

ALKYL HALIDES

18- The reaction of Propyl bromide with NaOH is

- A) Nucleophilic addition.
- B) Nucleophilic substitution.
- C) Electrophilic substitution.
- D) Electrophilic addition.

25) Which of the following compounds cannot be classified as a secondary halide?

- A) Isopropyl bromide
- B) Benzyl iodide
- C) 2-Bromobutane
- D) 3-Chloro-1-butene

ALCOHOLS

3) Oxidation of tertiary alcohol yields

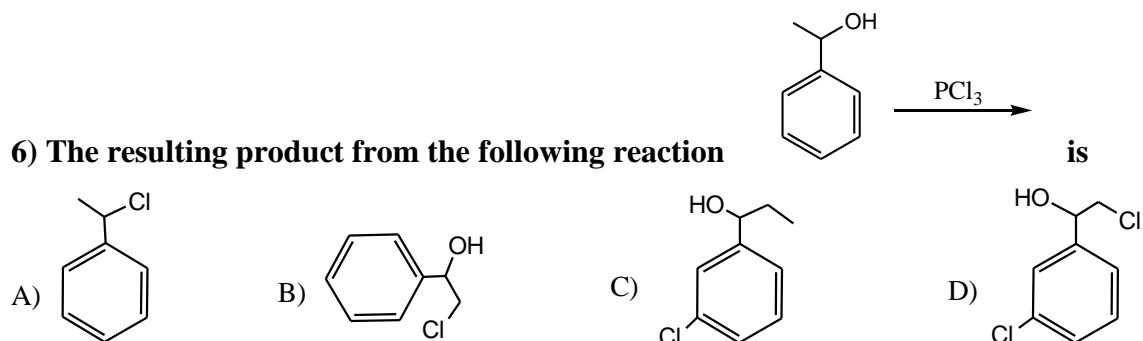
- A) Aldehyde
- B) No reaction
- C) Ketone
- D) Carboxylic acid

5) Which of the following statements about compounds (1) and (2) is false?

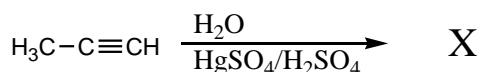


- A) (1) and (2) are geometric isomers
- B) (1) has higher boiling point than (2)
- C) (1) can be easily oxidized than (2)
- D) only (1) is capable of forming hydrogen bond with itself

6) The resulting product from the following reaction



11) What is the product X in the following reaction?



- A) 2-Propanol B) Propanone C) 1-Propanol D) Propanal

18) Two molecules (X, Y) have the same chemical formula $C_6H_{14}O$, the one has a higher boiling point could be

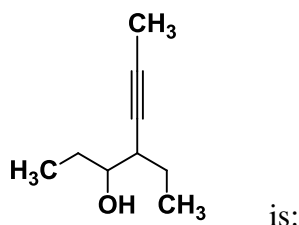
- A) 1-Hexanol B) Ethoxybutane C) 2-Hexanol D) 3-Hexanol

26) The major product of the following reaction  $\xrightarrow{\text{dilute NaOH}}$ is

- A) Propene B) 1-Propanol
C) 2-Propanol D) Propane

28) The common name for 1,2-Ethandiol is

- A) Ethylene glycol B) Glycerol
C) Ethane glycol D) Dihydroxy ethane



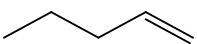
1- The IUPAC name of

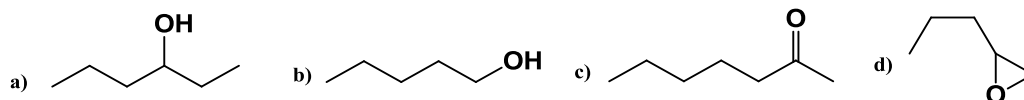
is:

- a) 4-Ethyl-5-heptyn-3-ol. c) 4-Ethyl-2-hexyn-5-ol..
b) 4-Ethyl-2-heptyn-5-ol d) 4-Ethyl-5-hexyn-2-ol.

