



# **CHEMISTRY**

# **BOOKS - SAI CHEMISTRY (TELUGU ENGLISH)**

# **ORGANIC CHEMISTRY-II**

# Mcq

1. Phenol on oxidation in air gives

A. Quinone

**B.** Catechol

C. Resorcinol

D. o-cresol

# Answer: a



**2.** Identify the reagents A and B respectively in the following reactions.

 $CH_5COOH \stackrel{A}{\longrightarrow} CH_5COCI \stackrel{B}{\longrightarrow} C_5CHO$ 

A.  $SOCI_2$ ,  $H_2 \,/\, Pd - BaSO_4$ ,  $SOCI_2$ 

B.  $H_2/Pd - BaSO_4$ ,  $SOCI_2$ ,

C.  $SOCI_2, H_2O_2$ 

D.  $SOCI_2, OsO_4$ 

## Answer: a



**3.** Predict respectively 'X' and 'Y' in the following reactions.  $Ar-NH_2 \xrightarrow{X} Ar - \overset{+}{N} \equiv N - cI \xrightarrow{Y} Ar - CI$ 

A.  $NaNO_3$  and  $CI_2$ 

B. )  $NaNO_3 - HCl$  and HCl

C.  $NaNO_2 - HCl$  and Cu//HCI

D.  $NaNO_2 - HCl$  and  $NaNH_2$ 

## Answer: c

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4. Identify Z in the following reaction











# Answer: c

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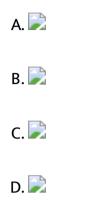
5. Which intermediate is formed in the Reimer-Tiemann reaction?

- A. Aldehyde
- B. Carbanion
- C. Substituted benzal chloride
- D. Carbanion

# Answer:



6. Which one of the following is an acetal?



# Answer: a

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7. 
$$H_3CCH_2CO_2 \xrightarrow{P_2O_5} X \xrightarrow{H_2O} Y \xrightarrow{SOCL_2} Z$$
identify X,Yand Z.

A.  $H_2C = CHCO_2H$   $HOH_2CCHOHCO_2H$ 

 $HOH_2CCHOHCOCI$ 

B.  $(H_3CCH_2CO)_2O$   $H_3CCH_2CO_2H$   $H_3CCH_2COCI$ 

# $\mathsf{C.} (H_3 CCO)_2 O \qquad H_3 CCO_2 H \quad CICH_2 COCI$

# $\mathsf{D}. (H_3 CCH_2 CO)_2 O H_3 CCO_2 H H_3 CCOCI$

Answer: b

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# 8.

 $H_3CCONH_2+Br_2+4NaOH
ightarrow Y+Na_2CO_3+2NaBr+2H_2O$ 

. What is Y in the reaction?

A.  $H_3CCH_2NH_2$ 

 $\mathsf{B}.\,H_3CNH_2$ 

 $\mathsf{C.}\,H_3CCOBr$ 

D.  $HCONH_2$ 

Answer: b



- 9. What isZ in the following reaction sequence?
  - A.  $C_6H_5CO_2H$
  - $\mathsf{B.}\, C_6H_5OH$
  - $\mathsf{C.}\, C_6H_3COH$
  - D.  $C_6H_6$

# Answer: c

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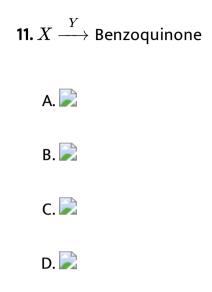
10. 
$$C_{6}H_{5}-O-CH_{2}CH_{3} \xrightarrow{\mathrm{HI}}{\Delta}Y+Z$$

identify Y and Z in the above reaction.









# Answer: c



**12.** 
$$CH_2MgBr + CO_2 \xrightarrow{\operatorname{Dry \ ether}} Y \xrightarrow{H_3O} Z$$

# A. Ethyl acetate

B. Acetic acid

C. Propanoic acid

D. Methyl acetate

Answer: b

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**13.** Assertion (A)k NH, group of aniline is ortho, para directing in electrophilic substitutions.

Reason (R) NH, group stabilises the arenium ion formed by the ortho, para attack of the electrophile.

The carrect answer is

A. Both (A) and (R) are correct, (R) is the correctaplanation of (A)

B. Both (A) and (R) are correct, (R) is the not correct explanation

of (A)

C. (A) is correct, but (R) is correct

D. (A) is not correct, but (R) is correct

# Answer: a



14. Heating chloroform with aqueous sodium bydroxide solution

forms

A. Sodium acetate

B. Sodium Oxalate

C. Sodium formate

D. Chloral

Answer: c

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15. The products formed in the reaction of phenol with Br, dissolved in  $CS_2$  at  $0^\circ C$ are

A. o-bromo, m-bromo and p-bromophenols

B. o-bromo and p-bromophenols

C. 2,4,6-tribromo and 2,3,6-tribromophenols

D. 2,4-dibromo and 2,6-dibromophenols

Answer: b

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16. The structure of PCC is

A.  $C_6H_5NHCrO_2Cl^{\Theta}$ 

B.  $C_6H_5NHCrO_3Cl^{\Theta}$ 

C.  $C_5H_5NHCrO_2Cl^{\Theta}$ 

D.  $C_5H_5NHCrO_3Cl^{\Theta}$ 

# Answer: d

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# 17. Identify X and Y in the following reaction











Answer: c

18. 📄			
A. 📄			
в. 📄			
С. 📄			
D. 📄			
Answer: c			
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**19.** What is the product obatined in the reaction of acetaldehyde with semicarbazide?



