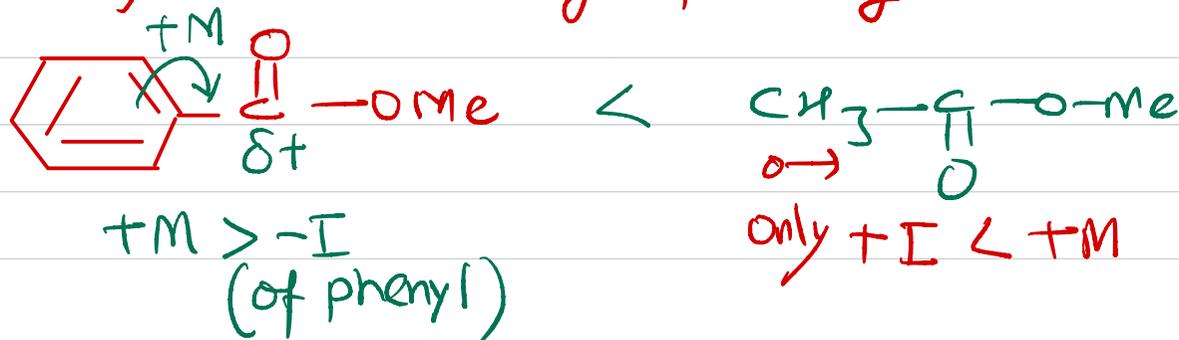
30.

The order of reactivity of the following esters towards hydrolysis is :

- I.  II.  III.  IV. 
- (A)  $\text{I} > \text{II} > \text{III} > \text{IV}$  (B)  $\text{II} > \text{I} > \text{III} > \text{IV}$  (C)  $\text{IV} > \text{III} > \text{II} > \text{I}$  (D)  $\text{IV} > \text{III} > \text{I} > \text{II}$

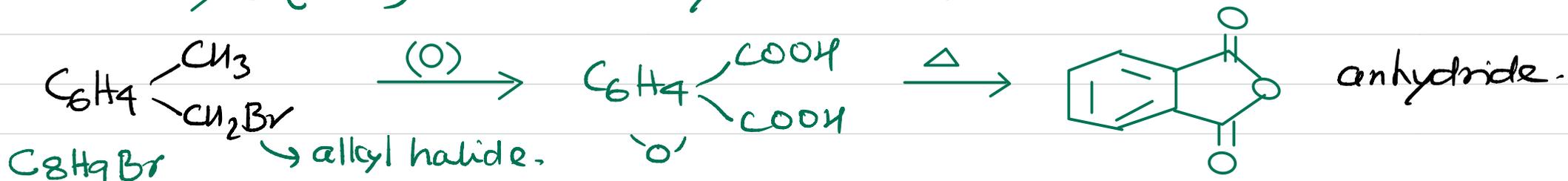
\* IV is most reactive as 2' Cl-atoms exerts strong  $-I$  effect thus increasing polarity.  $\Rightarrow \text{IV} > \text{III}$

\* Now; (I) is least reactive as Ph-ring exerts  $+M$  ( $> -I$ ) thereby decreasing polarity of ring.