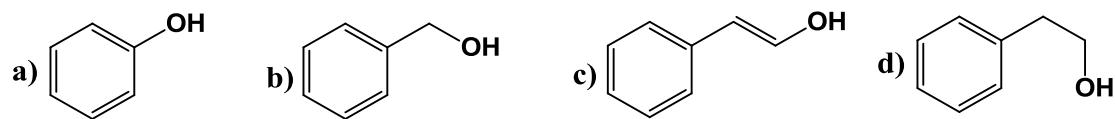
7- Which of the following reagents will oxidize secondary alcohol to ketone:

- a) $NaBH_4$ b) CrO_3 c) $LiAlH_4$ d) $FeCl_3$

10- The following reaction  $\xrightarrow{CH_3COOOH}$ gives:



19-Which of the following is called benzyl alcohol:



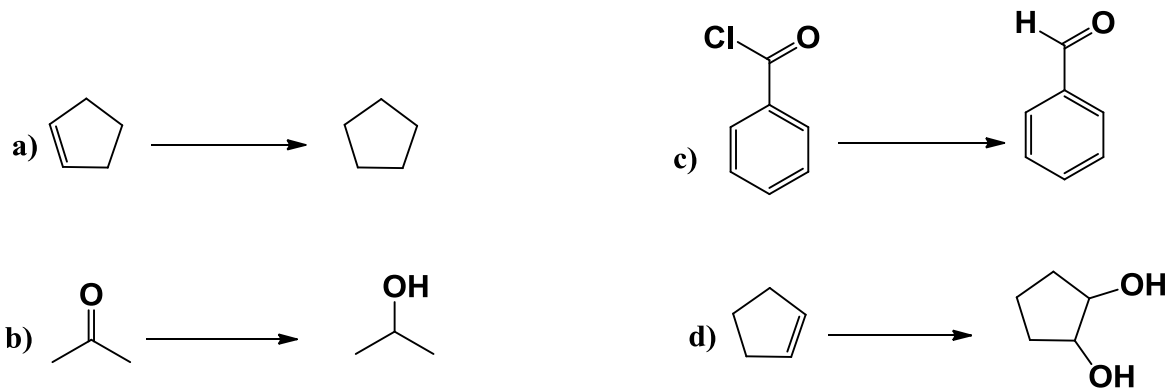
The product of following reaction $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH} \xrightarrow{\text{SOCl}_2}$ is:

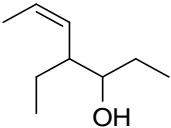
- a) Dibutylether. c) 1-Chlorobutane.
 b) 1,2-Dichlorobutane d) Butene.

21- The compound which can be oxidized by KMnO_4 to give ketone.

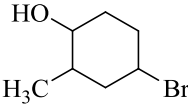
- a) Tertiary alcohol. c) Primary alcohol.
 b) Secondary alcohol d) Benzyl alcohol.

1- Which of the following changes represent an oxidation reaction:



2- The IUPAC name of  is:

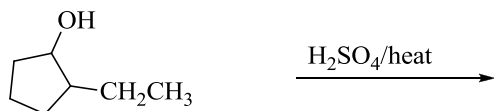
- A) 4-Ethyl-5-heptyn-3-ol
 B) 4-Ethyl-5-heptan-3-ol
 C) 4-Ethyl-5-hepten-3-ol
 D) 4-Ethyl-2-hepten-5-ol

3- The IUPAC name of  is:

- A) 3-Methyl-1-bromocyclohexanol
 B) 2-Bromo-3-methylcyclohexanol
 C) 4-Bromo-2-methylcyclohexanol

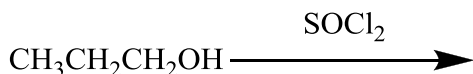
D) 3-Bromo-1-methylcyclohexanol

1- The main product from the following reaction is:



- A) B) C) D)

18- The product of the following reaction is:



- A) Propene
B) Dipropyl ether
C) 2-chloropropane
D) 1-chloropropane.

18- The most acidic alcohol is:

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

2- The IUPAC name of is:

- E) 4-Ethyl-5-heptyn-3-ol.
F) 4-Ethyl-5-heptan-3-ol.
G) 4-Ethyl-5-hepten-3-ol.
H) 4-Ethyl-2-hepten-5-ol.