 $\mathsf{B}.\,H_3C-CH=N-NH_2$ 

$$\mathsf{C}.\,H_3C-CH=N-OH$$

D. 📄

## Answer: a



**20.** Compund  $A(C_3H_6O)$  undergoes following reaction to forms B

and C. identify A,B nad C

 $C \xleftarrow{Zn-Hg/HCl}{C_3H_6O} \xrightarrow{I_2/NaOH} B$ 





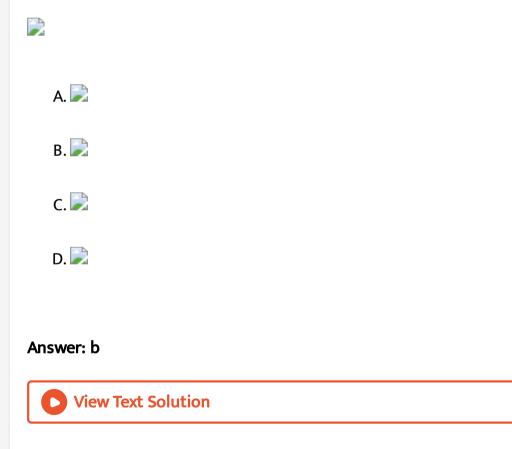




# Answer: a



**21.** Identify the product in the following reaction.



22. The order of reactivity of phenol(I),nitrobenzene(II) and benzene

(III)towards nitration is

A. (III)gt (I) gt (II)

B. (II) gt (III) gt (I)

C. (I) gt (III) gt (II)

D. (I) gt (II) gt (III)

Answer: c

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23. The reagent used in the Wolff-Kishner reduction is

A.  $H_2 - NH_2/KOH$ 

 $\mathsf{B.}\,H_2\,/\,Ni$ 

 $\mathsf{C.}\,Sn\,/\,HCI$ 

D.  $LiAIH_4$ 

Answer: a

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**24.** The  $pK_a$  values of four carboxlic acids are 4.76, 4.19, 0.23 and 3.41 respectively. The  $pK_a$  value of strogest carboxlic acids among them is

A. 4.19

B. 3.41

C. 0.23

D. 4.76

Answer: c

**25.** Nitrobenzene on reduction using zine in alkaline medium results inX. The number of sigma ( $\sigma$ ) and pi (pi)bonds inX is

A.  $24\sigma$ ,  $7\pi$ 

B.  $24\sigma$ ,  $6\pi$ 

C.  $28\sigma$ ,  $7\pi$ 

D.  $27\sigma$ ,  $6\pi$ 

# Answer: d



**26.** The conversion of O-acylated phenol in presence of  $AlCl_2$  to C-acylated phenol is an example for this type of organic reaction .

- A. Addition reaction
- B. Substitution reaction
- C. Molecular rearrangement
- D. Elimination reaction

# Answer: c



27. Identify the product (A) of the following reaction.

 $C_2 - O - C_2 H_5 + CO \xrightarrow{BF_3/150^\circ C} A \xrightarrow{500atm} A$ 

A. Ethyl alcohol

B. Ethyl propionate

C. Ethanoic acid

D. Ethyl acetate

# Answer: b Watch Video Solution

**28.** Which one of the following gives yellow precipitate with iodine

and NaOH solution?

A.  $CH_3-CHO$ 

B.  $C_6H_5COC_6H_5$ 

C. HCHO

D.  $CH_3OH$ 

Answer: a

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**29.** Reduction of nitrobenzene with Zn and alcoholic KOH solution results in the formation of the following compound

A. Hydrazobenzene

B. Azobenzene

C. Aniline

D. Phenyl hydroxyl amine

Answer: a

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**30.** In Gattermann reaction, a diazonium group is replaced by X using Y. X and Y are





D. 📄

# Answer: a



**31.** What are X and Y in the following reaction sequence ?  $C_2H_5 \xrightarrow{CI_2} X \xrightarrow{CI_2} Y$ 

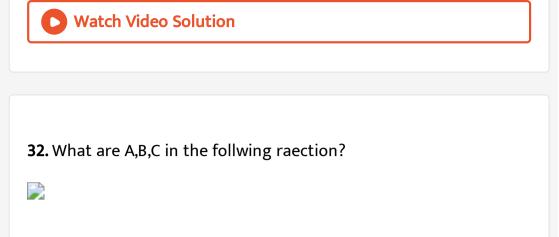
A.  $C_2H_5CI, CH_3CHO$ 

 $\mathsf{B.}\,CH_3CHO_2CH_3CO_2H$ 

 $C. CH_3 CHO, CCI_3 CHO$ 

D.  $C_2H_5CI$ ,  $CCI_3CHO$ 

Answer: c



A. 📄

В. 📄

С. 📄

D. 📄



**33.** Parkinson's disease is linked to abnormalties in the levels of dopamine in the body. The structure of dopamine is

A.	
В.	





# Answer: c



# 34. Consider the following reaction,

 $C_2H_5CI + AgCN \xrightarrow{EtOH\,/\,H_2O} X$ (major)

which one of the following statements is true for X ?

