

Date Planned : __ / __ / __	Daily Tutorial Sheet-5	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration : _____

61. Consider the following statements.

I. In both the alcohol and carboxylic acid series, the smaller anion can be better solvated, leading to a larger acidity of the corresponding conjugate acid.

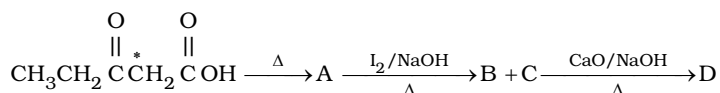
II. Acid strength of : $\text{H}-\text{C}(=\text{O})\text{OH} > \text{CH}_3-\text{C}(=\text{O})\text{OH} > (\text{CH}_3)_2\text{C}(\text{OH})-\text{C}(=\text{O})\text{OH}$

III. Acid strength of : $\text{R}-\text{C}\equiv\text{C}-\text{H} > \text{R}_2\text{C}=\text{CH}-\text{R} > \text{R}_3\text{C}-\text{H}$

Select the correct statements :

(A) I, II and III (B) I and II (C) II and III (D) I and III

62. In the following multi-step synthesis, products A, B and C are :



(A) $\text{CH}_3\text{CH}_2\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{CH}_3$, $\text{CH}_3\text{CH}_2\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{ONa}$, CH_3I (B) $\text{CH}_3\text{CH}_2\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{ONa}$, CH_3I , $\text{CH}_3\text{CH}_2\text{CH}_3$

(C) $\text{CH}_3\text{CH}_2\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{ONa}$, CH_3I , CH_3CH_3 (D) $\text{CH}_3\text{CH}_2\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{ONa}$, CH_3I , $\text{CH}_3\text{CH}_2\text{CH}_3$

63. In the following reaction, $\text{RCH}_2\text{COOH} \xrightarrow[2. \text{H}_2\text{O}]{1. \text{Br}_2/\text{P}} \text{X} \xrightarrow[\text{alc.}]{\text{NH}_3} \text{Y}$

The major amounts of X and Y are :

(A) RCHBrCONH_2 ; $\text{RCH}(\text{NH}_2)\text{COOH}$ (B) RCHBrCOOH ; $\text{RCH}(\text{NH}_2)\text{COOH}$

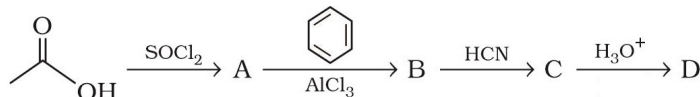
(C) RCH_2COBr ; $\text{RCH}_2\text{COONH}_4$ (D) RCHBrCOOH ; $\text{RCH}_2\text{CONH}_2$

64. Which one of the following order of acid strength is correct ?

(A) $\text{RCOOH} > \text{HOH} > \text{CH}\equiv\text{CH} > \text{ROH}$ (B) $\text{RCOOH} > \text{CH}\equiv\text{CH} > \text{HOH} > \text{ROH}$

(C) $\text{RCOOH} > \text{ROH} > \text{HOH} > \text{CH}\equiv\text{CH}$ (D) $\text{RCOOH} > \text{HOH} > \text{ROH} > \text{CH}\equiv\text{CH}$

65. In the following sequence of reactions,



Select the correct statements about D.

(A) D has chiral centre (B) D is α -hydroxy acid

(C) Both of the A and B (D) None of the above

66. Consider the following reactions:

I. $\text{CH}_3\text{NC} \xrightarrow{\text{H}_3\text{O}^+}$ II. $\text{CHCl}_3 \xrightarrow{\text{NaOH}/\text{H}_3\text{O}^+}$ III. $\text{CCl}_4 \xrightarrow{\text{H}_3\text{O}^+}$

HCOOH is obtained in:

(A) I, II and III (B) II and III (C) I and II (D) I and III

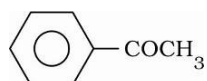
67. $\text{CH} \equiv \text{CH}$ on reaction with CH_3COOH in presence of Hg^{2+} gives X which is hydrolysed to Y. X and Y are :

	X	Y
(A)	$\text{CH}_3\text{CH}(\text{OCOCH}_3)_2$	CH_3COCH_3
(B)	$\text{CH}_3\text{CH}(\text{OCOCH}_3)_2$	CH_3CHO
(C)	CH_3CHO	CH_3CHO
(D)	$\text{CH}_3\text{CH}(\text{OCOCH}_3)_2$	$\text{CH}_3\text{CH}_2\text{CHO}$

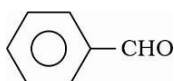
68. Carboxylic acid undergoes ionization due to :

(A)	hydrogen bonding	(B)	absence of α -hydrogen
(C)	high reactivity of α -hydrogen	(D)	resonance stabilization of carboxylate ion

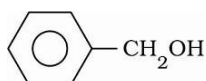
69. -COOEt + $\text{CH}_3\text{COOEt} \xrightarrow[2. \text{H}_3\text{O}^+]{1. \text{EtONa}} \text{A} \xrightarrow[\Delta]{\text{OH}^-/\text{H}^+} \text{B}$ B is:



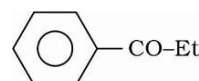
(A)



(B)



(C)



(D)

- *70. Which of the following statements is(are) TRUE about HCOOH ?

- (A) It is a stronger acid than CH_3COOH
 (B) It forms formyl chloride with PCl_5 at room temperature
 (C) It gives CO and H_2O on heating with conc. H_2SO_4
 (D) It reduces Tollen's reagent

71. $\text{H}_3\text{C}-\text{C} \equiv \text{CH} \xrightarrow{\text{CH}_3\text{MgBr}} \text{CH}_4 + \text{A} \xrightarrow[\text{H}_3\text{O}^+]{\text{CO}_2} \text{B}$

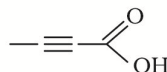
B will be :



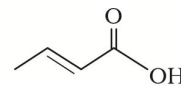
(A)



(B)



(C)



(D)

72. The reactivity of carboxylic acid derivatives towards nucleophilic acyl substitution is :

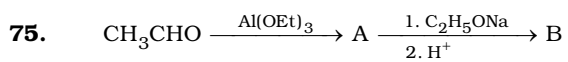
I.	RCOCl	II.	$(\text{RCO})_2\text{O}$	III.	RCOOR'	IV.	RCONH_2
(A)	$\text{I} > \text{II} > \text{III} > \text{IV}$			(B)	$\text{I} < \text{II} < \text{III} < \text{IV}$		
(C)	$\text{I} < \text{III} < \text{II} < \text{IV}$			(D)	$\text{IV} < \text{I} < \text{III} < \text{II}$		

73. Diazotisation of aniline is done using NaNO_2 and HCl at low temperature. Excess of HNO_2 is destroyed by the addition of :

(A)	NaOH	(B)	NH_4OH	(C)	NH_2-NH_2	(D)	NH_2CONH_2
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- *74. Select CORRECT statement(s).

- (A) Urea is an amide of carbamic acid
 (B) Urea is excreted in the urine as the end product of protein metabolism
 (C) Urea is a diamide
 (D) CH_3CN is named as methane nitrile



A and B are respectively :

- (A) $\text{CH}_3\text{COOC}_2\text{H}_5$, $\text{CH}_3\text{COCH}_2\text{COOC}_2\text{H}_5$ (B) CH_3COOH , $\text{CH}_3\text{COOC}_2\text{H}_5$
(C) CH_3COOH , $\text{CH}_3\text{COCOOC}_2\text{H}_5$ (D) $\text{CH}_3\text{COOC}_2\text{H}_5$, $\text{CH}_3\text{COCH}_2\text{COOH}$