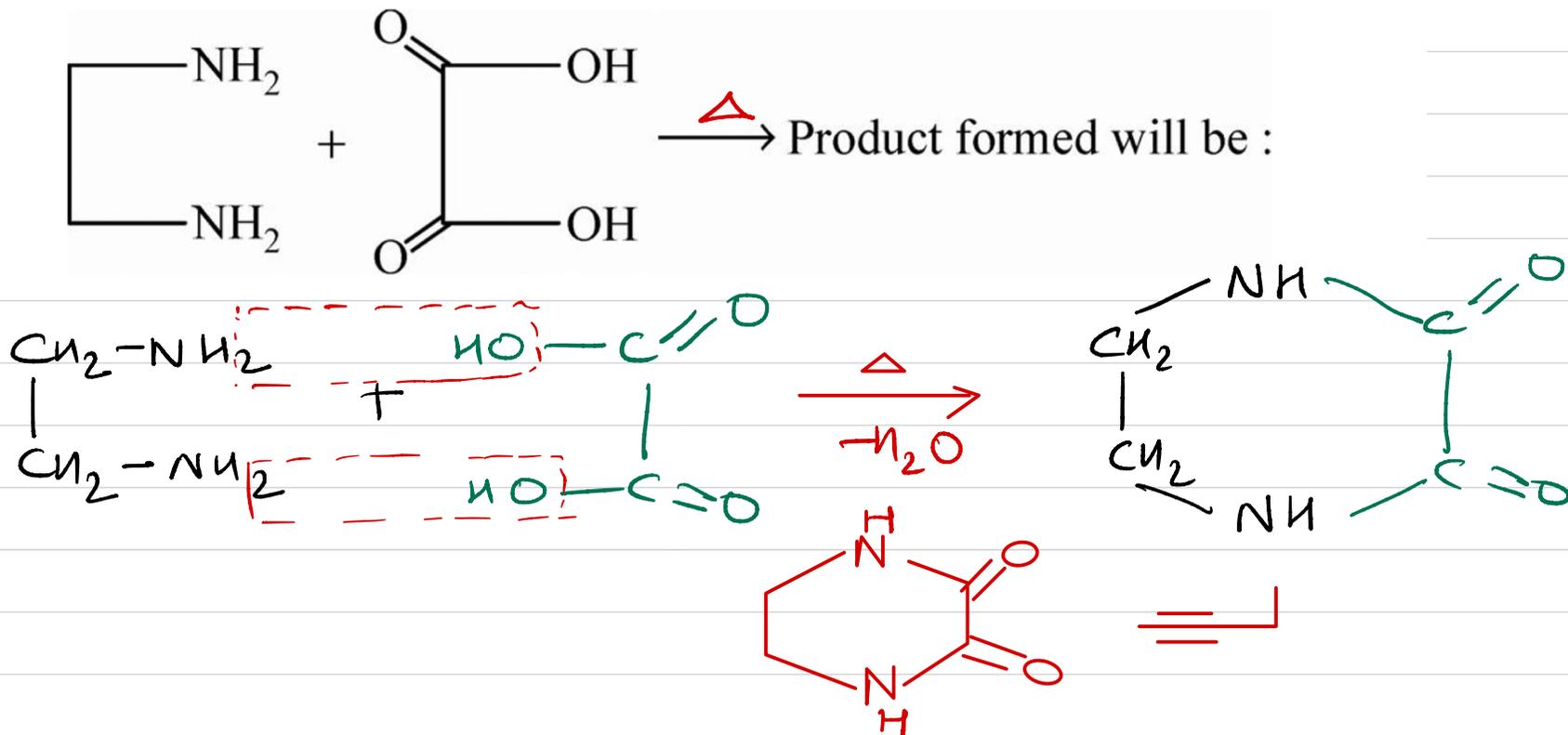


19. Compound (A),  $C_8H_9Br$ , gives a yellow precipitate when warmed with alcoholic  $AgNO_3$ .

Oxidation of (A) gives an acid (B),  $C_8H_6O_4$ . (B) easily forms anhydride on heating. Identify the compound

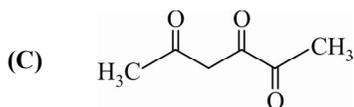
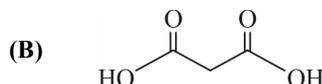
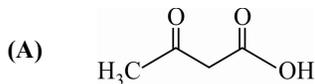


32.  $\xrightarrow{\Delta}$  Product formed will be :



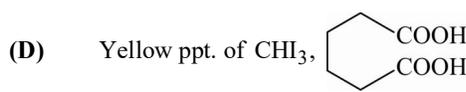
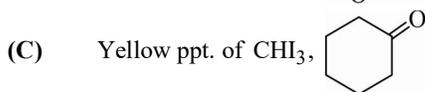
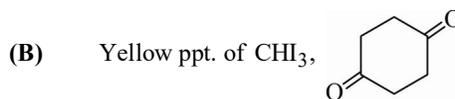
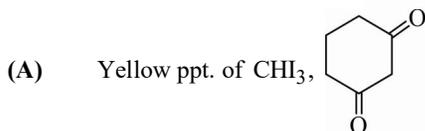
Choose the correct Alternatives for each of the following questions. Each Question has ONE correct Alternative, however those marked with (\*) may have MORE THAN ONE correct Alternatives.

\*1. Which of the following compound would be expected to decarboxylate when heated ?

