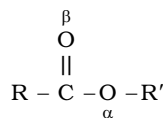


Date Planned : __ / __ / __	Daily Tutorial Sheet-4	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration : _____

46. Acid hydrolysis of an ester is reversible because :
- (A) Alcohol and acid react together to form ester
 (B) Protonation of ester makes carbonyl carbon more reactive for nucleophilic attack
 (C) Proton being strong nucleophile, favours hydrolysis
 (D) H_3O^+ is a nucleophile as well as electrophile
47. Alkaline hydrolysis of ester is irreversible because of :
- (A) Carboxylate ion (a nucleophile) cannot attack alcohol (a nucleophile)
 (B) Carboxylate is resonance stabilised
 (C) Both (A) and (B)
 (D) None the above
48. Select the INCORRECT statement.
- (A) NaOH is strong enough to remove the proton from phenols and carboxylic acid
 (B) NaHCO_3 is strong enough to remove the proton of carboxylic acids
 (C) Mixture of phenol and succinic acid can be separated using NaHCO_3
 (D) Mixture of phenol and succinic acid can be separated using NaOH
49. Fehling's solution can make distinction between following pairs : ▶
- I. $\text{CH}_3\text{COOH}, \text{HCOOH}$ II. $\text{CH}_3\text{COOH}, \text{HCHO}$
 III. $\text{C}_6\text{H}_5\text{CHO}, \text{HCHO}$ IV. $\text{CH}_3\text{CHO}, \text{HCHO}$
- Select the correct pairs :
- (A) I, II, III (B) II, III, IV (C) II, III (D) II only
50. Which has maximum value of equilibrium constant ?
- (A) $\text{CH}_3\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{CH}_3\text{COO}^- + \text{H}_3\text{O}^+$
 (B) $\text{HCOOH} + \text{H}_2\text{O} \rightleftharpoons \text{HCOO}^- + \text{H}_3\text{O}^+$
 (C) $\text{C}_6\text{H}_5\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{C}_6\text{H}_5\text{COO}^- + \text{H}_3\text{O}^+$
 (D) $\text{CF}_3\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{CF}_3\text{COO}^- + \text{H}_3\text{O}^+$
51. When salicylic acid is nitrated: ▶
- (A) $-\text{COOH}$ group is knocked out and product is picric acid
 (B) $-\text{OH}$ group is knocked out and products is *m*-nitrobenzoic acid
 (C) $-\text{OH}$ and $-\text{COOH}$ groups both are knocked out and product is 1, 3, 5-trinitrobenzoic acid
 (D) product is 2-hydroxy 5-nitrobenzoic acid
52. Which gives unsaturated acid on heating?
- (A) $\text{CH}_3\text{CH}(\text{OH})\text{CO}_2\text{H}$ (B) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{COOH}$
 (C) $\text{CH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ (D) All of these
 |
 OH

53. Which is more basic oxygen in an ester?



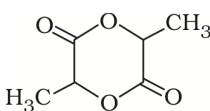
- (A) O denoted by α (B) O denoted by β
(C) Both equally (D) None of the above oxygen atoms is basic

54. An optically active compound 'X' has molecular formula $\text{C}_4\text{H}_8\text{O}_3$. It evolves CO_2 with aq. NaHCO_3 . 'X' reacts with LiAlH_4 to give an achiral compound. 'X' is :

- (A) $\text{CH}_3\text{CH}_2\underset{\text{OH}}{\text{CH}}\text{COOH}$ (B) $\text{CH}_3\underset{\text{OMe}}{\text{CH}}\text{COOH}$
(C) $\text{CH}_3\underset{\text{CH}_2\text{OH}}{\text{CH}}\text{COOH}$ (D) $\text{CH}_3\underset{\text{OH}}{\text{CH}}\text{CH}_2\text{COOH}$

55. Identify the final product in the reaction $\text{CH}_3\underset{\text{OH}}{\text{CH}}\text{COOH} \xrightarrow[\text{Warm}]{\text{H}^+}$



- (A)  (B) $\text{CH}_2 = \text{CHCO}_2\text{H}$
(C) $\text{CH}_3\text{C}(=\text{O})\text{CO}_2\text{H}$ (D) $\text{CH}_3\text{CH}_2\text{OH}$

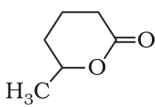
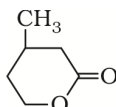
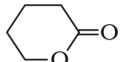
56. Ease of esterification of the following acids with CH_3OH is :

- I. HCOOH II. CH_3COOH III. $\text{CH}_3\text{CH}_2\text{COOH}$
(A) $\text{III} < \text{II} < \text{I}$ (B) $\text{I} < \text{II} < \text{III}$
(C) $\text{II} < \text{I} < \text{III}$ (D) equal

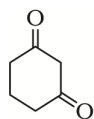
57. Ease of esterification of the following alcohols with HCOOH is :

- I. $\text{CH}_3\text{CH}_2\text{OH}$ II. $(\text{CH}_3)_2\text{CHOH}$ III. $(\text{CH}_3)_3\text{COH}$
(A) $\text{I} < \text{II} < \text{III}$ (B) $\text{III} < \text{II} < \text{I}$
(C) $\text{II} < \text{I} < \text{III}$ (D) equal

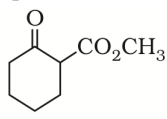
58. End product of this conversion $\text{CH}_3\overset{\text{O}}{\underset{||}{\text{C}}}\text{CH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H} \xrightarrow[2. \text{H}_2\text{O}, \text{H}^+ (\text{Heat})]{1. \text{NaBH}_4}$ is :

- (A)  (B) 
(C)  (D) $\text{CH}_3\underset{\text{OH}}{\text{CH}}\text{CH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$

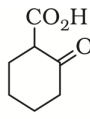
59. Which of the following compounds will undergo decarboxylation on heating?



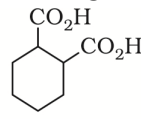
[1]



[2]



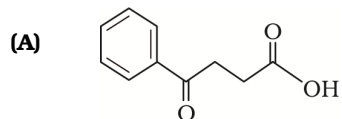
[3]



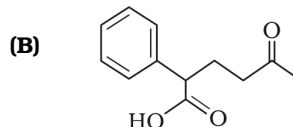
[4]

- (A) 2 and 3 (B) 3 and 4 (C) 3 only (D) 1 and 4

60. Which of the compounds yields a lactone after being reduced with sodium borohydride and heated with a mineral acid?



- (C) Both (A) and (B)



- (D) None of the above