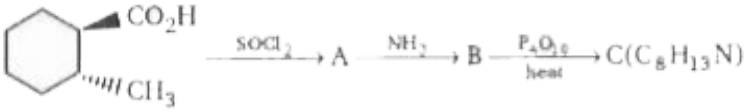
CHEMISTRY

BOOKS - MS CHOUHAN

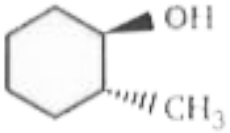
CARBOXYLIC ACID AND THEIR DERIVATIVES

Level 1

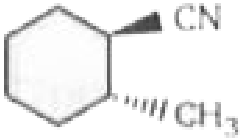
1. Identify C in the following sequence of reactions

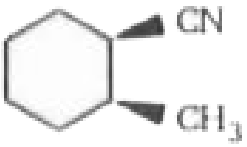


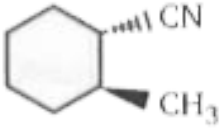
A.



B.



C. 

D. 

Answer: B

Watch Video Solution

2. Saponification (basic hydrolysis) of $C_6H_5\underset{\underset{O}{||}}{C}OCH_3$ will yield : [O= mass- 18 isotope of oxygen]

A. $C_6H_5-\overset{\overset{O}{||}}{C}-O^- + HOCH_3$

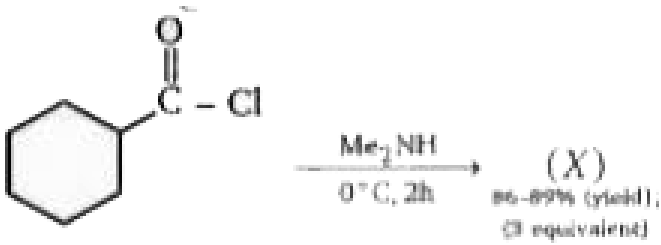
B. $C_6H_5-\overset{\overset{O}{||}}{C}-O^- + HOCH_3$

C. $C_6H_5\underset{\underset{O}{||}}{C}O^- + HO^-$

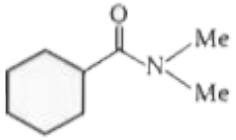
D. $C_6H_5\underset{\underset{O}{||}}{C}O^- + HOCH_3$

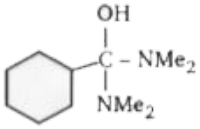
Answer: B

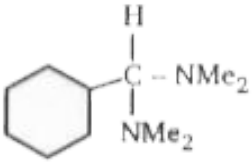
Watch Video Solution

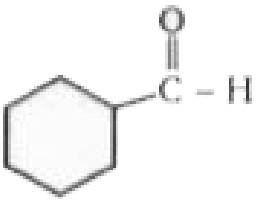


3. Product (X) of the reaction is:

A.


B.


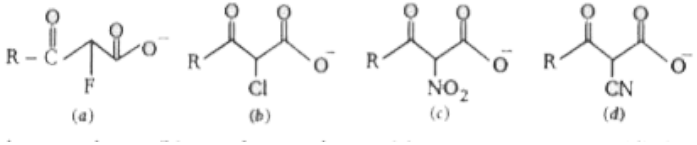
C.


D. 

Answer: A

Watch Video Solution

4. Which of the following is the correct order of decarboxylation of β-keto carboxylate anion ?



A. $a > b > c > d$

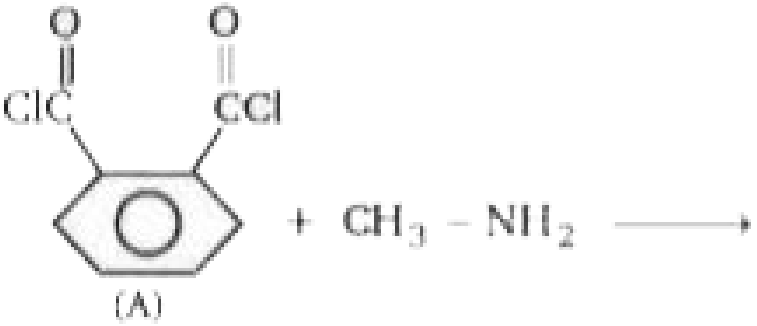
B. $c > d > a > b$

C. $c > d > b > a$

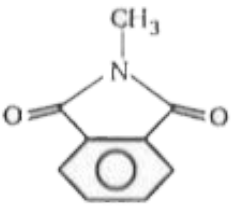
D. $d > c > a > b$

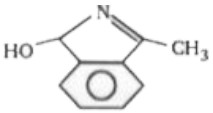
Answer: C

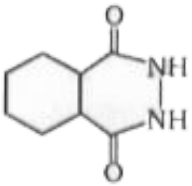
Watch Video Solution

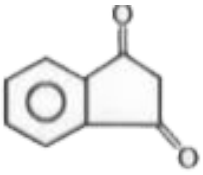


5. Product of the reaction is:

A.


B.


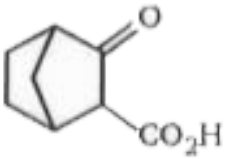
C.


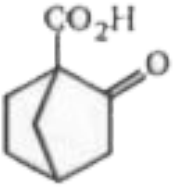
D.


Answer: A

Watch Video Solution

6. Which β- keto acid shown will not undergo decarboxylation ?

A. 

B. 

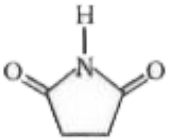
C. $Ph - \overset{\overset{O}{||}}{C} - CH_2 - CO_2H$

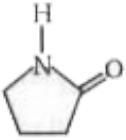
D. $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - CO_2H$

Answer: B

Watch Video Solution

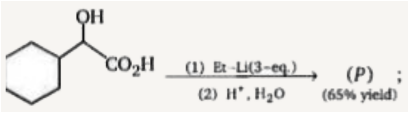
7. Choose the response that matches the correct functional group classification with the following group of structural formulas.



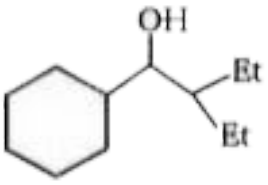


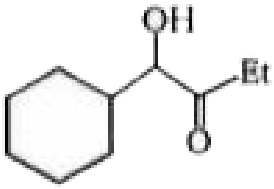
(a) Anhydride	Lactam	Lactone
(b) Lactam	Imide	Lactone
(c) Imide	Lactone	Anhydride
(d) Imide	Lactam	Lactone

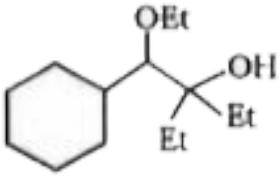
Watch Video Solution

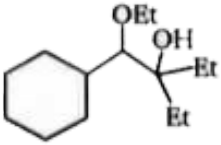
8. 

, Product (P) of the reaction is :

A. 

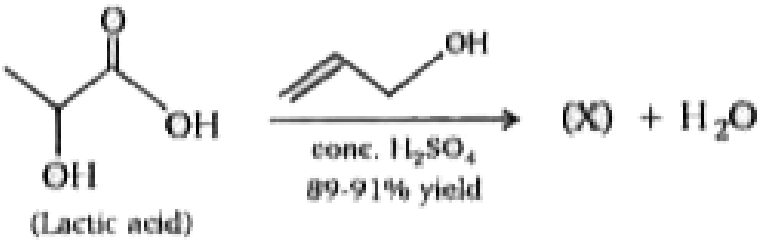
B. 

C. 