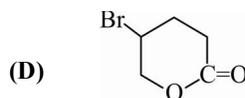
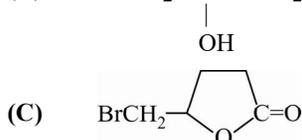
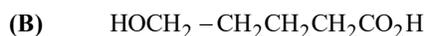


2. The end product of the reaction is :

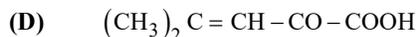
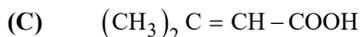
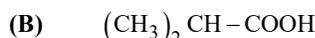
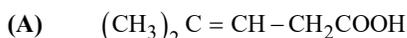
(i)  $I_2 + NaOH, \Delta$   
(ii)  $H^{\oplus}, \Delta$



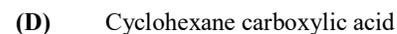
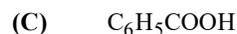
3. The major product obtained in the reaction is :  $CH_2 = CHCH_2CH_2CO_2H \xrightarrow{Br_2/H_2O}$



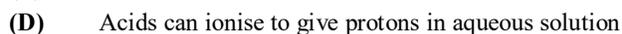
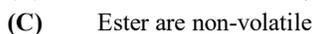
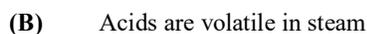
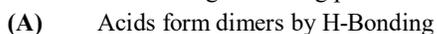
4. Mesityl oxide  $\xrightarrow{NaOH, I_2} CHI_3 + A \xrightarrow{H^+} \text{Acid}$ . The acid formed is :



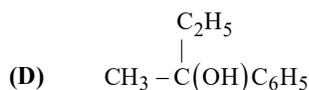
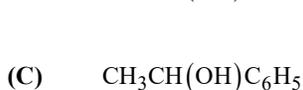
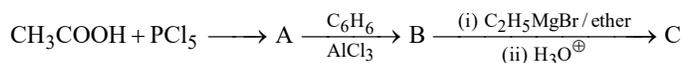
\*5. Which of the following does not undergo Hell-Volhard Zelinsky reaction ?



6. Acids have much higher boiling points than isomeric esters because :



7. In the following reaction sequence, identify the product C.





In the above sequence A & B respectively are :

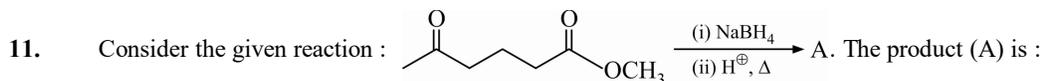
- (A)  $\text{Br}_2 / \text{KOH}, \text{NaOH}$  (B)  $\text{Br}_2 / \text{KOH}, \text{HNO}_2$   
 (C)  $\text{KMnO}_4, \text{KOH}$  (D)  $\text{HNO}_2, \text{Br}_2 / \text{KOH}$

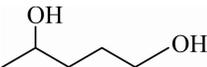
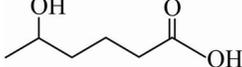
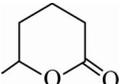
9. Excess of ethyl acetate on treatment with hydrazine gives :

- (A)  $\text{CH}_3 - \text{C}(\text{O}) - \text{NH} \cdot \text{NH}_2$  (B)  $\text{CH}_3 - \text{C}(\text{OC}_2\text{H}_5) = \text{N} \cdot \text{NH}_2$   
 (C)  $\text{CH}_3 - \text{C}(\text{O}) - \text{NH} - \text{NH} - \text{C}(\text{O}) - \text{CH}_3$  (D)  $\text{CH}_3 - \text{C}(\text{O}) - \text{NH}_2$

10. The reactivities of acid halides (I), anhydrides (II), esters (III) and amides (IV) with a nucleophile follow the order :

- (A)  $\text{I} > \text{II} > \text{III} > \text{IV}$  (B)  $\text{IV} > \text{III} > \text{II} > \text{I}$  (C)  $\text{I} > \text{III} > \text{II} > \text{IV}$  (D)  $\text{III} > \text{II} > \text{I} > \text{IV}$



- (A)  (B)   
 (C)  (D) 