I. It gives propionic acid on hydrolysis

- II . It has an ester functional group
- III . It has a nitrogen linked to ethyl carbon
- IV. It has a cyanide group

A. IV

B. III

C. II

D. I

Answer: b

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**35.** The synthesis of crotonaldeyde from acetaldehyde is an example of.... Reaction.

A. Nucleophilic addition

**B.** Elimination

C. Electrophilic adition

D. Nucleophilic addition-elimination

# Answer: b

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**36.** The correct order of reactivity of hydrogen halides with ethyl alcohol is

A. HFgtHClgtHBrgtHI

B. HClgtHBrgtHFgtHI

C. HBrgtHClgtHF

D. HIgtHBrHClgtHF

Answer: d

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**37.** The IUPAC name of  $C_2H_5$ 

A. Ethoxypropane

B. 1,1-dimethyl ether

C. 2-ethoxy isopropane

D. 2-ethoxy propane

Answer: d

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**38.** The function groups present in *salol* are

A.  $-NH_2$ and -OR

B. OH and -COOH

 $\mathsf{C}.-NH_2$  and COOH

D. OH and -COOR

# Answer:



# 39. Hybridisation of oxygen in diethyl ether is

A. sp

 $\mathsf{B.}\, sp^2$ 

 $\mathsf{C.}\, sp^2$ 

D.  $sp^3d$ 

# Answer: c

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**40.** Which of the following compounds when heated with CO at  $150^{\circ}$ C and 500 atm pressure in presence of  $BF_3$  forms ethyl propionate?

A.  $C_2H_5OH$ 

B.  $CH_3OCH_3$ 

 $\mathsf{C.}\, C_2H_5OC_2H_5$ 

D.  $CH_3OC_2H_5$ 

# Answer: c

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**41.** When compound X is oxidised by acidified potassium dichromate, compound Y is formed. Compound Y on reduction with  $LiAIH_4$  gives X.X and Y respectively are

A.  $C_2H_5OH, CH_3COOH$ 

 $\mathsf{B.}\,CH_3COCH_3CH_3COOH$ 

 $\mathsf{C.}\, C_2H_5OH,\, CH_3COCH_3$ 

D.  $CH_3CHO, CH_3COCH_3$ 

Answer: a



42. Ethyl chloride reacts with sodium ethoxide to form a compound

A. Which of the following reactions also yields A?

A.  $C_2H_5CI, KOH(alc), \Delta$ 

B.  $2C_2H_5OH$ , conc  $H_2SO_4140^{\,\circ}C$ 

C.  $C_2H_5CI$ , Mg (dry ether)

D.  $C_2H_2dilH_2SO_4, HgSO_4$ 

# Answer: b



**43.** 
$$CH_3CH_2Oh \xrightarrow[step-1]{CI_2} CH_3CHO \xrightarrow[step-2]{3GI_2} CI_3CCHO$$

In above reactions the role of  $CI_2$  in step-1 and step-2 respectively

is

A. Oxidation, chlorination

B. Reduction, chlorination

C. Oxidation, addition

D. Reduction, substitution

## Answer: a



44. Identify A and B in the following reactions:

 $A \xrightarrow{oq.NaOH} C_2H_5Oh \xrightarrow{AgOII} B$ 

A.  $A=C_2H_2,B=C_2H_6$ 

B. 
$$A=C_2H_5CI, B=C_2H_4$$

C.  $A=C_2H_4$ ,  $B=C_2H_5CI$ 

D. 
$$A=C_2H_5CI, B=C_2H_5CI$$

# Answer: d



45. In which of the following reactions the product is an ether?

A.  $C_{6}H_{6}+CH_{3}COCI/anhydrousAICI$ 

B.  $C_2H_5CI + aq. KOH$ 

 ${\sf C.} \, C_6H_6 + C_6H_5COCI/anhydrousAICI$ 

D.  $C_2H_5CI+C_2H_5ONa$ 

# Answer: d



46. In the reaction,

$$C_{2}H_{5}OH \xrightarrow[300^{\circ}C]{Cu} X$$

The molecular formula of X is

A.  $C_4H_6O$ 

 $\mathsf{B.}\, C_4 H_{10} O$ 

 $\mathsf{C.}\, C_2 H_4 O$ 

D.  $C_2H_6$ 

Answer: c



47. Which one of the following is a secondary alcohol?

A. 2-methyl - 1-propanol

- B. 2 methly-2-propanol
- C. 2-butanol
- D. I-butanol

Answer: c

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48. The IUPAC name of an unsymmetrical ether with the molecular

formula,  $C_4 H_{10} O$  is

A. Ethoxy propane

B. Methoxyethane

C. Ethoxyethane

D. Methoxy propane

Answer: d

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49. Identify A and B in the following reaction

 $C_2H_5CI \xrightarrow{A} C_2H_5OH \xleftarrow{B} C_2H_5CI$ 

A. A -aqueous KOH, B-AgOH

B. A = alcoholic  $KOH / \Delta$ , B= aqueous NaOH

C. A = aqueous NaOH, B = $AgNO_2$ 

D. A- $AgNO_2$  B- $KNO_2$ 

Answer: a

50. In the reaction,

 $C_2H_5OC_2H_5+CO \xrightarrow{BF_3} X \ {}^{150^\circ C,500 {
m atm pressure}} X$ 

What is X?