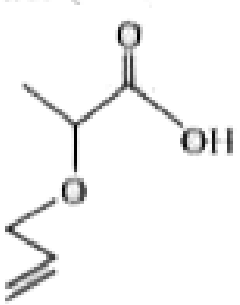
D. 

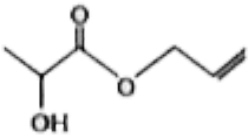
Answer: B

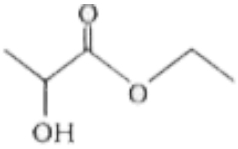
Watch Video Solution

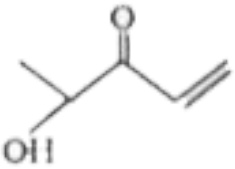
9. 

Product (X) of the reaction is :

A. 

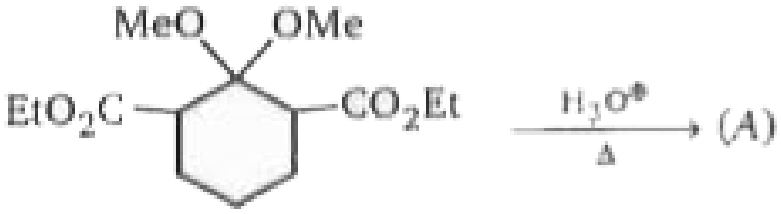
B. 

C. 

D. 

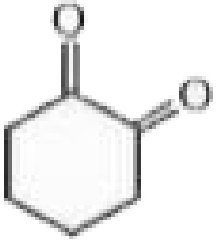
Answer: B

Watch Video Solution

10. 

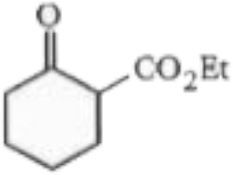
Product

(A) of the reaction is :

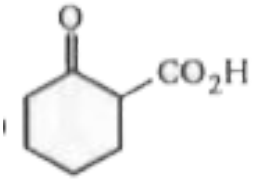


A.

B.



C.

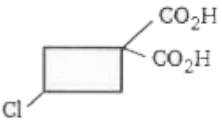
D. 

Answer: B

Watch Video Solution

11. Which of the following acid on heating gives geometrical isomers as a product ?

A. $CH_3 - \overset{OH}{\overset{|}{C}}H - CO_2H$

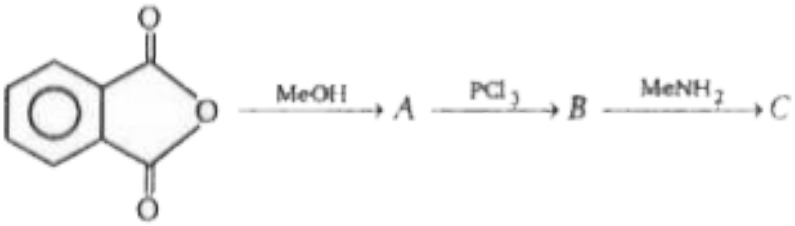
B. 

C. $CH_3 - \underset{OH}{\overset{|}{C}}H - CH_2 - CO_2H$

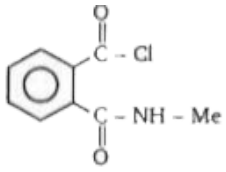
D. All of these

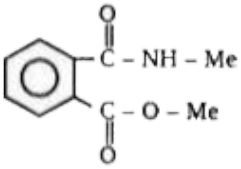
Answer: D

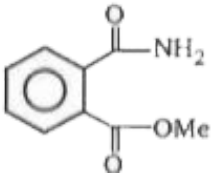
Watch Video Solution

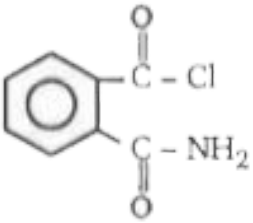
12. 

, Product (C) of the reaction is :

A. 

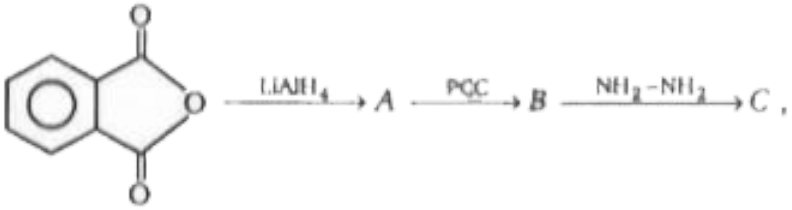
B. 

C. 

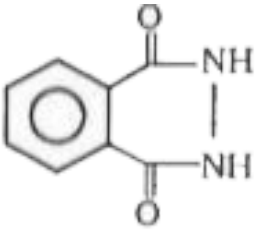
D. 

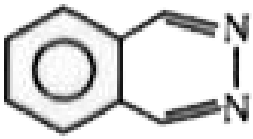
Answer: B

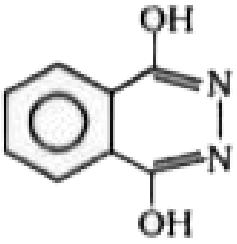
Watch Video Solution

13. 

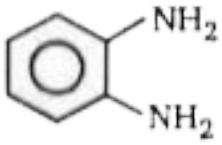
, Product (C) is :

A. 

B. 



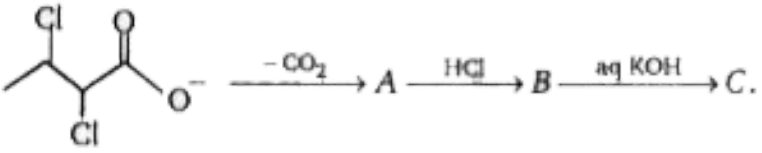
C.



D.

Answer: B

Watch Video Solution

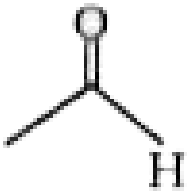
14. 

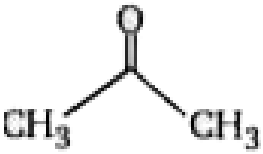
, Product

(C) is :

A. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - H$

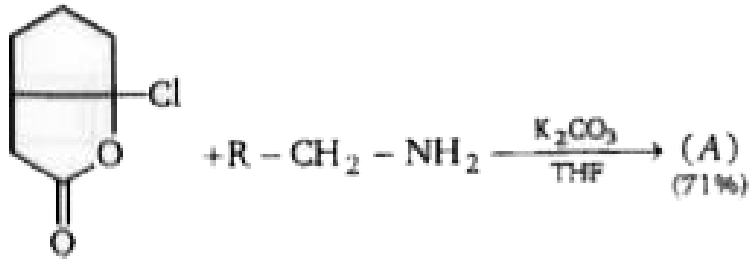
B. 

C. 

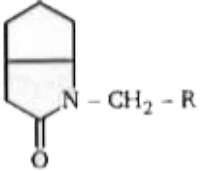
D. 

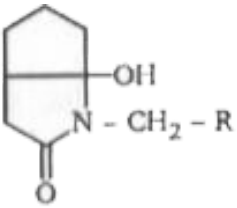
Answer: A

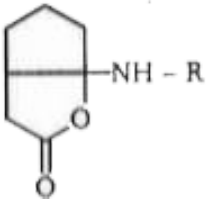
Watch Video Solution

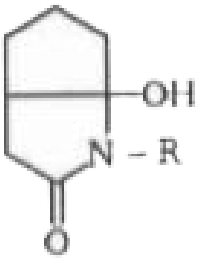
15. 

In above reaction identify major product (A) of the reaction:

A. 