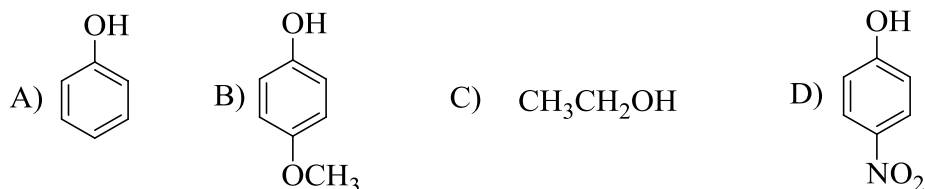
3- The IUPAC name of is:

- E) 3-Methyl-1-bromocyclohexanol.
F) 2-Bromo-3-methylcyclohexanol.
G) 4-Bromo-2-methylcyclohexanol.
H) 3-Bromo-1-methylcyclohexanol.

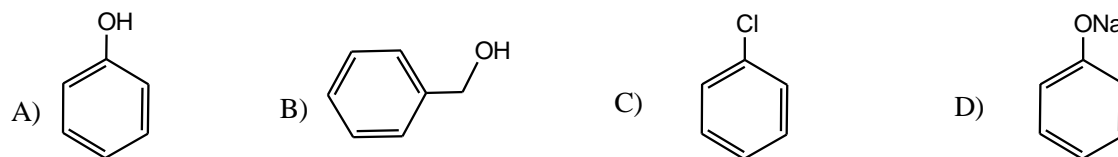
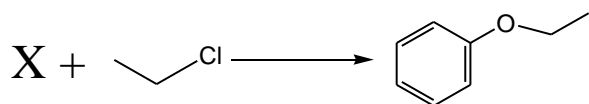
1- The common name of 2-methyl-2-propanol is

- A) Allyl alcohol.
- B) Isopropyl alcohol.
- C) *tert*-Butyl alcohol.
- D) Benzyl alcohol.

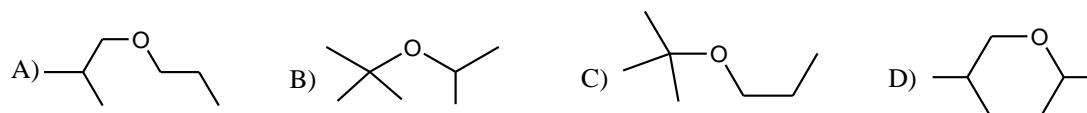
1- The most acidic compound is



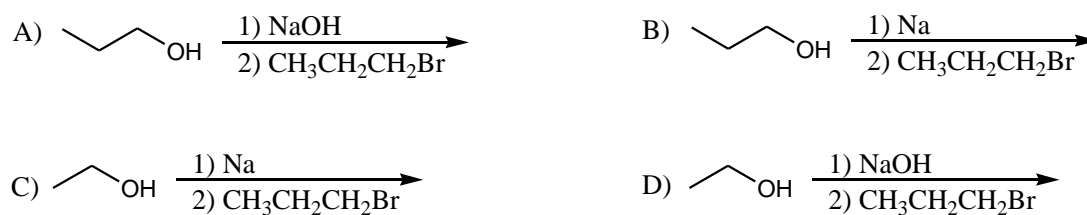
7) What is the appropriate reactant X for the following transformation?

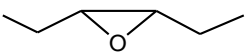


10) The structure of *t*-Butyl isopropyl ether is



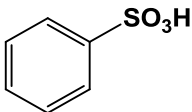
20) Which one of the following reactions gives ethyl propyl ether?

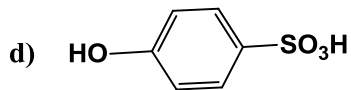
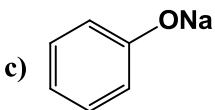
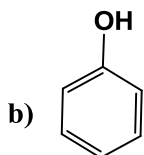
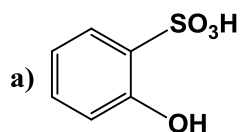


23) The following reaction  $\xrightarrow[2) \text{H}_3\text{O}^+]{1) \text{CH}_3\text{MgBr}}$ yields