A. Diethyl carbonate

B. Ethyl carbonate

C. Diethyl peroxide

D. Ethyl Propionate

# Answer: d



51. Which one of the following gases is liberated when ethyl alcohol

is heated with methyl magnesium iodide?

A. Methane

B. Ethane

C. Carbon dioxide

D. Propane

Answer: a



**52.** Which one of the following compounds gives aspirin on reacting with acetic anhydride in the presence of cone  $H_2SO_4$ ?



В. 📄





# Answer: b

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53. The products formed when diethyl ether is reacted with cold HI

are

A.  $C_2H_5I+C_2H_5OH$ 

B.  $2C_2H_5I + H_2O$ 

 $\mathsf{C.}\, 2C_2H_5OH$ 

D.  $C_2H_5 - O - O - C_2H_5 + H_2O$ 

#### Answer: a

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**54.** In the following reaction, X and Y respectively are  $C_2H_5OH \xrightarrow{KMnO_1/II^+} X \xrightarrow{y}_{H_2SO_1/\Delta} CH_3COOC_2H_5$ 

A.  $CH_3OH$ ,  $C_2H_5OH$ 

 $\mathsf{B.}\,CH_3CHO,\!CH_3OH$ 

 $\mathsf{C.}\,CH_2=CH_2,\!CH_3COOH$ 

D.  $CH_3COOH$ , $C_2H_5OH$ 

Answer: d

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55. Which one of the following is a secondary alcohol?

A. 2-methyl-2-propanol

B. 1-propanol

C. 1-butanol

D. 2-pentanol

Answer: d

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**56.** Which one of the following pairs of compounds are functional isomers?

A.  $CH_3CH_2CH_2OH$ ,  $(CH_3)_2CHCH_2OHCH_3CH_2CH_2OH$ ,

 $(CH_3)_2 CHCH_2 OH$ 

B.  $CH_3CH_2CH_2CH_2OH$ ,  $(CH_3)_2CHCH_2OH$ 

 $\mathsf{C.}\,CH_3CH_2CH_2OH,\!CH_3CH_2CH_2CI$ 

D.  $CH_3CH_2CH_2OH$ , $CH_3-O-CH_2CH_3$ 

Answer: d



**57.** Ethanol, when reacted with  $PCI_5$  gave A, $PCI_3$  and HCI. A reacts with silver nitrite to from B (major product) and AgCI. A and B are respectively.

A.  $C_2H_5CI$  and  $C_2H_5OC_2H_5$ 

B.  $C_2H_6$  and  $C_2H_5OC_2H_5$ 

C.  $C_2H_5CI$  and  $C_2H_5NO_2$ 

D.  $C_2H_6$  and  $C_2H_5NO(2)$ 

Answer: c

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58. Chloraethane reacts with X to from diethyl ether. What is X?

A. NaOH

 $\mathsf{B.}\,H_2SO_4$ 

 $\mathsf{C.}\, C_2 H_5 ONA$ 

D.  $Na_2S_2O_3$ 

Answer: c



**59.** 3 moles of ethanol react with one mole of phosphorus tribromide to form 3 moles of bromaethane and one mole of X. Which of the following is X?

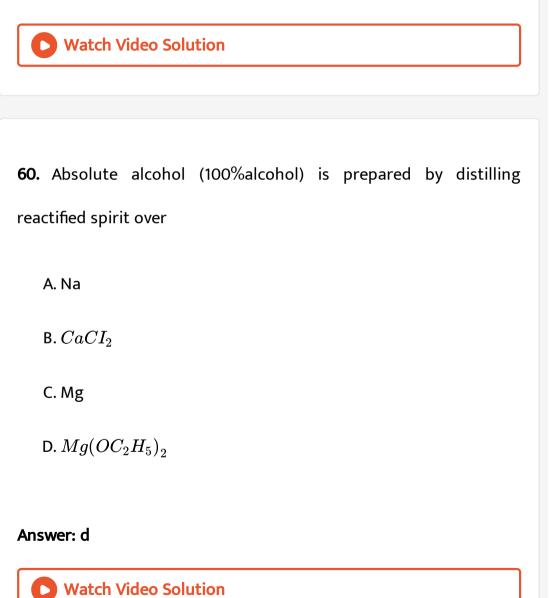
A.  $H_3PO_4$ 

B.  $H_3PO_2$ 

 $C. HPO_3$ 

D.  $H_3PO_3$ 

Answer: d



61. Which of the following is Lucas reagent?

A. Ammoniacal  $AgNO_3$ 

B.  $Br_2/CCI_4$ 

C.  $ZnCI_2$  conc. HCI

D. Cold alk.  $KMnO_4$ 

Answer: c

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62. Which of the following is a tertiary alcohol?