B. 

C. 

D. 

Answer: B

Watch Video Solution

16. An optically active compound 'X' has molecular formula $C_4H_8O_3$. It evolves CO_2 with $NaHCO_3$. 'X' reacts with $LiAlH_4$ to give an achiral compound. 'X' is :

A. $CH_3CH_2\underset{\underset{OH}{|}}{C}HCOOH$

B. $CH_3\underset{\underset{Me}{|}}{C}HCOOH$

C. $CH_3CH\underset{\underset{CH_2OH}{|}}{C}OOH$

D. $CH_3\underset{\underset{OH}{|}}{C}HCH_2COOH$

Answer: C

Watch Video Solution

17. $CH_3-\overset{\overset{O}{||}}{C}-O-CH_2-CH_3+H-O^- \rightarrow \left(O=O^{18}\right)$ One of the product of the reaction is :

A. $CH_3-\overset{\overset{O}{||}}{C}-O-H$

B. $CH_3 - CH_2 - O - H$

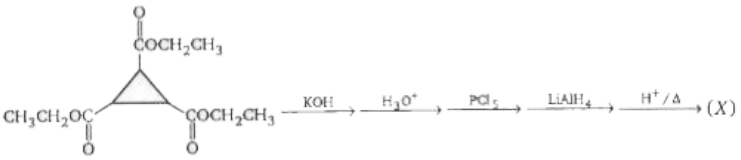
C. $CH_3 - \overset{\overset{O}{||}}{C} - O -$

D. $CH_3 - CH_2 - O -$

Answer: C

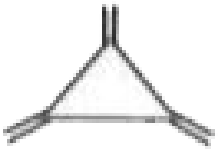
Watch Video Solution

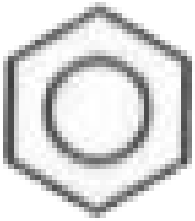
18.



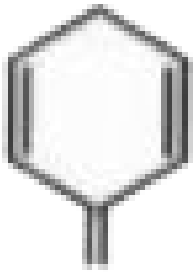
Product (X) is :

A.





B.



C.

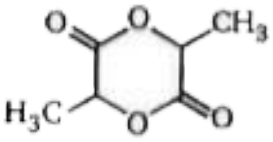
D.

Answer: B

Watch Video Solution

19. Identify final product in the following reaction,

$$CH_3\underset{OH}{\underset{|}{C}}HCOOH \xrightarrow{\Delta} \text{Product}$$

A. 

B. $CH_2 = CHCO_2H$

C. $CH_3 - \overset{\overset{O}{||}}{C}CO_2H$

D. CH_3CH_2OH

Answer: A

Watch Video Solution

20. Select the final product from this sequence of reactions

$$\text{Acetoacetic ester} \xrightarrow{NaOEt} \xrightarrow{CH_3I} \xrightarrow{NaOEt} \xrightarrow{CH_3CH_2CH_2Br}$$

A. $H_3C - \overset{\overset{O}{||}}{C} - \underset{\underset{CH_2CH_2CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - COOC_2H_5$

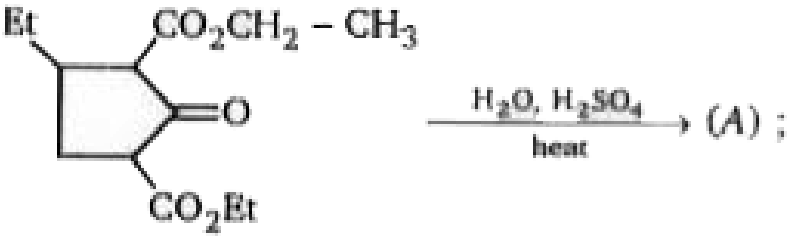
B. $H_3C - \underset{\underset{CH_2CH_2CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2COOC_2H_5$

C. $H_3C - \underset{\underset{CH_2CH_2CH_3}{|}}{\overset{\overset{H}{|}}{C}} - CH_2COOC_2H_5$

D. $CH_3CO - \underset{CH_3}{\overset{CH_3}{C}} - CH_2COOC_2H_5$

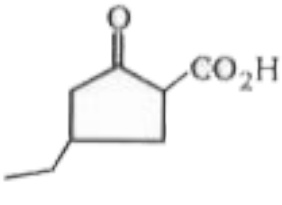
Answer: A

Watch Video Solution

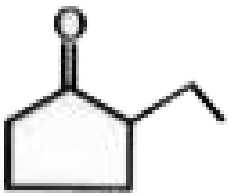
21. 

, Product

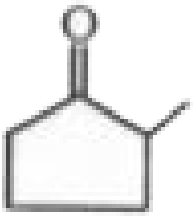
(A) will be:

A. 

B.



C.



D.

Answer: B

Watch Video Solution

22. $CH_2(CO_2Me)_2 + ? \xrightarrow[(ii)\ AcOH]{(i)\ Na} CH(CO_2Me)_3$

Which of the following reactants will complete the above reaction ?

A. $CH_2(CO_2Me)_2$

B. $(CO_2Me)_2$

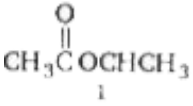
C. $Cl - CO_2Me$

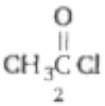
D. $COCl_2$

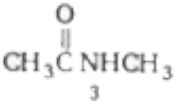
Answer: C

Watch Video Solution

23. Arrange the following in order of increasing reactivity (least to most) towards nucleophile







A. $1 < 2 < 3$

B. $3 < 1 < 2$

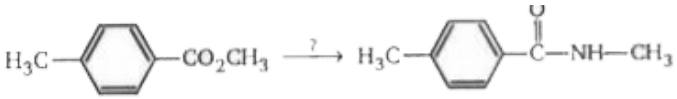
C. $1 < 3 < 2$

D. $2 < 1 < 3$

Answer: B

Watch Video Solution

24. Choose the best sequence of reactions for transformation given. Semicolons indicate separate reaction steps to be used in the order shown



A. $H_3O^+, SOCl_2, CH_3NH_2$

B. $HO^- / H_2O, PBr_3, Mg, CO_2, H_3O^-, SoCl_2, CH_3NH_2$

C. $LiAlH_4, H_2O, HBr, Mg, CO_2, H_3O^+, SOCl_2, CH_3NH_2$

D. None of these would yield the desired product.

Answer: A

Watch Video Solution

25. A key step in the hydrolysis of acetamide in aqueous acid proceeds by nycleophilic addition of :

A. H_3O^+ to $CH_3\overset{\overset{O}{||}}{C}NH_2$

B. H_2O to $CH_3\overset{\overset{+OH}{||}}{C}NH_2$

C. H_3O^+ to $CH_3\overset{\overset{+OH}{||}}{C}NH_2$

D. HO^- to $CH_3\overset{\overset{+OH}{||}}{C}NH_2$

Answer: B

Watch Video Solution

26. Which reaction is not possible for acetic anhydride ?

A.

$$\left(CH_3\overset{\overset{O}{||}}{C}\right)_2O + 2HN(CH_3)_2 \rightarrow CH_3\overset{\overset{O}{||}}{C}N(CH_3)_2 + CH_3CO_2^- + H_2$$

B.

$$\left(CH_3\overset{\overset{O}{||}}{C}\right)_2 O + CH_3CH_2OH \rightarrow CH_3\overset{\overset{O}{||}}{C}OCH_2CH_3 + CH_3CO_2H$$