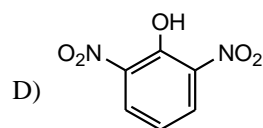
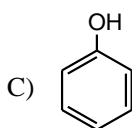
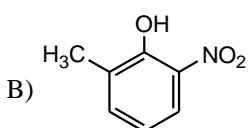
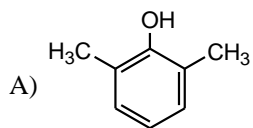
- A) 3-Methyl-4-hexanol
- B) 4-Methyl-3-hexanol
- C) 4-Ethyl-3-hexanol
- D) 4-Methoxy-3-hexanol

PHENOLS

1- The following reaction  $\xrightarrow[2) \text{H}_3\text{O}^+]{1) \text{NaOH} / 350^\circ\text{C}}$ gives:

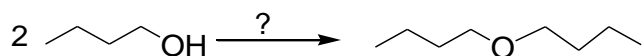


16) The less acidic compound is



ETHERS

4) What is the reagent needed for the following reaction?



A) $\text{H}_2\text{SO}_4/140^\circ\text{C}$

B) NaOH/Heat

C) H_2O

D) HCl/Heat

6) The reaction of two moles of HI with diethyl ether gives

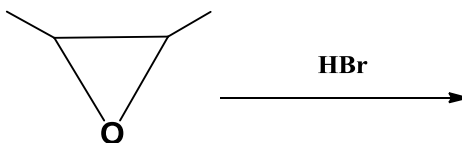
A) Methanol

B) Two moles Ethyl iodide and one mole water

C) Ethyl alcohol and Ethyl iodide

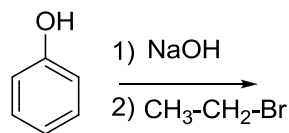
D) Two moles Methyl iodide and water

14. The following reaction gives



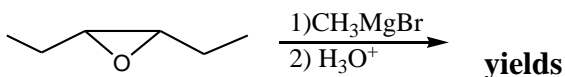
- a) 2-Bromobutan-3-ol c) 3-Bromobutan-2-ol
 b) 2-Bromobutanoxide d) 1-Bromobutan-2-ol

2- The following reaction gives



- A) 4-Ethylphenol.
 B) 2-Ethylphenol.
 C) Ethylphenyl ether.
 D) Ethylphenyl ketone.

23) The following reaction



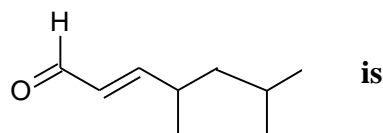
- A) 3-Methyl-4-hexanol B) 4-Methyl-3-hexanol
 C) 4-Ethyl-3-hexanol D) 4-Methoxy-3-hexanol

ALDEHYDES and KETONES

21) Nucleophilic addition of ammonia to aldehydes and ketones results in the formation of

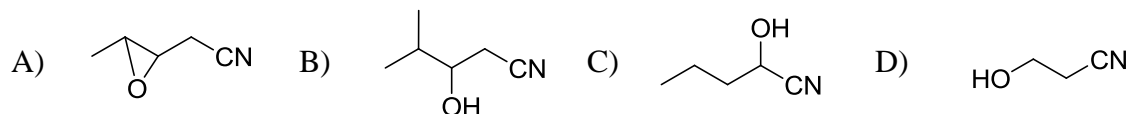
- A) Hydrazone B) Hydrazine C) Oxime D) Imine

22) The correct IUPAC name of the following structure



- A) 2,4-Dimethyl-5-heptanal B) 2,4-Dimethyl-5-heptenal
 C) 5-Isopropyl-4-methyl-2-pentenal D) 4,6-Dimethyl-2-heptenal

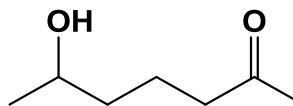
25) Which of the following compounds is a cyanohydrin?



26) The carbonyl-O-atom in aldehydes and ketones can be attacked by

- A) Anion B) Nucleophile
 C) Electrophile D) O-atom of water

1- Choose the correct name of the following compound:



- a) 2-Hydroxyheptan-6-one. c) 6-Hydroxyheptan-2-oxo.
b) 2-Hydroxyheptan-6-oxo. d) 6-Hydroxyheptan-2-one.