12. The correct sequence of decreasing order of hydrolysis of acid chlorides is :

- (A)  $\text{C}_6\text{H}_5 - \text{COCl} > \text{p-O}_2\text{N} - \text{C}_6\text{H}_4 - \text{COCl} > \text{p-CH}_3\text{O} - \text{C}_6\text{H}_4 - \text{COCl}$   
 (B)  $\text{C}_6\text{H}_5 - \text{COCl} > \text{p-CH}_3\text{O} - \text{C}_6\text{H}_4 - \text{COCl} > \text{p-O}_2\text{N} - \text{C}_6\text{H}_4 - \text{COCl}$   
 (C)  $\text{p-O}_2\text{N} - \text{C}_6\text{H}_4 - \text{COCl} > \text{C}_6\text{H}_5 - \text{COCl} > \text{p-CH}_3\text{O} - \text{C}_6\text{H}_4 - \text{COCl}$   
 (D)  $\text{p-O}_2\text{N} - \text{C}_6\text{H}_4 - \text{COCl} > \text{p-CH}_3\text{O} - \text{C}_6\text{H}_4 - \text{COCl} > \text{C}_6\text{H}_5 - \text{COCl}$

13. Kolbe electrolysis of potassium succinate gives  $\text{CO}_2$  and ..... :

- (A)  $\text{C}_2\text{H}_6$  and  $\text{KOH}$  (B)  $\text{C}_2\text{H}_4$  and  $\text{KOH}$   
 (C)  $\text{C}_2\text{H}_4$ ,  $\text{KOH}$  and  $\text{H}_2$  (D)  $\text{CH}_4$ ,  $\text{C}_2\text{H}_6$  and  $\text{C}_2\text{H}_4$

14. What are A and B in the following sequence of reactions ?

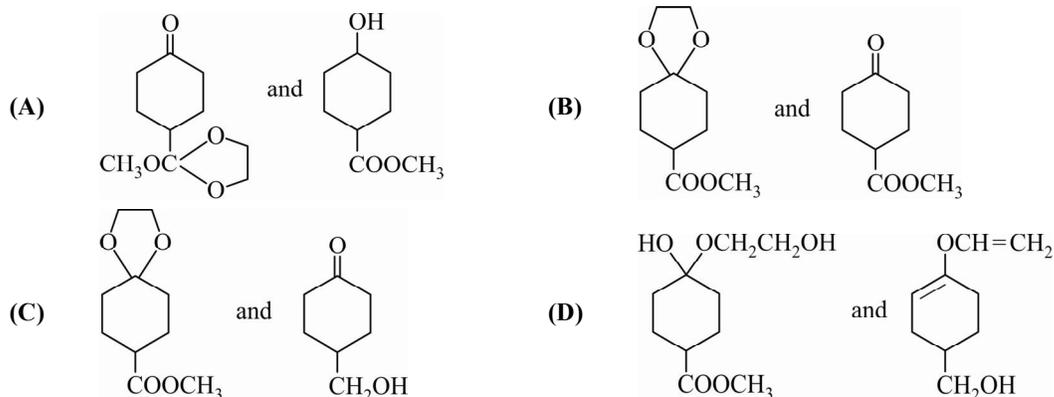
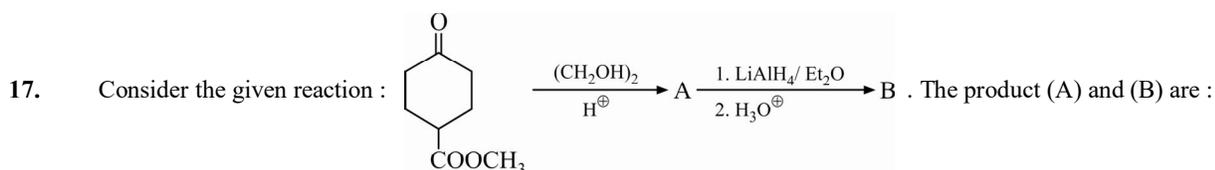
- (i)  $\text{CH}_3\text{CH}_2\text{COOH} \xrightarrow[2. \text{H}_2\text{O}]{1. \text{P} / \text{Br}_2} (\text{A})$  (ii)  $\text{A} \xrightarrow[2. \text{H}^\oplus]{1. \text{Alc. KOH excess}} \text{B}$   
 (A)  $\text{CH}_3 - \underset{\text{Br}}{\text{CH}} \cdot \text{COOH}, \text{CH}_2 = \text{CHCOOH}$  (B)  $\text{CH}_3\text{CH}_2\text{COBr}, \text{CH}_2 = \text{CHCOOH}$   
 (C)  $\underset{\text{Br}}{\text{CH}_2} \text{CH}_2\text{COOH}, \text{CH}_2 = \underset{\text{Br}}{\text{CH}} \cdot \text{COOH}$  (D)  $\text{H}_3\text{C} - \underset{\text{Br}}{\overset{\text{Br}}{\text{C}}} - \text{COOH}, \text{H}_2\text{C} = \underset{\text{Br}}{\text{C}} - \text{COOH}$