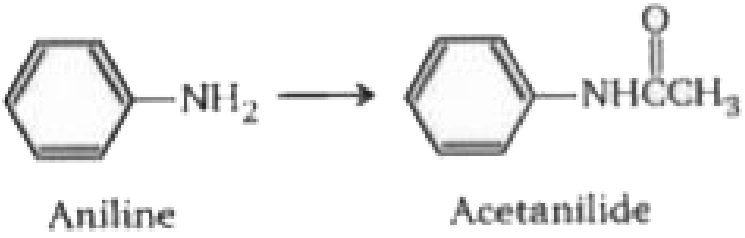
C. $$\left(CH_3\overset{\overset{O}{||}}{C}\right)_2 O + C_6H_6 \xrightarrow{AlCl_3} CH_3\overset{\overset{O}{||}}{C}C_6H_5 + CH_3CO_2H$$

D. $$\left(CH_3\overset{\overset{O}{||}}{C}\right)_2 O + NaCl \rightarrow CH_3\overset{\overset{O}{||}}{C}Cl + CH_3CO_2^- Na^+$$

Answer: D

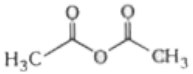
Watch Video Solution

27. All but one of the following compounds react with aniline to give acetanilide. Which of does not?

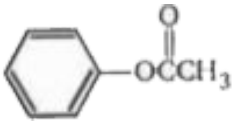


Aniline Acetanilide

A. $CH_3\overset{O}{\overset{||}{C}}-Cl$

B. 

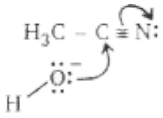
C. $CH_3\overset{O}{\overset{||}{C}}-H$

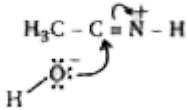
D. 

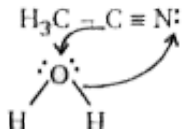
Answer: C

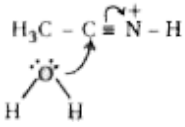
Watch Video Solution

28. Which of the following best describes the nucleophilic addition step in the acid catalyzed hydrolysis of acentonitrile (CH_3CN) ?

A. 

B. 

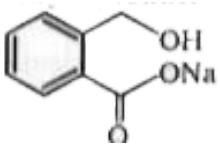
C. 

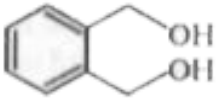
D. 

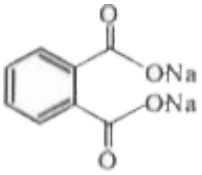
Answer: D

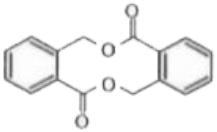
Watch Video Solution

29. The major product expected, when phthalamide is treated with NaOH, is :

A. 

B. 

C. 

D. 

Answer: C

Watch Video Solution

30. Which of following acid remains unaffected on heating ?

A. malonic acid

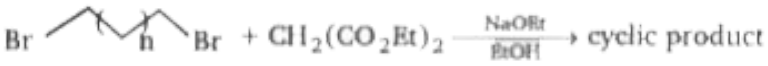
B. maleic acid

C. Fumaric acid

D. Succinic acid

Answer: C

Watch Video Solution

31. 

At which value of n the formation of six membered ring takes place ?

A. n=2

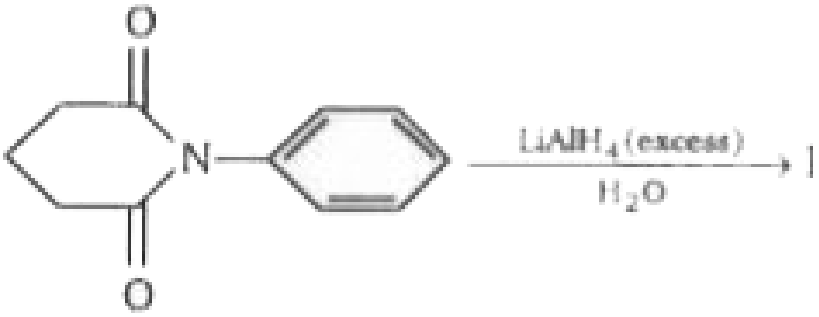
B. n=3

C. n=5

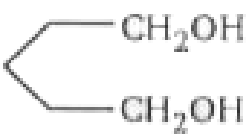
D. n=6

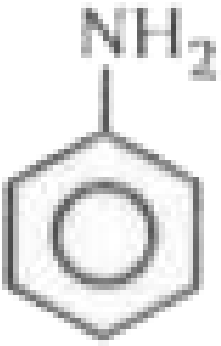
Answer: B

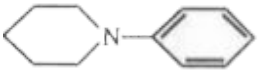
Watch Video Solution

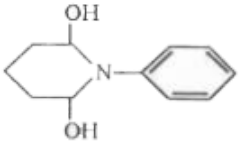
32. 

Product of the reaction is :

A. 

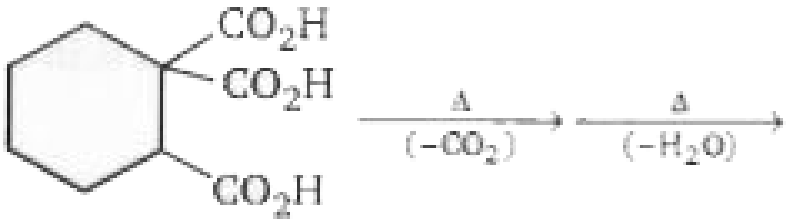
B. 

C. 

D. 

Answer: C

Watch Video Solution



33. Product of the reaction is :

A. cis-anhydride

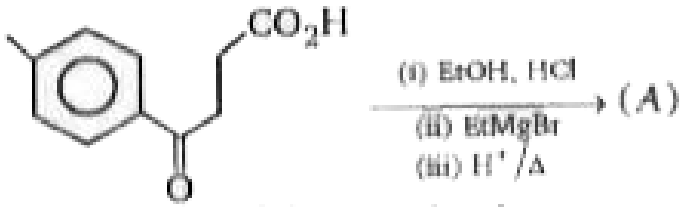
B. trans-anhydride

C. both (a) and (b)

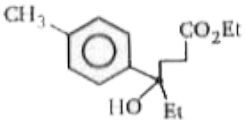
D. mono basic acid

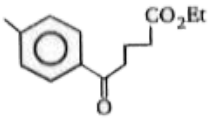
Answer: A

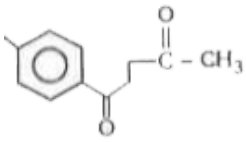
Watch Video Solution

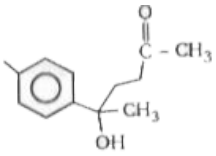
34. 

Product (A) of the reaction is:

A. 

B. 

C. 

D. 

Answer: A

Watch Video Solution

35.

$$\begin{array}{l} CH_2-O-COR \\ | \\ C \\ | \\ CH_2-O-COR_3 \end{array} \quad H-O-COR_2 + 3NaOH \rightarrow (A) + \text{salt of fatty acid(soap)}$$

Product (A) of the reaction is:

A. Ethylene glycol

B. Glycerol

C. Glyceryltrinitrate (explosive)

D. cumene hydrogen peroxide

Answer: B

Watch Video Solution

36. $CH_3 - \underset{\underset{(d)}{Et}}{CH} - OAc \xrightarrow{OH^-}$ Product of the reaction is:

A. $CH_3 - \overset{Et}{\overset{|}{C}}H - OH$

B. $CH_3 - \underset{\underset{Et}{|}}{CH} - OH$

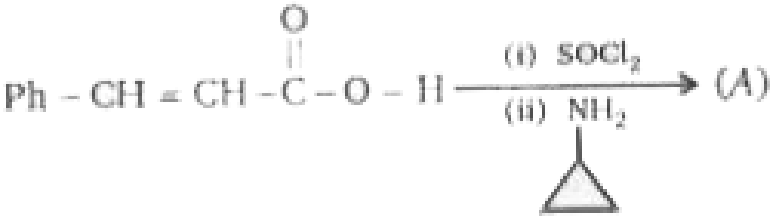
C. $CH_3 - \underset{\underset{Et}{|}}{CH} - OH$

(d) & (I)

D. $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH_2$

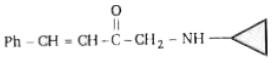
Answer: A

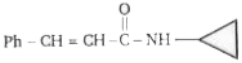
Watch Video Solution



37. , Product

(A) of the reaction is :

A. 