5-The compound with the highest boiling point is:

- a) 1-Butanol. c) Diethyl ether.
b) Butanone. d) t-Butanol.

6- Reaction of acetaldehyde with methyl magnesium bromide followed by addition of H_3O^+ Yields:

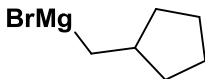
- a) Primary alcohol. c) Secondary alcohol.
b) Tertiary alcohol. d) Diol.

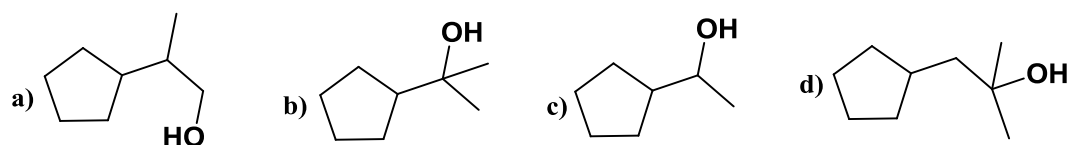
13- Carbonyl group undergo:

- A) Elimination reaction.
b) Electrophilic addition reaction.
c) Nucleophilic substitution reaction.
d) Nucleophilic addition reaction.

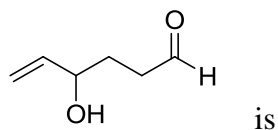
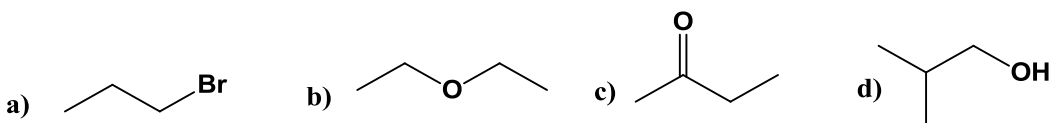
11- Reaction of aldehyde with hydroxylamine gives:

- A) Ketal c) Hydrazone
B) Imine d) Oxime

17- Reaction of acetone with  followed by addition of H_3O^+ Yields:

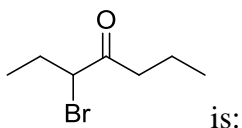


20- Which of the following compounds is more soluble in water?



4- The correct name of the following compound

- A) 3-hydroxyhexanal
- B) 3-hydroxy-4-hexenal
- C) 4-hydroxy-5-hexenal
- D) 3-hydroxy-1-hexenal



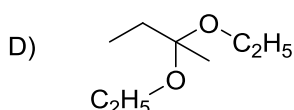
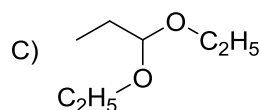
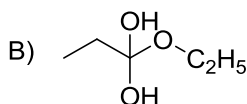
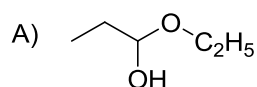
5- The IUPAC name of

- A) 3-bromo-4-heptanone
- B) 5-bromo-4-heptanone
- C) 3-bromo heptanone
- D) 4-bromo-3-heptanone

6- Addition of Grignard Reagent (RMgX) to ketone gives

- A) Primary alcohol
- B) Secondary alcohol
- C) Tertiary alcohol
- D) Carboxylic acid

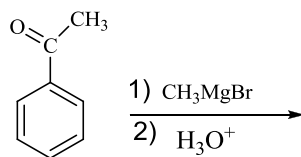
7- The structure of Acetal is:



8- Reaction of phenylhydrazine with aldehydes or ketones gives:

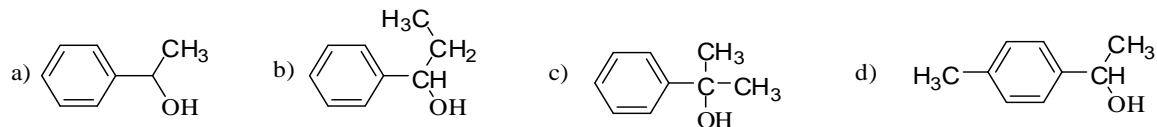
- A) Oxime
- B) Phenylhydrazone
- C) Imine
- D) Hemiacetal

