Notes

**1) In the following general equation, the reagent (Z) must be**

A)Acetone B)Methanol C) Formaldehyde D) Acetaldehyde

* Grignard reagents react with ***formaldehyde*** to produce primary alcohols.
* Grignard reagents react with ***any other aldehyde*** to produce secondary alcohols.
* Grignard reagents react with ***ketones*** to produce tertiary alcohols.

**8)Which of the following statement about compounds (1) and (2) is false?**



A) (1) is less soluble in water than (2) B) (1) can be easily oxidized than (2)

C) (1) has higher boiling point than (2) D) (1) and (2) are isomers

**Isomers**. **Have same** molecular formula, but different structures.

 **Isomers. Example: C2H6O** 

**10) What reagent is needed to accomplish the following transformation?**



A) K2Cr2O7 B) LiAlH4

C) KMnO4 D) PCC

 StrongOxidizing reagent = A) K2Cr2O7 , C) KMnO4 weak Oxidizing reagent D) PCC

Reducing reagent = B) LiAlH4

**11) Ozonolysis of 2-methyl-2-butene results in the formation of**

A) Dialdehyde B)One aldehyde and one ketone

C) Two aldehydes D) Two ketones

**Answer of this reaction**



**12) What is the product (P) of the following reaction?**



A) 4-Methylpentane B) 2-Methylpentane

C) 4-Methyl-1-pentanol D) 4-Methyl-2-pentene

Reducing reagent = NaBH4

**13) The reaction gives**



A) B) C) D)

Reducing reagent = LiAlH4



**17) What is the starting material (X) used in the following reaction?**



A) Propene B) 2-propanol C)Propyne D) 1-propanol

This reaction refers to **Hydration Of Alkynes**

**18) The product of the following reaction is**



A) B) C) D)

Cyano group or nitrile is written as CN or 

**19) Methyl vinyl ketone is the common name of**

A) 2-Buten-3-one B) 1-Buten-2-one

C) 1-Buten-3-one D)3-Buten-2-one

**Methyl vinyl ketone is** 

**20) What is the product formed in the following reaction?**



A) B) C) D)

The reaction of Alcohol + Acid Ester

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



A) B)



C) D)

Answer of this reaction



**24) Two molecules (X, Y) have the same chemical formula C2H6O but the boiling point of X is higher than Y, So the compound Y is**

A) Ethene B) Methoxy methane C)Ethanal D) Ethanol

**Isomers**. **Have same** molecular formula, but different structures.

Isomers = B) Methoxy methane and D) Ethanol have (C2H6O) 

A) Ethene (C2H2) and C)Ethanal (C2H4O) are not Isomers

**25) Which of the following compounds is a cyanohydrin?**



A) B) C) D)

*(****Cyanohydrin:*** *A molecule containing an* ***-OH*** *group and a* ***-CN*** *group bonded to the same carbon.*

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

A) O-atom of water B) Electrophile

C) Nucleophile D) Anion

O-atom has –ve charge **can be attacked by** B) Electrophile

Some definitions are important

Electrophile: Any group has +ve charge

Nucleophile: Any group has -ve charge

Anion: Any atom has -ve charge

Cation: Any atom has +ve charge

Carbanion: carbon atom has -ve charge

Carbacation: Carbon atom has +ve charge

**27) The following reaction** **yields**

A)3-Methyl-4-hexanol B)4-Ethyl-3-hexanol

C)4-Methoxy-3-hexanol D)4-Methyl-3-hexanol

**H3O+ sometimes is written as H2O/H+**

**28)Which functional group is not present in the following structure?**

=OR

=Trichloromethyl group

A)Hemiketal B)Hemiacetal

=Tertiary alcohol

C)Trichloromethyl group D) Tertiary alcohol

=OR

B)Hemiacetal contains OH, OR, R (CCl3), H

**29) What reagent is needed to accomplish the following transformation?**



A) Na /heat / H3O+ B)KMnO4 / H3O+

C) NaOH /heat / H3O+ D) Na2Cr2O7/heat / H3O+

This reaction refers to Synthesis of phenols

**30) Which of the following compounds can not be classified as a secondary halide?**

A) 1-Chloro-1-isopropylcyclopentane B) 2-Bromobutane

C) Cyclohexyl iodide D)Isopropyl bromide

A) 1-Chloro-1-isopropylcyclopentane is **tertiary halide**

B) 2-Bromobutane , C) Cyclohexyl iodide and D)Isopropyl bromide are **secondary halide**s