A. 📄

 $\mathsf{B.}\,CH_3CH_2CH_2CH_2OH$ 



# Answer: d



**63.** Absolute alcohol is prepared by distillation of rectified spirit in

the presence of

A. Na

B.  $CaCO_3$ 

C. CaO

 $\mathsf{D.}\, Ca(OH)_2$ 

## Answer: c

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**64.** Ethyne is treated with 30%  $H_2SO_4$  in the presence of 1% mercuric sulphate at 70° C. What is the product formed?

A. Ethene

B. Ethanol

C. Ethanal

D. Ethylene glycol

Answer: c

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**65.** Which one of the following reactions does not yield an alkyl halide?

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A. Diethylether + CI_2
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B. Diethylether + HI

C.  $Diethylether + PCI_5$ 

 ${\tt D}. \, Diethyle ther + SOCI_2$ 

#### Answer: a

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**66.** The alcohol that produces turbidity immediately with  $ZnCl_2/conc$ . HCl at room temperature is

- A. 1 hydroxybutane
- B. 2 hydroxybutane
- C. 2 hydroxy 2 methylpropane
- D. 1 hydroxy 2 methylpropane

#### Answer: c

67. An isomer of ethanol is

A. Methanol

B. Dimethyl ether

C. Diethyl ether

D. Ethylene glycol

Answer: b

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68. When an alkyl halide reacts with an alkoxide, the product is

A. Hydrocarbon

B. Unsaturated hydrocarbon

C. Ether

D. Alcohol

Answer: c

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**69.** Compound A reacts with  $PCl_5$  to give B which on treatment with KCN followed by hydrolysis gave acid as the product. What is A?

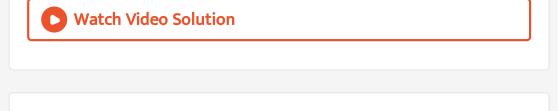
A. Propane

B. Ethane

C. Ethyl chloride

D. Ethyl alcohol

Answer: d



70. Diethylether is prepared by passing ethyl alcohol vapours over a

catalyst under high pressure and temperature. The catalyst is

A.  $SiO_2$ 

B. CuO

 $\mathsf{C}. AI_2O_3$ 

D.  $Ag_2O$ 

## Answer: c



71. Alcohol manufactured from water gas is

A. Ethanol

**B.** Butanol

C. Methanol

D. Iso - butanol

Answer: c

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**72.** Old bottles of ether are dangerous because they frequently contain high concentration of

A. Ether oxide

**B.** Peroxides

C. Phosgene

D. Ethyl carbonate

Answer: b



73. The IUPAC name of

📄 is

A. 2- methyl - 3 butanol

B. 3- methyl butanol

C. 3- methyl - 2 - butanol

D. 3,3 - dimethyl propanol - 2

## Answer: c



**74.** Ethyl alcohol when passed over copper at  $300^{\circ}C$  is dehydrogenated to give....

A. Acetic acid

B. Acetaldehyde

C. Propanaldehyde

D. Methanal

Answer: b



**75.** Acetone on addition to methyl magnesium bromide forms a complex, which on decomposition with acid gives X and Mg(OH)Br. Which one of the following is X?

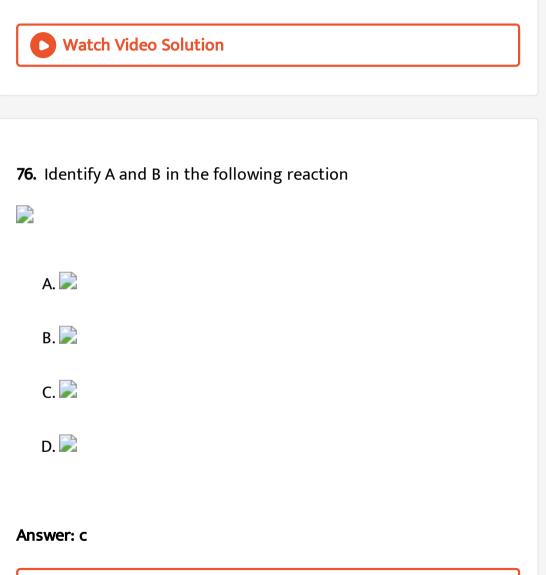
A.  $CH_3OH$ 

B.  $(CH_3)_3COH$ 

 $\mathsf{C.} (CH_3)_2 CHOH$ 

# D. $CH_3CH_2OH$

Answer: b





**77.**  $CH_3COOH \xrightarrow{LiA1H_1} A$  $A + CH_3COOH \xrightarrow{H_JO^+} B + H_2O$ 

In the above reactions 'A' and 'B' respectively, are

A.  $CH_3COOC_2H_5$ ,  $C_2H_5OH$ 

 $\mathsf{B.}\,CH_3CHO.C_2H_5OH$ 

 $\mathsf{C.}\,C_2H_5OH,\!CH_3CHO$ 

D.  $C_2H_5OH$ ,  $CH_3COOC_2H_5$ 

## Answer: d

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**78.** An organic compound 'X' on treatment with pyridinium chloro chromate in dichloromethane gives compound 'Y'. Compound 'Y'

reacts with  $I_2$  and alkali to form triiodomethane. The compound 'X'

is

A.  $C_2H_5OH$ 

B.  $CH_3CHO$ 

C.  $CH_3COCH_3$ 

D.  $CH_3COOH$ 

Answer: a

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79. Which is the major product formed when acetone is heated with

iodine and potassium hydroxide?