9- The following reaction gives

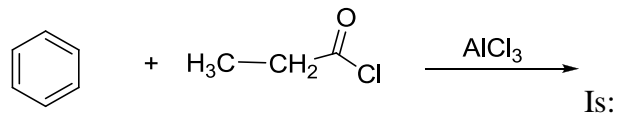


1- The following reaction

gives:



2- The product of the following reaction

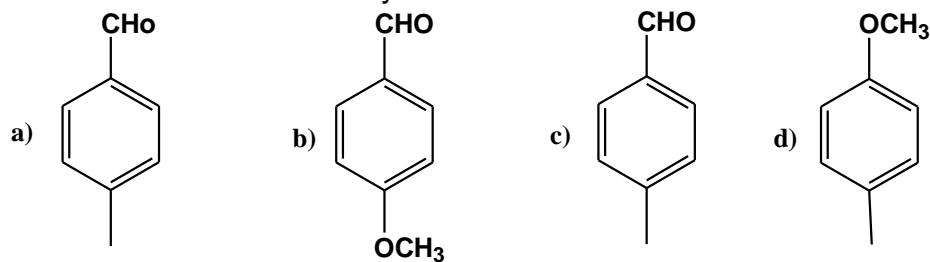


- A) Acetophenone.
 B) Ethylphenyl ketone.
 C) Ethylbenzene.
 D) Phenylpropyl ketone.

1) Reaction of formaldehyde with alkyl magnesium halide followed by addition of H_3O^+ Yields:

- a) Primary alcohol. c) Secondary alcohol.
 b) Tertiary alcohol. d) Diol.

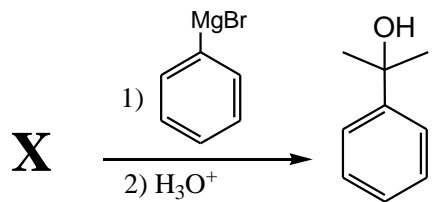
2) The structure of anisaldehyde is:



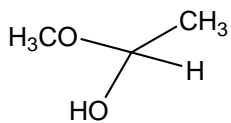
3) The compound which can be oxidized by KMnO_4 to give ketone.

- a) Primary alcohol. c) Secondary alcohol.
 b) Benzyl alcohol. d) Tertiary alcohol.

1) In the following equation, the reagent X is



- A) Propanone B) Propanal C) 2-Propanol D) Propyne



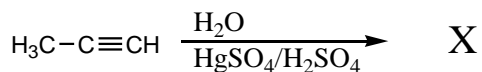
4) The structure is

- A) Hydroxyaldehyde B) Acetal C) Ketal D) Hemiacetal

9) Which of the following statements about ketones is false?

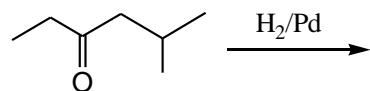
- A) can be formed by oxidation of secondary alcohol B) can form oxime
C) can be oxidized to aldehyde D) can form cyanohydrin

11) What is the product X in the following reaction?



- A) 2-Propanol B) Propanone C) 1-Propanol D) Propanal

12) What is the product of the following reaction?



- A) 2-Methylhexane B) 2-Methylhexanal
C) 5-Methyl-3-hexanol D) 2-Methyl-4-hexanol

15) Allyl ethyl ketone is the common name for

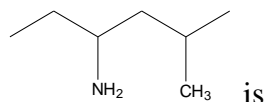
- A) 1-Hexen-4-one B) 5-Hexen-3-one
C) 1-Hexen-3-one D) 2-Hexen-4-one

22) The carbon of the carbonyl group in aldehydes and ketones can be attacked by

- A) Carbonium ion B) Nucleophile

AMINES

2- The correct name of the following compound



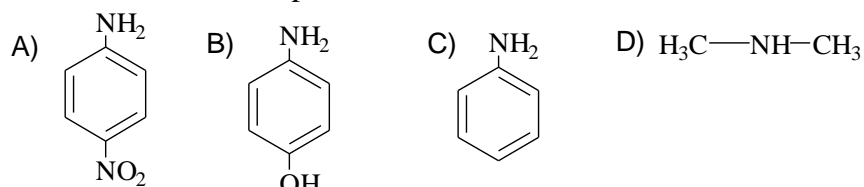
- E) 3-Amino-5-methylhexane.
F) 5-Methyl-3-aminohexane.

