

# TEST NO.9

1. In zero order reaction, the rate is independent of:
- a) Temperature of reaction
  - b) Concentration of reactants
  - c) Concentration of products
  - d) None of these

**Explanatory Answer:** (B)

The reaction whose rate is independent of concentration of reactants is said to have zero order.

2. If the rate equation of a reaction  $2A + B \longrightarrow \text{Products}$  is,  $\text{Rate} = k[A]^2 [B]$ , and A is present in large excess, then order of reaction is:

- (a) 1
- (b) 2
- (c) 3
- (d) None of these

**Explanatory Answer:** (A)

The substance which is taken in large excess and does not affect the rate of reaction and the order

with respect to that reactant is zero. The order with respect to "A" is zero and that with respect to

"B" is one. Hence overall order is also one.

3. The rate of reaction:

- (a) increases as the reaction proceeds.
- (b) decreases as the reaction proceeds.
- (c) remains the same as the reaction proceeds.
- (d) may decrease or increase as the reaction proceeds.

**Explanatory Answer:** (B)

As the reaction proceeds, concentration of reactants decreases and rate of reaction also decreases.

4. With increases of  $10^\circ\text{C}$  temperature the rate of reaction doubles. This increase in rate of

reaction is due to:

- (a) decrease in activation energy of reaction.
- (b) decrease in the number of collisions between reactant molecules.
- (c) increase in activation energy of reactants.
- (d) increase in number of effective collisions.

**Explanatory Answer:** (D)

The rate of reaction depends upon no of effective collisions between reactant molecules. For every 10°C rise of temperature no of effective collisions are almost doubled and so the rate of reaction.

5. The unit of the rate constant is the same as that of the rate of reaction in:

- (a) first order reaction.
- (b) second order reaction.
- (c) zero order reaction.
- (d) third order reaction.

**Explanatory Answer:** (C)

For zero order reaction, rate of reaction is independent of concentration of reactants.

$$\text{Hence, Rate} = K [\text{Reactants}]^0$$

$$= K \times 1$$

$$\text{Rate} = K$$

For zero order reaction, units of rate and rate constant of reaction are same.

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## TEST NO.10

1. Which metal is used in the thermit process because of its activity?

- a) Iron
- b) Copper
- c) Aluminium
- d) Zinc

**Explanatory Answer:** (C)

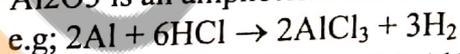
It is the process in which Al metal reacts with  $\text{Fe}_2\text{O}_3$  to form molten iron.  $2\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow 2\text{Fe} + \text{Al}_2\text{O}_3$

2. Aluminium oxide is:

- a) Acidic oxide
- b) Basic oxide
- c) Amphoteric oxide
- d) None of these

**Explanatory Answer:** (C)

$\text{Al}_2\text{O}_3$  is an amphoteric oxide. It reacts with acids as well as bases.



3. Chemical composition of colemanite is.

- a)  $\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5\text{H}_2\text{O}$
- b)  $\text{CaB}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$
- c)  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$
- d)  $\text{CaNaB}_5\text{O}_9 \cdot 8\text{H}_2\text{O}$

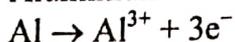
**Explanatory Answer:** (A)

4. Which element forms an ion with charge 3+?

- a) Beryllium
- b) Aluminium
- c) Carbon
- d) Silicon

**Explanatory Answer:** (B)

Aluminium atom loses three electrons and form  $\text{Al}^{3+}$



5. Which electronic configuration corresponds to an element of Group III-A of the

periodic table?

- a)  $1s^2, 2s^2, 2p^6, 3s^2, 3p^1$   
c)  $1s^2, 2s^2, 2p^6$

- b)  $1s, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2$   
d)  $1s^2, 2s^2, 2p^6, 3s^2, 3p^3$

**Explanatory Answer:** (A)

The number of electrons which are present in the outer shell of an element is equal to its group number in normal elements.

6. Which element among the following belongs to Group IV-A of the periodic table?

- a) Barium                      b) Iodine  
c) Lead                         d) Oxygen

**Explanatory Answer:** (C)

Group IVA consists of C, Si, Ge, Sn and Pb.

7. Boric acid cannot be used:

- a) as antiseptic in medicine    b) for washing eyes  
c) in soda bottles                d) for enamels and glazes

**Explanatory Answer:** (C)

8. Which of the following elements is not present abundantly in earth's crust?

- a) Silicon                        b) Aluminium  
c) Sodium                        d) Oxygen

**Explanatory Answer:** (C)

Si = 28%, O = 50%

Al = 8.13%, Na = 2.83%

9. Tincal is a mineral of:

- a) Al                                b) B  
c) Si                                d) C

**Explanatory Answer:** (B)

Borax  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$  is also called tincal.

