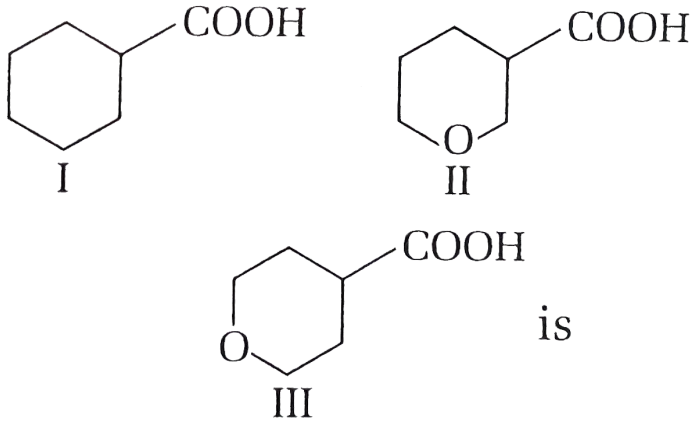
CHEMISTRY

BOOKS - NEET PREVIOUS YEAR (YEARWISE + CHAPTERWISE)

CARBOXYLIC ACIDS AND THEIR DERIVATIVES

Exercise

1. The correct order of strengths of the carboxylic acids



is

A. I gt II gt III

B. II gt III gt I

C. III gt II gt I

D. II gt I gt III

Answer: B

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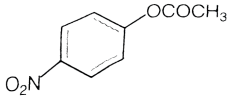
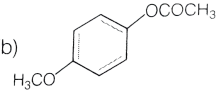
2. Which of the the following esters gets hydrolysed most easily under alkaline conditions?

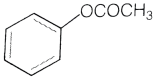
A. (a)

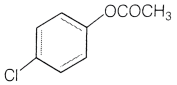


B. (b)



C. (c)



D. (d) 

Answer: A

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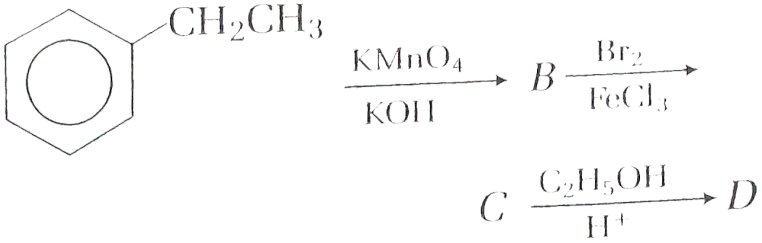
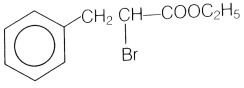
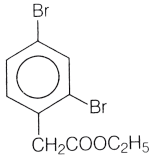
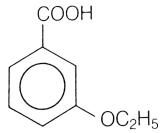
3. In a set of reactions, ethyl benzene yielded a product D.

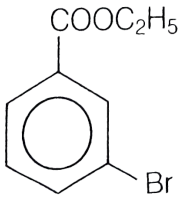


D would be

A. (a) 

B. (b) 

C. (c) 

D. (d) 

Answer: D

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4. Propionic acid with Br_2/P yields a dibromo product. Its structure would be

A. $CH_2Br - CHBr - COOH$

B. $H - \overset{\overset{Br}{|}}{\underset{\underset{Br}{|}}{C}} - CH_2COOH$

C. $CH_2Br - CH_2 - COBr$

D. $CH_3 - \overset{\overset{Br}{|}}{\underset{\underset{Br}{|}}{C}} - COOH$

Answer: D

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5. The relative reactivities of acyl compound towards nucleophilic substitution are in the order of

A. acyl chloride gt acid anhydride gt ester gt amide

B. ester gt acyl chloride gt amide gt acid anhydride

C. acid anhydride gt amide gt ester gt acyl chloride

D. acyl chloride gt ester gt acid anhydride gt amide

Answer: A

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6. Which of the following represents the correct order of the acidic strength in the given compounds ?

A.

$$FCH_2COOH > CH_3COOH > BrCH_3COOH > ClCH_2COOH$$

B.

$$BrCH_2COOH > ClCH_2COOH > FCH_2COOH > CH_3COOH$$

C.

$$FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$$

D.

$$CH_3COOH > BrCH_2COOH > ClCH_2COOH < FCH_2COOH$$

Answer: C

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7. Self-condensation of two moles of ethyl acetate in presence of sodium ethoxide yields

A. ethyl butyrate

B. acetoacetic ester

C. methyl acetoacetate

D. ethyl propionate

Answer: B

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8. In a set reaction propionic acid yielded a compound D

$$CH_3CH_2COOH \xrightarrow{SOCl_2} B \xrightarrow{NH_3} C \xrightarrow[Br_2]{KOH} D$$

The structure of D would be

A. $CH_3CH_2CH_2NH_2$

B. $CH_3CH_2CONH_2$

C. $CH_3CH_2NHCH_3$

D. $CH_3CH_2NH_2$

Answer: D

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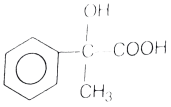
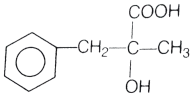
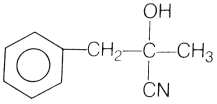
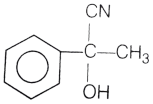
9. In a act of reactions, acid yielded a product D

$$CH_3COOH \xrightarrow{SOCl_2} A \xrightarrow[Anhy.\,AlCl_3]{\text{Benzene}} B \xrightarrow{HCN} C \xrightarrow{HOH} D.$$

A. (a) 

B. (b) 

C. (c) 

D. (d) 

Answer: A

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10. Which of the following orders of acid strength is correct?