Answer: a

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**80.** Which of the following reacts with benzene in presense of anhydrous aluminium chloride and forms acetophenone?

A.  $CH_3CI$ 

 $\mathsf{B.}\,CH_3COOH$ 

 $C. CH_3 CHO$ 

D.  $CH_3COCI$ 

Answer: d

**81.** When acetaldehyde is heated with Fehlin solution, a red precipitate is formed . Which of the following is that?

A.  $Cu_2O$ 

B. Cu

C. CuO

D.  $CuSO_4$ 

## Answer: a

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82. Match the following columns.



**83.** Which of the following compounds is the reactant in Rosenmund's reduction?

A.  $CH_3CO_2H$ 

B.  $CH_3CHO$ 

 $\mathsf{C.}\,CH_3CH_2CI$ 

D.  $CH_3COCI$ 

Answer: d

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84. 3 - hydroxybutanal is formed when (X) reacts with (Y) in dilute

(Z) solution. What are X,Y, and Z? X Y Z

A.  $CH_3CHO$ , $(CH_3)_2CO$ ,NaOH

B.  $CH_3CHO$ ,  $CH_3CHO$ , NaCl

C.  $(CH_3)_2CHO$ , $(CH_3)_2CO$ ,HCI

D.  $CH_3CHO, CH_3CHO, NaOH$ 

## Answer: d

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85. Identify 'acetaldoxime'.

- A.  $CH_3CH = N NH_2$
- B.  $CH_3CH = N OH$
- $\mathsf{C}.\,(CH_3)_2C=N-OH$
- D.  $CH_2 = N OH$

## Answer: d

**86.** Which one of the following functional groups undergoes hydrolysis with alkali to yield an acid group?

A. - CN

B. - CHO

 $C. - COCH_3$ 

D. - Br

### Answer: a

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**87.** Which of the following reagents can form a hydrazone with alkanone?

A.  $NH_3OHCI$ 

B.  $PhNHNH_2$ 

C.  $NH_2NHCONH_2$ 

D. HCN

Answer: b

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

A. 
$$HCHO \xrightarrow{(i) CH_3Mgl}$$
  
B.  $C_2H_5Br + AgOH \xrightarrow{\Delta}$   
C.  $2C_2H_5Br + Ag_2O \xrightarrow{\Delta}$ 

D. 
$$C_2H_2+H_2O \xrightarrow{40\,\%\,H_2SO_4}{1\,\%\,HgSO_4}$$

# Answer: d



89. Acid hydrolysis of X  $0^{\circ}$  yields two different organic compounds.

Which one of the following is X?

A.  $CH_3COOH$ 

 $\mathsf{B.}\,CH_3CONH_2$ 

C.  $CH_3COOC_2H_5$ 

 $D.(CH_3CO)_2O$ 

Answer: c

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**90.** Acetaldehyde forms a white crystalline precipitate on mixing with a... solution of ....

A. Acidic, Zn - Hg

B. Alcoholic,  $Na_2SO_3$ 

C. saturated aqueous,  $NaHSO_3$ 

D. Aqueous, NaCl

Answer: c

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91. In the following reaction, X and Y are respectively.

 $CH_3COOH + NH_3 \rightarrow X \xrightarrow{\Delta} Y + H_2O$ 

A.  $CH_3CONH_2$ ,  $CH_4$ 

 $\mathsf{B.}\,CH_3COONH_4,\!CH_3CONH_2$ 

 $\mathsf{C.}\,CH_3CONH_2,\!CH_3COOH$ 

D.  $CH_3NH_2$ ,  $CH_3CONH_2$ 

Answer: b

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92. What is the catalyst used in the conversion of acetaldehyde to

acetic acid?

A. Manganese acetate

B.  $LiAlH_4$ 

 $\mathsf{C.}\,H_2\,/\,Ni$ 

D.  $Na / NH_3$ 

Answer: a



93. What is X in the following reaction?

 $2CH_3CHO \xrightarrow{NaOH} X$ 





 $\mathsf{C.}\,CH_3CH(CH_3)CH_2COCH_3$ 



#### Answer: a

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**94.** What is the gas liberated when alkaline formal dehyde solution is treated with  $H_2O_2$ ?

A.  $CO_2$ 

 $B.O_2$ 

 $\mathsf{C.}\,CH_4$ 

D.  $H_2$ 

Answer: d

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95. The chemicals used for preparing acetophenone are

(A)  $C_6H_6$ 

(B)  $CH_3COCH_3$ 

(C)  $CH_3COCl$ 

(D) Anhydrous  $AICI_3$ 

A. A,B,C

B. B,C,D

C. A,C,D

Answer: c



**96.** Oxalic acid reacts with concentrated  $H_2SO_4$  to give a mixture of two gases. When this mixture is passed through caustic potash, one of the gases is absorbed. What is the product formed by the absorbed gas with caustic potash?