10. Chief ore of aluminium is:

- a)  $\text{Na}_3\text{AlF}_6$                       b)  $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$   
c)  $\text{Al}_2\text{O}_3$                         d)  $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$

**Explanatory Answer:** (B)

Most of Al is extracted from Bauxite.

11. Out of all the elements of group V-A, the highest ionization energy is possessed by:

- (a) N                                (b) P                                (c) Sb                                (d) Bi

**Explanatory Answer:** (A)

Ionization energy decreases downward in a group. All these are elements of group VA.

12. Among group V-A elements, the most electronegative element is:

- (a) Sb                                (b) N                                (c) P                                (d) As

**Explanatory Answer:** (B)

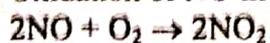
Electro negativity decreases downward in a group.

13. Oxidation of NO in air produces:

- (a)  $\text{N}_2\text{O}$                         (b)  $\text{N}_2\text{O}_3$                         (c)  $\text{N}_2\text{O}_4$                         (d)  $\text{N}_2\text{O}_5$

**Explanatory Answer:** (C)

Oxidation of NO in air produces  $\text{NO}_2$





$\text{N}_2\text{O}_4$  is dimeric form of  $\text{NO}_2$ .

14. The brown gas formed when metal reduces  $\text{HNO}_3$  is:

- (a)  $\text{N}_2\text{O}_5$  (b)  $\text{N}_2\text{O}_3$  (c)  $\text{NO}_2$  (d)  $\text{NO}$

**Explanatory Answer:** (C)

When metals reduce  $\text{HNO}_3$ , a brown coloured gas  $\text{NO}_2$  is formed, e.g; Cu when reacts with conc.  $\text{HNO}_3$ , it produce  $\text{NO}_2$  gas.

15. Laughing gas is chemically:

- (a)  $\text{NO}$  (b)  $\text{N}_2\text{O}$  (c)  $\text{NO}_2$  (d)  $\text{N}_2\text{O}_4$

**Explanatory Answer:** (B)

Dinitrogen oxide is called laughing gas.

16. Out of all the elements of group VI-A the highest melting and boiling points is shown by the element:

- (a) Te (b) Se (c) S (d) Pb

**Explanatory Answer:** (A)

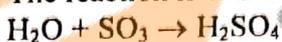
Melting points and boiling points of group VIA, increase downward due to increase in polarizability. Po has less B-P and M-P.

17.  $\text{SO}_3$  is not absorbed in water directly to or  $\text{H}_2\text{SO}_4$  because:

- (a) the reaction does not go to completion.  
(b) the reaction is quite slow.  
(c) the reaction is exothermic.  
(d)  $\text{SO}_3$  is insoluble in water.

**Explanatory Answer:** (C)

The reaction is exothermic and fog is formed in chamber



Concentrated  $\text{SO}_3$  and form oleum  $\text{H}_2\text{S}_2\text{O}_7$ .

18. Which catalyst is used in contact process?

- (a)  $\text{Fe}_2\text{O}_3$  (b)  $\text{V}_2\text{O}_5$  (c)  $\text{SO}_3$  (d)  $\text{Ag}_2\text{O}$

**Explanatory Answer:** (B)

19. Which of the following species has the maximum number of unpaired electrons?

- (a)  $\text{O}_2$  (b)  $\text{O}_2^+$  (c)  $\text{O}_2^-$  (d)  $\text{O}_2^{2-}$

**Explanatory Answer:** (A)

According to MOT,  $\text{O}_2$  has two unpaired electrons in  $\pi^*p_y$  and  $\pi p_z$ .  $\text{O}_2^+$  and  $\text{O}_2^-$  have one unpaired electrons and  $\text{O}_2^{2-}$  have no unpaired electrons.

20. Which of the following hydrogen halide is the weakest acid in solution?

- (a) HF (b) HBr  
(c) HI (d) HCl

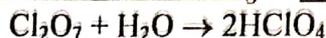
**Explanatory Answer:** (A)

The acidic strength of hydrogen halide increases in the order of  $\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$

21. Chlorine heptoxide ( $\text{Cl}_2\text{O}_7$ ) reacts with water to form:

- (a) Hypochlorous acid (b) Chloric acid  
(c) Perchloric acid (d) Chlorine and oxygen

**Explanatory Answer:** (C)





22. Hydrogen bond is the strongest between the molecules of:

- (a) HF (b) HCl (c) HBr (d) HI

**Explanatory Answer:** (A)

Hydrogen bond is only present between HF. Due to greater E.N of Fluorine and hydrogen.