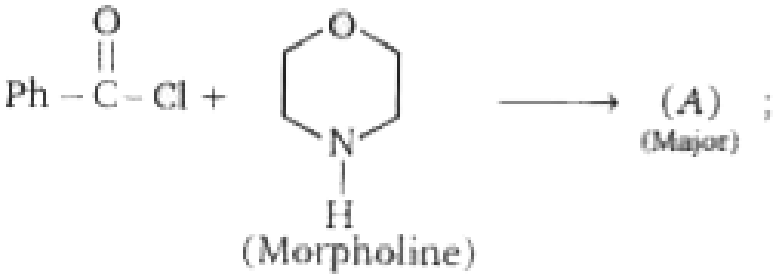
B. 

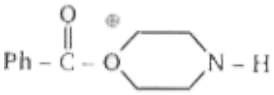
C. $Ph - CH = CH - \overset{O}{\overset{||}{C}} - H$

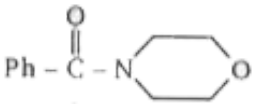
D.

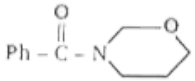
Answer: B

Watch Video Solution

38.  , Identify the product (A)

A. 

B. 

C. 

D. $Ph - \overset{O}{\overset{||}{C}} - NH_2$

Answer: B

Watch Video Solution

39. 

Above reaction is an example of :

A. Esterification

B. Saponification

C. Hydrolysis

D. Trans Esterification

Answer: D

Watch Video Solution

40. Which of the following is an intermediate formed in the reaction shown below ?

$$CH_3 - \overset{\overset{O}{||}}{C} - Cl + NH_3 \rightarrow \text{Intermediate} \rightarrow \text{product}$$

A. $CH_3 - \overset{\oplus}{N}H_3$

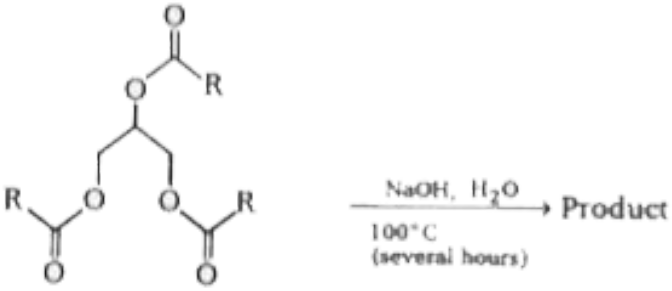
B. $CH_3 - \overset{\overset{O}{||}}{C} \oplus$

C. $Cl - \underset{\underset{\oplus NH_3}{|}}{\overset{\overset{OH}{|}}{C}} - Cl$

D. $CH_3 - \underset{\underset{\oplus NH_3}{|}}{\overset{\overset{O^-}{|}}{C}} - Cl$

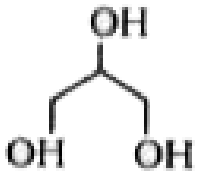
Answer: D

Watch Video Solution

41. 

Product is obtained in the above reaction is:

A. $R - CO_2Na$

B. 

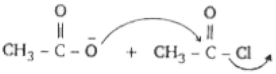
C. both (a) and (b)

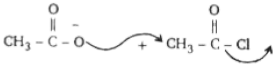
D. None of these

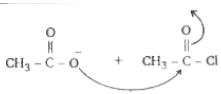
Answer: C

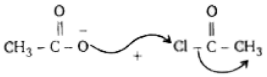
Watch Video Solution

42. The reaction of sodium acetate with acetyl chloride proceeds through which of the following mechanisms ?

A. 

B. 

C. 

D. 

Answer: C

Watch Video Solution

43. Which is the major product of the following reaction ?

$$CH_3 - \overset{O}{\overset{||}{C}} - Cl \xrightarrow{H_2S} \text{product}$$

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

B. $CH_3 - \overset{\overset{O}{||}}{C} - SH$

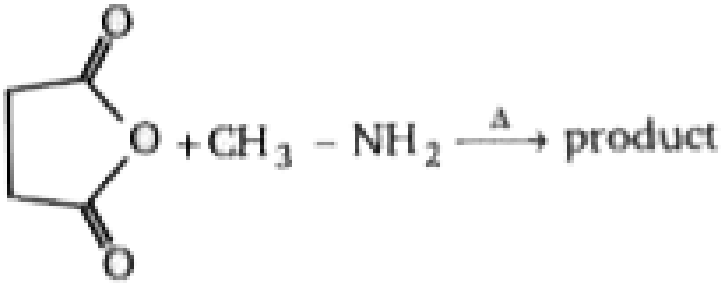
C. $CH_3 - \overset{\overset{S}{||}}{C} - Cl$

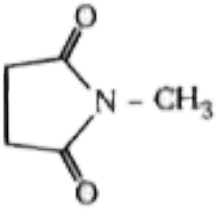
D. $CH_3 - \overset{\overset{O}{||}}{C} - S - \overset{\overset{O}{||}}{C} - CH_3$

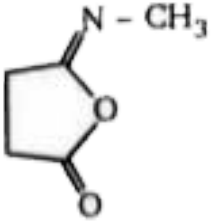
Answer: B

Watch Video Solution

44. Which is the major product of the following reaction ?



A. 

B. 

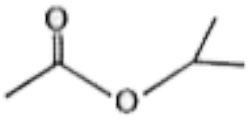
C. $HO-\overset{\overset{O}{||}}{C}-CH_2-CH_2-\overset{\overset{O}{||}}{C}-NH-CH_3$

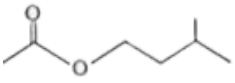
D. $CH_3-NH-\overset{\overset{O}{||}}{C}-CH_2-CH_2-\overset{\overset{O}{||}}{C}-NH-CH_3$

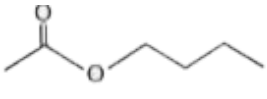
Answer: C

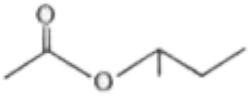
Watch Video Solution

45. Ethanoic acid + 3 methyl-1-butanol $\underset{\text{traces}H_2SO_4}{\Longleftrightarrow}(A)$, Compound (A) is :

A. 

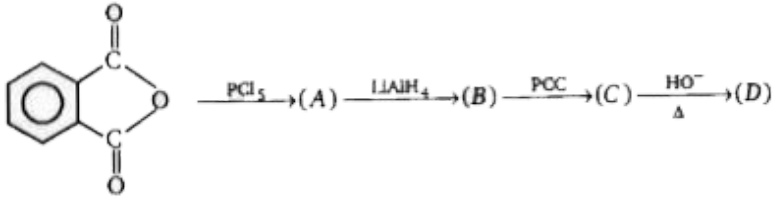
B. 