15. Which of the following reactions involve a decrease in the length of the carbon chain :

- (A) Schmidt reaction (B) Hoffmann's bromamide reaction  
 (C) Hell-Volhard-Zelinski reaction (D) Claisen condensation

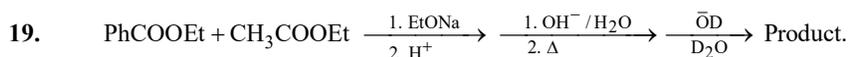
\*16. Which of the following methods can be used for the conversion of carboxylic acids into acid chlorides ?

- (A)  $\text{RCOOH} + \text{SOCl}_2 \longrightarrow$  (B)  $\text{RCOOH} + \text{PCl}_5 \longrightarrow$   
 (C)  $\text{RCOOH} + \text{Cl}_2 \longrightarrow$  (D)  $\text{RCOOH} + \text{P} + \text{Cl}_2 \longrightarrow$

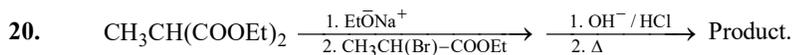
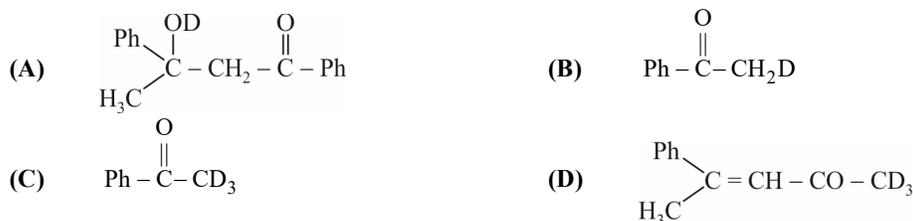


\*18. Which of the following statement(s) is(are) correct for benzoic acid ?

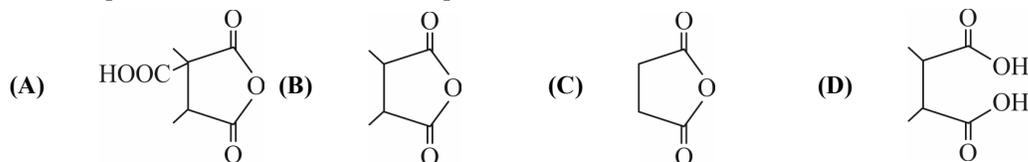
- (A) Nitration gives o-and p-nitrobenzoic acid  
 (B) Bromination ( $\text{Br}_2 / \text{FeBr}_3$ ) gives m-bromobenzoic acid  
 (C) It gives poor yield in Friedel-Craft reaction with  $\text{CH}_3\text{COCl} / \text{AlCl}_3$   
 (D) The reaction with concentrated sulphuric acid gives 3-carboxybenzenesulphonic acid



The final product in the above reaction setup is :



The final product in the above reaction setup is :

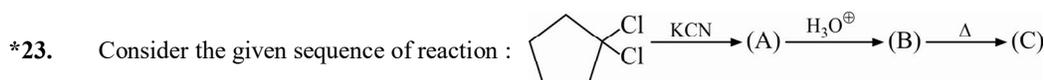


\*21. Which of the following does not give iodoform test ?