A.  $K_2SO_4$ 

B.  $K_2HCO_3$ 

 $\mathsf{C}.\,K_2CO_3$ 

D. KOH

Answer: c





97. Dry distillation of calcium acetate and calcium formate forms

A. Methanol

B. Ethanal

C. Ethanol

D. Acetone

## Answer: b

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**98.** When acetaldehyde is reacted with  $LiAlH_4$ , what is the product

formed?

A.  $CH_3COOH$ 

 $\mathsf{B.}\, CH_3 CH_2 OH$ 

 $C. CH_3OH$ 

D. HCOOH

Answer: b

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**99.** Acetic acid is reacted with metallic sodium to form hydrogen and X. When X is heated with sodalime, Y and sodium carbonate are formed. Y is ...

A.  $C_2H_6$ 

B.  $CH_4$ 

 $\mathsf{C.}\,CH_3COOHNa$ 

D.  $CH_3CONH_2$ 

# Answer: b



100. What is X in the following reaction?

 $2CH_3CHO \xrightarrow{NaOH} X$ 









Answer: c



**101.** Which of the following converts acetic acid into acetyl chloride?

A. NaCl

B. HCI

 $\operatorname{\mathsf{C.}} \operatorname{\mathit{Cl}}_2/\operatorname{\mathit{P}}$ 

D.  $PCl_3$ 

Answer: d

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102. Which of the following converts acetone to acetone oxime?

A.  $H_2 - N - NH_2$ 

B. 2,4-DNP

 $\mathsf{C.}\,C_6H_5-NHNH_2$ 

 $\mathsf{D.}\, NH_2OH$ 

Answer: d

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**103.** Oxalic acid is heated with conc.  $H_2SO_4$  when the resultant gases are passed over red hot carbon, X is obtained. X

A. CO

 $\mathsf{B.}\,CH_4$ 

 $\mathsf{C}.CO_2$ 

D.  $C_2H_4$ 

Answer: a

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**104.** Which of the following compounds undergo aldol condensation?

A.  $CH_3CHO$ 

 $\mathsf{B.}\,(CH_3)_3COH$ 

C.  $CCI_3CHO$ 

D. HCHO

Answer: a

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105. Acetic acid gives acetic anhydride when treated with

A.  $PCI_5$ 

 $\mathsf{B.}\,P_2O_2$ 

C.  $Zn/NH_4CI$ 

D.  $LiAIH_4$ 

Answer: b

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**106.** Acetic acid reacts with  $PCl_5$  to form

A.  $CH_2CIOOH$ 

B.  $CHCI_2COOH$ 

 $\mathsf{C.}\,CH_3COCl$ 

 $\mathsf{D.}\, CH_2 COOCl$ 

Answer: c

**107.** Compound A reacts with PCI, to give B which on treatment with KCN followed by hydrolysis gave propanoic acid. What is A and B respectively?

A.  $C_2H_6$  and  $C_3H_2Cl$ 

B.  $C_2H_6$  and  $C_2H_6Cl$ 

 $\mathsf{C.}\, C_2H_5Cl \mathsf{and} C_2H_4Cl$ 

D.  $C_2H_5OH$  and  $C_2H_5Cl_2$ 

Answer: d

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108. Acetaldehyde when treated with dilute NaOH gives

A.  $CH_2CH_2OH$ 

B.  $CH_3COOH$ 

С. 📄

D.  $CH_3 - CH_3$ 

Answer: c



109.  $C_2H_5CHO$  and  $(CH_3)_2CO$  can be distinguished by testing

with

A. Phenyl hydrazine

B. Hydroxyl aminc

C. Fehling's solution

D. Sodium bisulphite

### Answer: c

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110. The strongest conjugate base results from

A. Formic acid

B. Benzoic acid

C. Acetic acid

D. Acetylene

Answer: d



**111.** The reagent that gives an orange coloured precipitate with acetaldehyde is

- A.  $NH_2OH$
- B.  $NaHSO_3$
- C. lodine
- D. 2,4-DNP

Answer: d

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112. Acetone on reaction with chlorine gives normally

A. Monochloro acetone

B. Dichloro acetone

C. Trichloro acetone

D. Hexachloroacetone

Answer: c

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113. The reagent used for converting ethanoic acid to ethanol is

A.  $LiAlH_4$ 

B.  $BH_3$ 

 $C. PCl_5$ 

D.  $K_2 Cr_2 O_7 \,/\, H^{\,+}$ 

Answer: a

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**114.** The reduction of acetaldehyde by .... leads to the formation of ethanol.

A. Tollen's reagent

 $\mathsf{B}.\,H_2/Ni$ 

C.  $LiAlH_4$ 

D. Both (b) and (c)

Answer: c

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115. Ammoniacal solution of  $AgNO_3$  is called

A. Fehling's solution

B. Tollen's reagent

C. Schiff's reagent

D. None of the these

Answer: b

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116. Reduction of acetaldehyde in presence of  $LiAlH_4$  gives

A. Acetic acid

B. Ethane

C. Methane

D. Ethanol

Answer: d

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**117.** A few drops of an organic compound (liquid) are added to Schiff's reagent. A pink colour is produced. The organic compound is...