A. $RCOOH > HOH > HC \equiv CH > ROH$

B. $RCOOH > RC \equiv CH > HOH > ROH$

C. $RCOOH > ROH > HOH > HC \equiv CH$

D. $RCOOH > HOH > ROH > HC \equiv CH$

Answer: D

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11. In a set of the given reactions, acetic acid yields a product C.

$$CH_3COOH + PCl_5 \rightarrow A$$

$$A \xrightarrow[\text{Anhy}AlCl_3]{C_6H_6} B \xrightarrow[\text{Ether}]{C_2H_5MgBr} C$$

Product C would be

A. $CH_3CH(OH)C_6H_5$

B. $CH_3 - \overset{\overset{C_2H_5}{|}}{C}(OH)C_6H_5$

C. $CH_3CH(OH)C_2H_5$

D. $CH_3COC_6H_5$

Answer: B

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12. In the following reaction , product P is $R - \underset{\underset{O}{||}}{C} - Cl \xrightarrow[Pd-BaSO_4]{H_2} P$

A. RCH_2OH

B. $RCOOH$

C. $RCHO$

D. RCH_3

Answer: C

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13. Which of the following react with benzoic acid to form enthy1 benzoate?

A. sodium ethoxide

B. ethyl chloride

C. dry HCl, C_2H_5OH

D. ethanol

Answer: C

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14. Reduction by $LiAlH_4$ of hydrolysed product of an ester gives

A. two acids

B. two aldehydes

C. one molecule of alcohol and another of carboxylic acid

D. two alcohols

Answer: D

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15. Which one of the following esters cannot undergo self Claisen condensation?

A. $CH_3CH_2CH_2CH_2COOC_2H_5$

B. $C_6H_5COOC_2H_5$

C. $C_6H_5CH_2COOC_2H_5$

D. $C_6H_{11}CH_2COOC_2H_5$

Answer: B

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16. An ester (X) with molecular formula $C_9H_{10}O_2$ was treated with excess of CH_3MgBr and the complex so formed, was treated with H_2SO_4 to give an alkene (Y) whose ozonolysis gave a ketone with molecular formula C_8H_8O which shows positive iodoform test. The structure of (X) is

A. $C_6H_5COOC_2H_5$

B. $C_6H_5COOC_6H_5$

C. $H_3CCOOC_6H_5$

D. $p-H_3COC_6H_4COCH_3$

Answer: A

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17. Consider the following transformations $CH_3COOH \xrightarrow{CaCO_3} A \xrightarrow{\text{Heat}} B \xrightarrow[\text{NaOH}]{I_2} C$ The molecular formula of C is

A. $CH_3 - \overset{\overset{OH}{|}}{\underset{\underset{I}{|}}{C}} - CH_3$

B. $ICH_2 - COCH_3$

C. CHI_3

D. CH_3I

Answer: C

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18. an ester is boiled with KOH. The product is cooled and acidified with conc. HCl. A white crystalline acid separates . The ester is

A. methyl acetate

B. ethyl acetate

C. ethyl formate

D. ethyl benzoate

Answer: D

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19. Schotten Baumann reaction is

A. benzoyl chloride and NaOH

B. acetyl chloride and NaOH

C. salicylic acid and conc. H_2SO_4

D. acetyl chloride and conc. H_2SO_4

Answer: A

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20. The preparation of ethyl acetoacetate involves

A. Witting reaction

B. Cannizaro's reaction

C. Reformatsky reaction

D. Claisen condensation

Answer: D

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21. Formic acid is obtained when :

A. calcium acetate is heated with conc. H_2SO_4

B. calcium formate is heated with calcium acetate

C. glycerol is heated with oxalic acid at 373 K

D. acetaldehyde is oxidised with $K_2Cr_2O_7$ and H_2SO_4

Answer: C

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22. Among acetic acid , phenol and n-hexanol which one of the following compound will react with $NaHCO_3$ solution to give sodium salt and CO_2 ?

A. Acetic acid

B. n-hexanol

C. Acetic acid and phenol

D. Phenol

Answer: A

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23. Sodium formate on heating yields

A. Oxalic acid and H_2

B. Sodium oxalate and H_2

C. CO_2 and NaOH

D. Sodium oxalate

Answer: B

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24. Benzne can be obtained by heating either benzoic acid with X or phenol with Y.X and Y, respectively are

A. sodalime and copper

B. Zn dust and NaOH

C. Zn dust and Sodalime

D. sodalime and zinc dust

Answer: D

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25. The compound formed when malonic ester is heated with urea is

A. cinnamic acid

B. butyric acid

C. barbituric acid

D. crotonic acid

Answer: C

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26. Among the following the strongest acid is

A. CH_3COOH

B. CH_2ClCH_2COOH

C. $CH_2ClCOOH$

D. CH_3CH_2COOH

Answer: C

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27. Which of the following represents the correct decreasing order of acidic strength of following ?

(i)Methanoic acid

(ii)Ethanoic acid

(iii)Propanoic acid

(iv)Butanoic acid

A. (i) gt (ii) gt (iii) gt (iv)

B. (ii) gt (iii) gt (iv) gt (i)

C. (i) gt (iv) gt (iii) gt (ii)

D. (iv) gt (i) gt (iii) gt (ii)

Answer: A

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