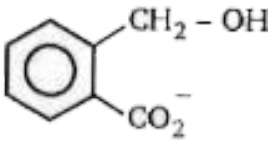
C. 

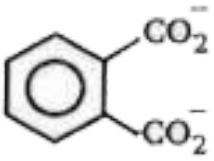
D. 

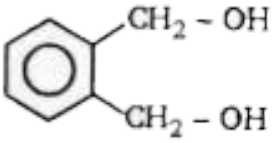
Answer: B

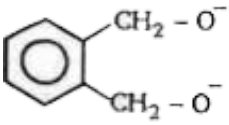
Watch Video Solution

46. 

A. 

B. 

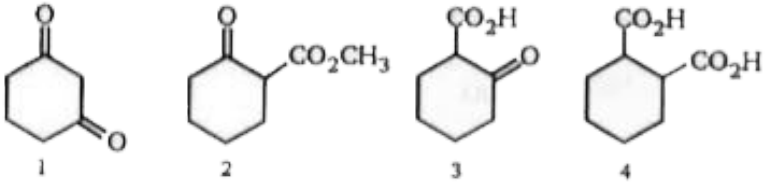
C. 

D. 

Answer: A

Watch Video Solution

47. Which of the following compounds will undergo decarboxylation on heating ?



A. 2 and 3

B. 3 and 4

C. 3 only

D. 1 and 4

Answer: C

Watch Video Solution

48. Which one of the following is not an intermediate in the generally accepted mechanism for the reaction shown below ?

$$CF_3\overset{\overset{O}{||}}{C}OH + CH_3\underset{\underset{OH}{|}}{C}HCH_3 \xrightarrow{H_2SO_4} CF_3\overset{\overset{O}{||}}{C}O\underset{\underset{CH_3}{|}}{C}HCH_3 + H_2O$$

A. $CF_3\overset{\overset{+\ddot{O}H}{||}}{C} - \ddot{O}H$

B. $CF_3\overset{\overset{:\ddot{O}:^-}{|}}{\underset{\underset{:\ddot{O}H}{|}}{C}} - \ddot{O}H - \ddot{O}CH(CH_3)_2$

C. $CF_3\overset{\overset{:\ddot{O}H}{|}}{\underset{\underset{:\ddot{O}H_2}{|}}{C}} - \ddot{O}CH(CH_3)_2$

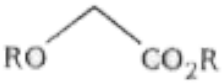
D. $CF_3 \overset{\overset{\cdot\cdot}{:OH}}{\underset{\underset{\cdot\cdot}{:OH_2}}{|}}{C} - \overset{\cdot\cdot}{\underset{\cdot\cdot}{O}}CH(CH_3)_2$

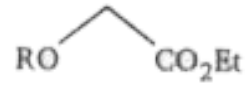
Answer: B

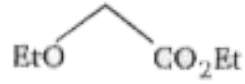
Watch Video Solution

49. , Product

A is :

A. 

B. 

C. 

D. $R - O - \overset{\overset{O}{||}}{C} - O - Et$

Answer: B

Watch Video Solution

50. Identify the compound C in the following sequence:

$$(CH_3)_2CHCH_2C \equiv N \xrightarrow{HCl, H_2O} \text{compound A} \xrightarrow[2.H_2O]{1.LiAlH_4} \text{compound B} \xrightarrow[CH_2Cl_2]{P\mathbb{C}} C$$

A. $(CH_3)_2CH\overset{\overset{O}{||}}{C}CH_3$

B. $(CH_3)_2CHCH_2\overset{\overset{O}{||}}{C}OH$

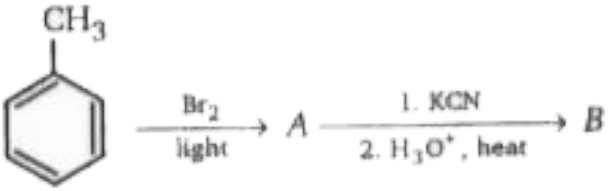
C. $(CH_3)_2CHCH_2\overset{\overset{O}{||}}{C}H$

D. $(CH_3)_2CH\overset{\overset{O}{||}}{C}CH_2OH$

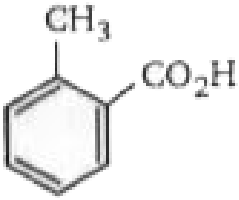
Answer: C

Watch Video Solution

51. What is the final product (B) of this sequence ?

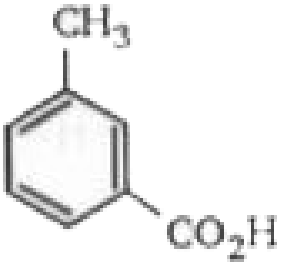


A.

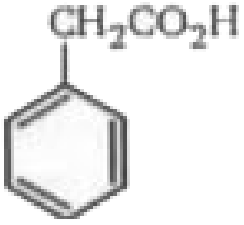


B.

C.



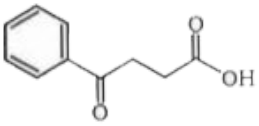
D.

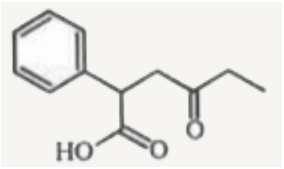


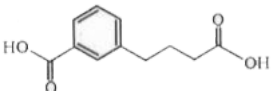
Answer: D

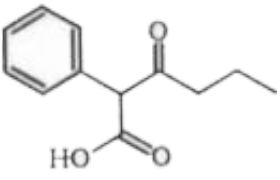
Watch Video Solution

52. Which of the following undergoes decarboxylation most readily on being heated?

A. 

B. 

C. 

D. 

Answer: D

Watch Video Solution

53. What is compound Z ?

$$CH_3CH_2CH_2Br \xrightarrow{NaCN} X \xrightarrow[\text{Heat}]{H_3O^+} Y \xrightarrow[H^+]{CH_3CH_2OH} Z$$

A. $CH_3CH = ChC\overset{O}{\overset{||}{}}OH$

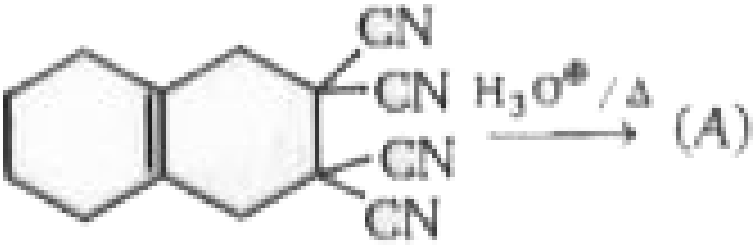
B. $CH_3CH_2CH_2CH = NOCH_2CH_3$

C. $CH_3CH_2CH_2CH(OCH_2CH_3)_2$

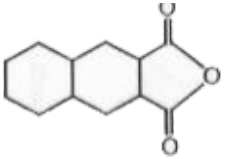
D. $CH_3CH_2CH_2\overset{O}{\overset{||}{C}}OCH_2CH_3$

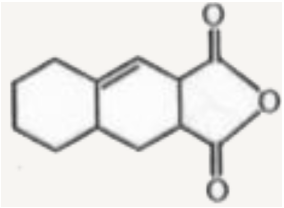
Answer: D

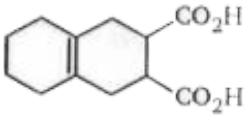
View Text Solution

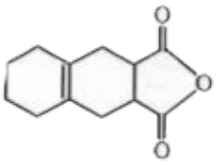


54. , Product (A) of the reaction is :

A. 