- G) 4-Amino-2-methylhexane.
 H) 2-Methyl-4-aminohexane.

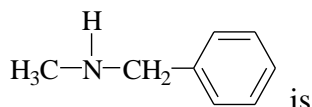
3- When an amine was treated with nitrous acid and an oily yellow layer appear, It is:

- E) Primary amine.
 F) Secondary amine.
 G) Tertiary amine.
 H) Aromatic amine.

4- The lowest basic compound is

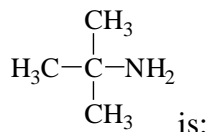


5- The following amine



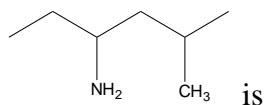
- A) Primary amine.
 B) Aliphatic amine.
 C) Tertiary amine.
 D) Aromatic amine.

6- *t*-Butylamine



- A) Primary amine.
 B) Secondary amine.
 C) Tertiary amine.
 D) Quaternary ammonium salt.

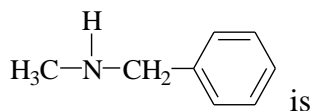
3- The correct name of the following compound



- D) 3-Amino-5-methylhexane.
 J) 5-Methyl-3-aminohexane.
 K) 4-Amino-2-methylhexane.
 L) 2-Methyl-4-aminohexane.

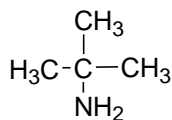
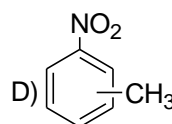
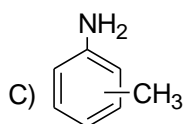
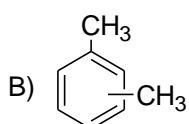
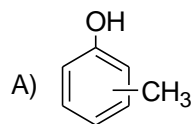
4- Reaction of acetamide with sodium hypobromite (NaOBr) gives

- B) Methylamine.
- C) Ethylamine.
- D) Propylamine.
- E) Isopropylamine.



- 5- The following amine
- E) Primary amine.
 - F) Aliphatic amine.
 - G) Tertiary amine.
 - H) Aromatic amine.

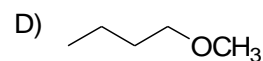
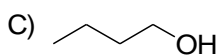
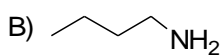
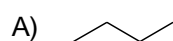
- 1- The structure of Toulidine is



- 1- The following compound is

- a. Primary amine
- b. Secondary amine
- c. Tertiary amine
- d. Quaternary salt

- 2- Which of the following compounds has the highest boiling point?



CARBOXYLIC ACIDS

- 3- The IUPAC name for salicylic acid is

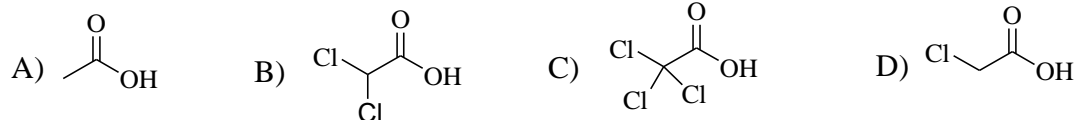
- E) 3-Hydroxybenzoic acid
- F) 3-Methoxybenzoic acid
- G) 2-Hydroxybenzenecarboxylic acid
- H) 2-Methoxybenzenecarboxylic acid

- 4- The most acidic compound

- a. Alcohol

- b. Acid
- c. Ether
- d. Phenol

5- The most acidic compound is



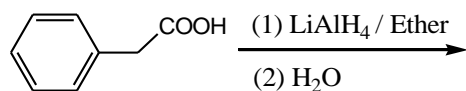
6- The structure of acetic anhydride is



7- The reaction of carboxylic acid with alcohol gives

- a. Ester
- b. Ether
- c. Acid anhydride
- d. Amide

13) What is the product of the following reaction?



- A) Benzaldehyde
- B) Benzyl alcohol
- C) 2-Phenylethanol
- D) Phenylethanal

14) The product of the following reaction