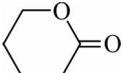
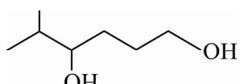
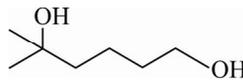
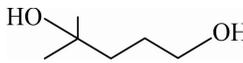
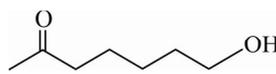
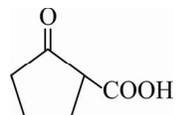
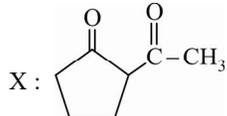
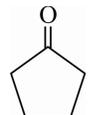
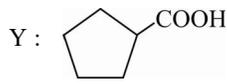
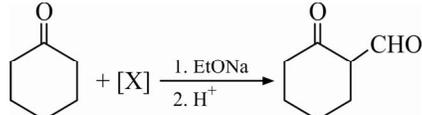
- (A) Acetic acid (B) lactic acid (C) Acetophenone (D) Propionic acid

\*22. Which of the following reagent(s) can distinguish between  $\text{HCOOH}$  &  $\text{CH}_3\text{COOH}$  ?

- (A)  $\text{NaHCO}_3$  (B) Na (C) Tollen's reagent (D) Fehling's solution



Which of the following is/are correct statement(s) about the above sequence of reactions ?

- (A) Compound (A) is formed through  $S_N$  reaction.  
 (B) Compound (C) on reduction with  $LiAlH_4$  forms a product which on dehydration gives cyclohexene.  
 (C) Compound (A) requires two moles of hydrogen for complete reduction.  
 (D) Compound (C) on Schmidt's reaction gives a product which reacts with  $HNO_2$  to give (D) as major product, where (D) on dehydration gives cyclopentene.
- \*24. Which of the following on reduction with  $LiAlH_4$  will give ethyl alcohol ?  
 (A)  $(CH_3CO)_2O$  (B)  $CH_3COCl$  (C)  $CH_3CONH_2$  (D)  $CH_3COOC_2H_5$
25. Which of the following constitutes the best substrate during the acidic hydrolysis of amides ?  
 (A)  $R-\overset{\overset{O}{\parallel}}{C}-NH_2$  (B)  $R-\overset{\overset{O}{\parallel}}{C}-\overset{\oplus}{N}H_3$  (C)  $R-\overset{\overset{OH}{\parallel}}{C}-NH_2$  (D)  $R-\overset{\overset{\ominus}{O}}{\parallel}{C}-NH_2$
26. When  is treated with two equivalent of methyl magnesium iodide and the product is acidified, the final product will be:  
 (A)  (B)  (C)  (D) 
27. Consider the given reaction :  $CH_3COOC_2H_5(X) \xrightarrow[C_2H_5OH]{C_2H_5ONa} (Y) \xrightarrow{\text{Ester(X)}} \xrightarrow{H^+} \text{Product (Z)}$ .  
 The product (Z) is :  
 (A)  $C_2H_5O-CH_2-\overset{\overset{O}{\parallel}}{C}-\overset{\overset{O}{\parallel}}{C}-OC_2H_5$  (B)  $CH_3-\overset{\overset{O}{\parallel}}{C}-CH_2-\overset{\overset{O}{\parallel}}{C}-OC_2H_5$   
 (C)  $HCOOC_2H_5$  (D)  $C_2H_5O-\overset{\overset{O}{\parallel}}{C}-OC_2H_5$
- \*28. In the given reaction  $C_2H_5O-\overset{\overset{O}{\parallel}}{C}-(CH_2)_3-CH_2-COOC_2H_5 \xrightarrow[(ii) H_2O/HCl]{(i) C_2H_5ONa/C_2H_5OH} [X] \xrightarrow{\Delta} [Y]$ .  
 [X] & [Y] are :  
 (A) X :  (B) X :  (C) Y :  (D) Y : 
29. In the given reaction : . [X] is :  
 (A)  $CH_3-\overset{\overset{O}{\parallel}}{C}-Cl$  (B)  $HCHO$  (C)  $HCOOC_2H_5$  (D)  $\begin{matrix} COOC_2H_5 \\ | \\ COOC_2H_5 \end{matrix}$
30. Which among the following ester(s) is most reactive towards Nucleophilic attack ?  
 (A)  $CH_3COOCH_3$  (B)  $HCOOCH_3$  (C)  $CH_3CH_2COOC_6H_5$  (D)  $C_6H_5COOCH_3$

**ANSWER KEY FOR CLASS TEST-2  
CARBOXYLIC ACIDS**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
ABD	B	C	C	AC	A	D	B	C	A
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
C	C	C	A	AB	ABD	C	BCD	C	B
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
AD	CD	ABD	ABD	C	B	B	AC	C	B

**Thank you !**