B. 

C. 

D. 

Answer: D

Watch Video Solution

55. $CH_3 - CH = CH - CH_2 - CO_2H \xrightarrow[\Delta]{} (X)$(major), Product (X) is :

A. $CH_3 - CH = CH - CH_3$

B. $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH_2$

C. $CH_3 - CH_2 - CH = CH_2$

D. $CH_3 - CH = CH_2$

Answer: C

Watch Video Solution

56. $H - O - \overset{\overset{O}{||}}{C} - (CH_2)_n - \overset{\overset{O}{||}}{C} - O - H \xrightarrow[\Delta]{}$ At what value of (n) given compound will not evolve CO_2 gas ?

A. n=5

B. n=4

C. n=2

D. n=1

Answer: C

Watch Video Solution

57. $\begin{matrix} CO_2H \\ | \\ CH_2 \\ | \\ CO_2H \end{matrix}_n$, If (n=4) then di-carboxylic acid would be known as :

A. malonic acid

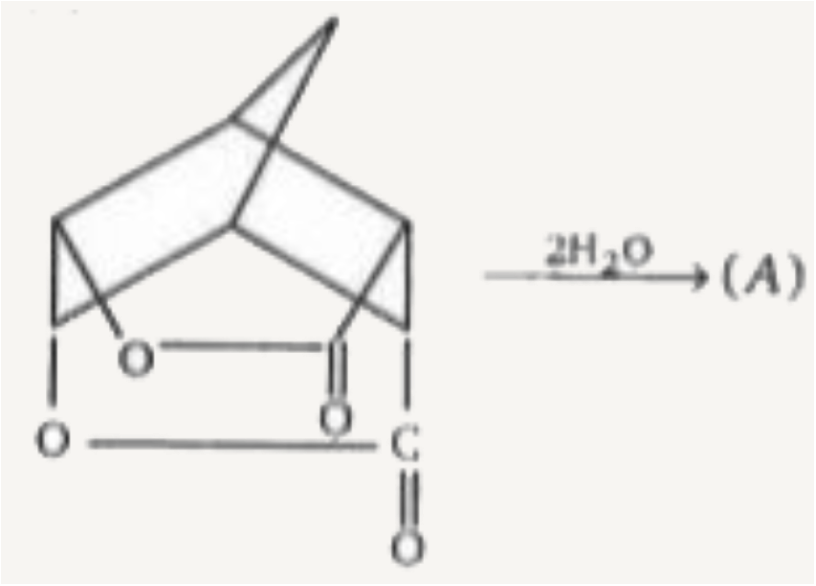
B. Succinic acid

C. Adipic acid

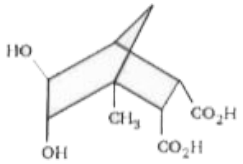
D. Oxalic acid

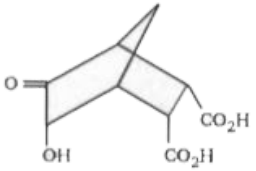
Answer: C

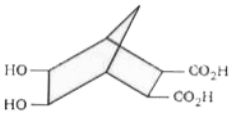
Watch Video Solution

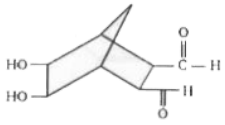
58. 

Product (A) of the above reaction is:

A. 

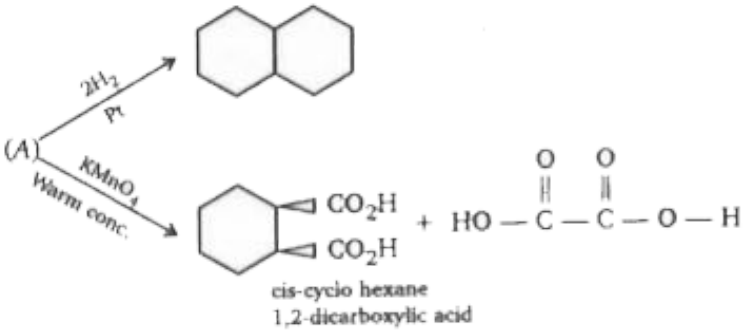
B. 

C. 

D. 

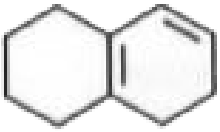
Answer: C

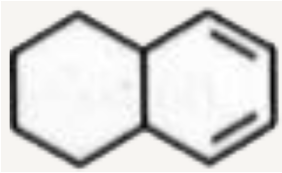
Watch Video Solution

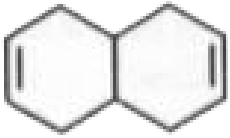


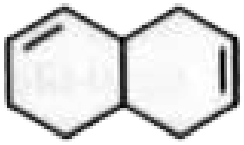
59.

Identify (A).

A. 

B. 

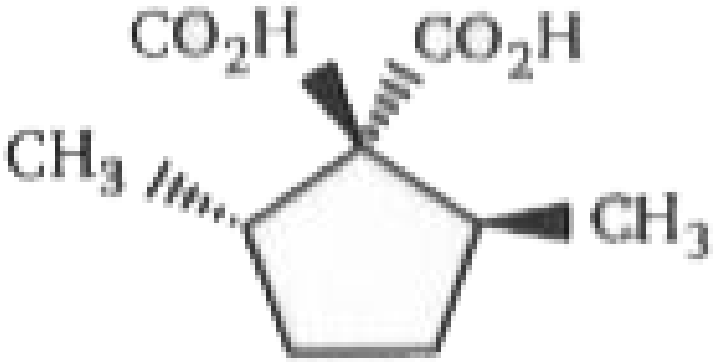
C. 



D.

Answer: B

Watch Video Solution



60. How many product will be formed when above compound undergo de-carboxylation ?

A. 0

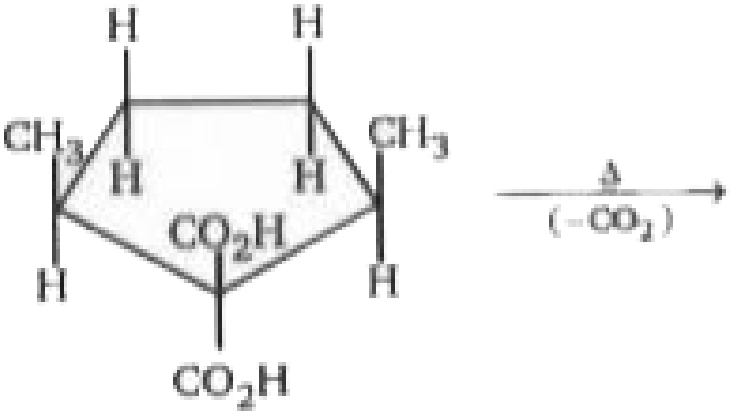
B. 1

C. 2

D. 3

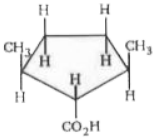
Answer: B

Watch Video Solution

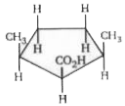


61. Product of the reaction is :

A.



B.