A. Aldehyde

B. Alcoholic,  $Na_2SO_3$ 

C. Ketone

D. Acid

### Answer: a

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**118.** The structure of the compound formed, when nitrobenzene is reduced by lithium aluminium hydride  $(LiAlH_4)$  is



R	
υ.	



D. 📄

Answer: c

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119. Nitrobenzene on reduction with zinc and  $NH_4Cl$  gives

A. Azobenzene

B. Aniline

C. Hydrazobenzene

D. N - phenyl hydroxylamine

Answer: d

**120.** Which of the folowing reactions can produce aniline as main product?

A.  $C_6H_5NO_2+Zn/KOH$ B.  $C_6H_5NO_2+Zn/NH_4Cl$ C.  $C_6H_5NO_2+LiAlH_4$ D.  $C_6H_5NO_2+Zn/HCl$ 

### Answer: d

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**121.** Which one of the folowing compounds forms a quatenary salt on reacting with excess methyl iodide?

A.  $C_2H_5OCH_3$ 

 $\mathsf{B.} (CH_3)_2 CHOC_2 H_5$ 

 $\mathsf{C.}\, C_6H_5NH_2$ 

D.  $C_6H_5NO_2$ 

Answer: c

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**122.** Aniline is not the major product in oOne of the following reacvtions, identify that reactions.

A. 
$$C_6H_5OH + NH_3 \xrightarrow[300^\circ]{2nCl_2}{300^\circ}$$
  
B.  $C_6H_5NO_2 + Zn \xrightarrow[AlcoholicKOH]{}$   
C. 💽

D. 
$$C_6H_5NO_2+6(H)+rac{Fe+H_2O}{HCl}$$

# Answer: b

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**123.** Which one of the following is the molecular formula of a teritiary amine?

A.  $C_2H_7N$ 

B.  $C_3H_9N$ 

 $\mathsf{C.}\, CH_5N$ 

D.  $CH_3N$ 

Answer: b

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124. Consider the following reactions

A and B are

A.  $A=C_2H_4, B=C_6H_6$ 

B. A=
$$C_2H_6, B$$
= $C_6H_5NH_2$ 

C. A= $C_2H_4, B$ = $C_6H_5NH_2$ 

D. A=
$$C_6H_6, B=C_6H_5NO_2$$

## Answer: d



125. Considerd the following reaction,

 $C_6H_5NO_2 \xrightarrow{Sn\,/\,HCI} X \xrightarrow{C_6H_5COCI} Y + HCI$ 

What is Y?

A. Acetanilide

B. Benzanilide

C. Azobenzene

D. Hydrazobenzene

Answer: b

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126. What of the following is a secondary amine?

A.  $C_6H_5NH_2$ 

 $\mathsf{B.}\,CH_3-NH_2$ 

С. 📄

D. 📄

Answer: d

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127. Which of the following reagents converts nitrobenzene into N-

phenyl hydroxylamine?

A. Sn/HCI

B. Zn/NaOH

C.  $Zn/NH_4CI$ 

D.  $LiAIH_4$ 

Answer: c



**128.** By which of the following reactions can one get N-methyl aniline from aniline?

A. Alkylation

B. Acetylation

C. Benzoylation

D. Bromination

#### Answer: a



129. Which one of the following is not a busc?

A.  $N_2H_4$ 

 $\mathsf{B.}\, NH_2OH$ 

 $\mathsf{C.}\left(CH_3\right)_3$ 

D.  $HN_3$ 

Answer: d

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130. Aniline when heated with  $NaNO_2$  and HCl at  $0.5\,^\circ C$  produces

A. Chloro aniline

B. Benzene diazonium chloride

C. Chlorobenzene

D. Dichlorobenzene

## Answer: b

131. Oxidation of aniline with potassium dichromate and sulphuric

acid gives

A. o-nitroaniline

B. n-nitrosoaniline

C. p-benzoquinone

D. -benzoquinone

Answer: c

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132. Which one of the following is a tertiary amine?

A. t-butylamine

B. Methyl ethylamine

C. Dimethyl butyl amine

D. N-methyl aniline

#### Answer: c

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**133.** Aniline on treatment with bromine water gives a white precipitate of

A. Monobromo aniline

B. Dibromo aniline

C. 'Tribromo aniline

D. Tetrabromo aniline

Answer: c



134. When aniline is treated with  $CHCl_3$  and KOH, the product is

A. Benzene diazonium chloride

B. Benzanilide

C. A Schill's base

D. Phenyl isocyanide

# Answer: d

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135. 
$$C_6H_5NO_2 \xrightarrow{Sn\,/\,HCl} A$$
 Product 'A' is

A. Hydrazobenzene

B. Aniline

C. Azobenzene

D. Benzene diazonium chloride

### Answer: b

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136. Aniline is treated with  $NaNO_2$  and HCl at  $O^{\,\circ\,}C$ , the product

formed is

A. Nitroaniline

B. Chloroaniline

C. Benzene diazonium salt

D. Amino phenol

Answer: c

