

Date Planned : __ / __ / __	Daily Tutorial Sheet-3	Expected Duration : 30 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration : _____

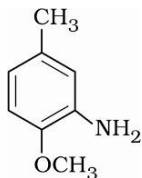
31. The most reactive compound towards formation of cyanohydrin on treatment with HCN followed by acidification is :
- (A) benzaldehyde (B) p-nitrobenzaldehyde
(C) p-methoxybenzaldehyde (D) p-hydroxybenzaldehyde

32. Which factor(s) will increase the reactivity of $>C=O$ group ?

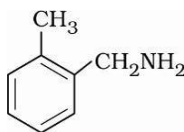
- I. Presence of a group with positive inductive effect.
II. Presence of a group with negative inductive effect.
III. Presence of large alkyl group.

- (A) Only I (B) Only II (C) I and III (D) II and III

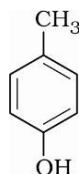
33. An organic compound reacts with chloroform in alkaline medium to give the compound A which adds hydrogen cyanide to form the compound B. The latter on acidic hydrolysis gives chiral carboxylic acid. The structure of the organic compound is :



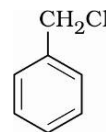
(A)



(B)



(C)



(D)

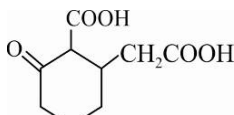
34. The increasing order of the rate of HCN addition to compound A–D is :

- (a) HCHO (b) CH_3COCH_3 (c) $PhCOCH_3$ (d) $PhCOPh$
(A) $a < b < c < d$ (B) $d < b < c < a$ (C) $d < c < b < a$ (D) $c < d < b < a$

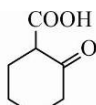
35. In the reaction, $X + NH_3 \longrightarrow (CH_3CHNH)_3$; X is :

- (A) acetaldehyde ammonia trimer (B) para-formaldehyde
(C) formaldehyde (D) acetaldehyde

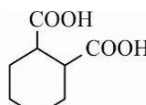
- *36. The compound that undergoes decarboxylation readily by heating :



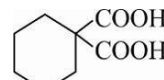
(A)



(B)



(C)

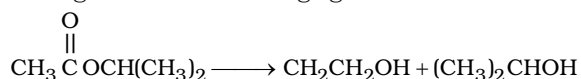


(D)

37. An organic compound 'A' burns with a sooty flame. It shows positive iodoform test. It does not answer Tollen's test. The compound A is :

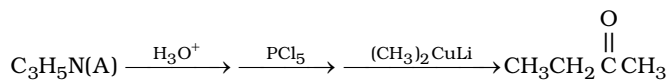
- (A) Acetophenone (B) Acetone
(C) Salicylic acid (D) Benzaldehyde

- *38. In the following reduction, reducing agent used is :



- (A) Na / EtOH (B) $LiAlH_4$ (C) $NaAlH_4$ (D) $H_2 / Pd - BaSO_4$

39. Identify A in the following sequence of reactions :




- (A) $\text{CH}_3\text{CH}_2\text{CN}$ (B) $\text{CH}_3\text{CH}_2\text{NC}$
(C) $\text{CH}_2 = \text{CHCH} = \text{NH}$ (D) None of these

40. Propanal reacts with methanamine in presence of H^+ ions forming :

- (A) anti-imine (B) syn-imine
(C) Both (A) and (B) (D) None of the above

*41. Which of the following pairs of reactants can form an enamine ?

- (A) $\text{CH}_3\text{CH}_2\overset{\text{O}}{\underset{\text{||}}{\text{CH}}} + [(\text{CH}_3)_2\text{CH}]_2\text{NH}$ (B) $(\text{CH}_3)_3\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{CH} + (\text{CH}_3)_2\text{NH}$
(C)  + $(\text{CH}_3)_2\text{NH}$ (D) $\text{CH}_3 - \text{CHO} + \text{CH}_3\text{NH}_2$

42. An organic compound X gives a red precipitate on heating with Fehling's solution. Which one of the following reactions yields X as a major product ?

- (A) $\text{HCHO} \xrightarrow[\text{(ii) H}_2\text{O}]{\text{(i) CH}_3\text{MgI}}$ (B) $\text{C}_2\text{H}_5\text{Br} + \text{AgOH} \xrightarrow{\Delta}$
(C) $2\text{C}_2\text{H}_5\text{Br} + \text{Ag}_2\text{O} \xrightarrow{\Delta}$ (D) $\text{C}_2\text{H}_2 + \text{H}_2\text{O} \xrightarrow[60^\circ\text{C}]{40\% \text{ H}_2\text{SO}_4, 1\% \text{ HgSO}_4}$

43. Benzaldehyde and acetone can be best distinguished using :

- (A) Fehling's solution (B) sodium hydroxide solution
(C) 2, 4-DNP (D) Tollen's reagent

*44. Identify the reaction which is used to obtain β - hydroxy carbonyl compounds :

- (A) Condensation reaction (B) Aldol condensation
(C) Claisen-Schmidt reaction (D) Cannizzaro reaction

45. An aromatic compound 'X' with molecular formula $\text{C}_9\text{H}_{10}\text{O}$ gives the following chemical tests.

- I. Forms 2, 4-DNP derivative
II. Reduces Tollen's reagent
III. Undergoes Cannizzaro reaction and
IV. On vigorous oxidation 1, 2-benzenedicarboxylic acid is obtained. X is :