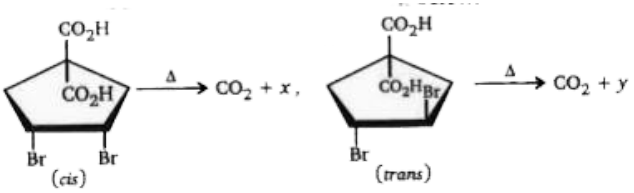
C. both (a) and (b)

D. none of these

Answer: C

Watch Video Solution

62. Products obtained in the given reactions are shown below



The number of possible products for x and y are :

A. 1,1

B. 1,2

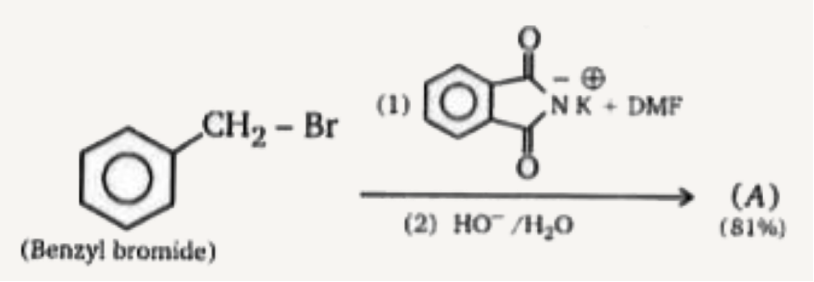
C. 2,1

D. 2,2

Answer: C

Watch Video Solution

63.



Product (A) of the above reaction is :

A. $Ph - NH_2$

B. $Ph - CH_2 - NH_2$

C. $Ph - CH_2 - NH - CO_2H$

D. $Ph - CH_2 - NH - CHO$

Answer: B

Watch Video Solution

64. Which of the following pair is C_2 epimer ?

A. D-Glucose, D-Maltose

B. D-Glucose, D-Mannose

C. D-Allose D-Ribose

D. D-Glucose, D-Arabinose

Answer: B

Watch Video Solution

65. Total number of enol possible for the compound formed during given reaction will be (including stereoisomer):

$$CH_3MgBr + CH_3CH_2 - \overset{O}{\overset{||}{C}} - Cl \rightarrow$$

A. 2

B. 3

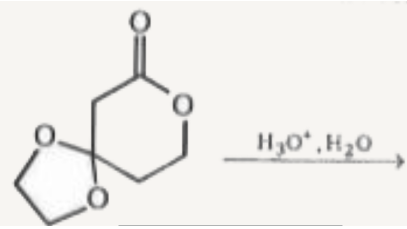
C. 4

D. 5

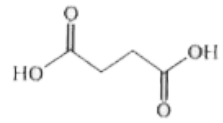
Answer: B

Watch Video Solution

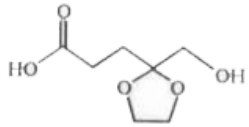
66. Which of the product of the following reaction?



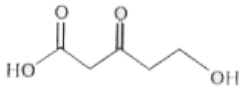
A.



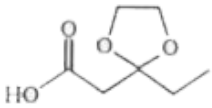
B.



C.

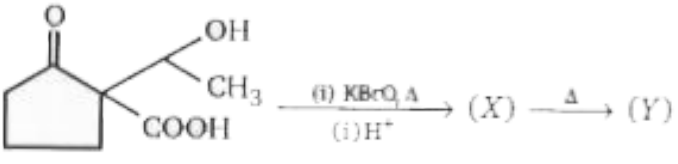


D.

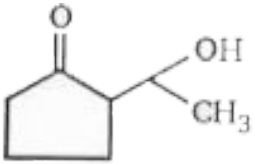


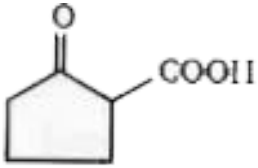
Answer: C

Watch Video Solution

67. 

Hence the product(Y) in the above sequence of reactions is :

A. 

B. 

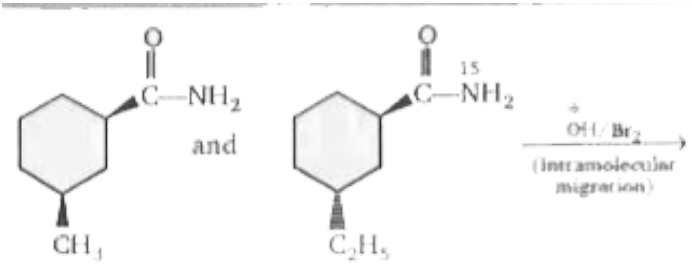
C. 

D.

Answer: C

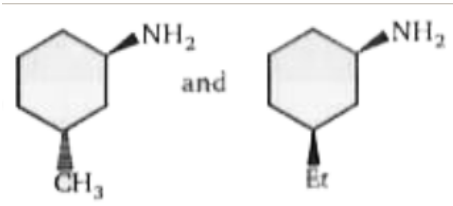
View Text Solution

68.

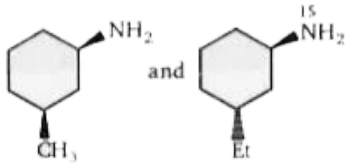


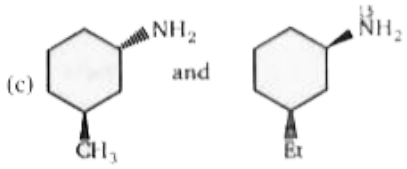
Product are :

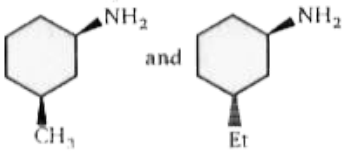
A.



B.



C. 

D. 

Answer: B

Watch Video Solution

69.

$$CH_3CH_2CH(OH)CH(CH_3)_2 + CH_3COCl \xrightarrow{\text{base}} CH_3CH_2CH(OCOCH_3$$

In the above reaction, if the reactant alcohol is a pure R-isomer the product would.

A. have configuration inverted at the chiral atom

B. be a racemic mixture

C. have the same configuration at the chiral atom

D. be optically inactive

Answer: C

Watch Video Solution

70. The order of S_N1 reactivity in aqueous acetic acid solution for the compounds

$$H_3C - \underset{(1)}{\overset{O}{\overset{||}{C}}} - CH_2 - Cl \qquad \underset{(2)}{H_3C - CH_2 - CH_2 - Cl} \qquad \underset{(3)}{(H_3C)_3C - Cl}$$

A. $1 > 2 > 3$

B. $1 > 3 > 2$

C. $3 > 2 > 1$

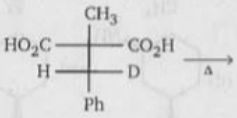
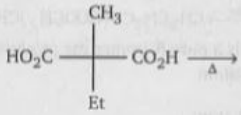
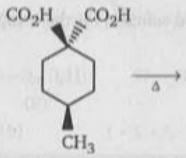
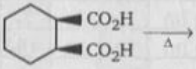
D. $3 > 1 > 2$

Answer: C

Watch Video Solution

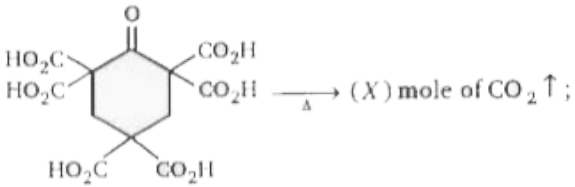
Level 2

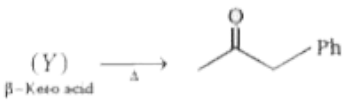
1. Match the column (I) and (II) (Matrix)

Column (I)		Column (II)	
Reaction		Products formed	
(a)		(p)	Diastereomers
(b)		(q)	Racemic mixture
(c)		(r)	Meso compound
(d)		(s)	CO_2 gas will evolve

Watch Video Solution

Level 2 Subjective Problems





1.

(Y) is including stereoisomers. Value of (X+Y) will be

Watch Video Solution