23. Which halogen will react spontaneously with  $\text{Au}_{(s)}$  to produce  $\text{Au}^{3+}$ ?

- (a)  $\text{Br}_2$  (b)  $\text{F}_2$  (c)  $\text{I}_2$  (d)  $\text{Cl}_2$

**Explanatory Answer:** (D)

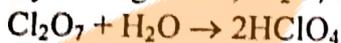
Gold reacts with  $\text{Cl}_2$  to form  $\text{AuCl}_3$ . Gold is soluble in aqua regia due to formation of soluble  $\text{AuCl}_3$ .

24. The anhydride of  $\text{HClO}_4$  is:

- (a)  $\text{ClO}_3$  (b)  $\text{ClO}_2$  (c)  $\text{Cl}_2\text{O}_5$  (d)  $\text{Cl}_2\text{O}_7$

**Explanatory Answer:** (D)

By adding water,  $\text{Cl}_2\text{O}_7$  changes to  $\text{HClO}_4$

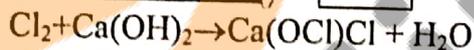


By removing  $\text{H}_2\text{O}$  from two molecules of  $\text{HClO}_4$ , it changes to  $\text{Cl}_2\text{O}_7$ .

25. Bleaching powder may be produced by passing chlorine over:

- (a) Calcium carbonate  
(b) Hydrated calcium sulphate  
(c) Anhydrous calcium sulphate  
(d) Calcium hydroxide

**Explanatory Answer:** (D)



$\text{Ca}(\text{OH})_2$  is also called slaked lime.

26. Which is the strongest acid?

- (a)  $\text{HClO}$  (b)  $\text{HClO}_2$  (c)  $\text{HClO}_3$  (d)  $\text{HClO}_4$

**Explanatory Answer:** (D)

As the number of oxygen increases, electrons shifted away from the H-atom and the tendency to form proton increases. Strength of oxyacids of halogens is as  $\text{HClO}_4 > \text{HClO}_3 > \text{HClO}_2 > \text{HClO}$

27. Which halogen occurs naturally in a positive oxidation state?

- (a) Fluorine (b) Chlorine  
(c) Bromine (d) Iodine

**Explanatory Answer:** (D)

Iodine occurs naturally in the form of sodium iodate  $\text{NaIO}_3$  and sodium periodate  $\text{NaIO}_4$ . Oxidation state of iodine in  $\text{NaIO}_3$  is +5 and in  $\text{NaIO}_4$  is +7.

28. An element that has a high ionization energy and tends to be chemically inactive would most likely to be:

- (a) an alkali metal (b) a transition element (c) a noble gas (d) a halogen

**Explanatory Answer:** (C)

Noble gases have very high ionization energy and least reactivity. Ionization energy increases from left to right in periods.

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# TEST NO.11

1. The state of hybridization of carbon atom in methane is:

- (a)  $sp^3$  (b)  $sp^2$   
(c)  $sp$  (d)  $dsp^2$

**Explanatory Answer:** (A)

Each carbon of alkane is  $sp^3$  hybridized.

2. In t-butyl alcohol, the tertiary carbon is bonded to:

- (a) Two hydrogen atoms (b) Three hydrogen atoms  
(c) One hydrogen atom (d) No hydrogen atom

**Explanatory Answer:** (D)

3. Which set of hybrid orbitals has planar triangular shape?

- (a)  $sp^3$  (b)  $sp$   
(c)  $sp^2$  (d)  $dsp^2$

**Explanatory Answer:** (C)

$sp$ -linear

$sp^2d$ -square planar

$sp^2$ -trigonal planar

$sp^3$ -tetrahedral

4. The chemist who synthesized urea from ammonium cyanate was:

- (a) Berzelius (b) Kolbe  
(c) Wohler (d) Lavoisier

**Explanatory Answer:** (C)

5. Linear shape is associated with which set of hybrid orbitals?

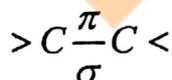
- (a)  $sp$  (b)  $sp^2$   
(c)  $sp^3$  (d)  $dsp^2$

**Explanatory Answer:** (A)

6. A double bond consists of:

- (a) Two sigma bonds  
(b) One sigma and one pi bond  
(c) One sigma and two pi bonds  
(d) Two pi bonds

**Explanatory Answer:** (B)



7. Ethers show the phenomenon of:

- (a) Position isomerism (b) Functional group isomerism  
(c) Metamerism (d) Cis-trans isomerism

**Explanatory Answer:** (b&c)

Ether shows functional group isomerism and metamerism.

$CH_3-O-CH_3$  and  $C_2H_5OH$  are functional group isomers.

$C_2H_5-OC_2H_5$  is metamer of

$CH_3-O-CH_2-CH_2-CH_3$

8. Select from the following which one is alcohol?

- (a)  $\text{CH}_3\text{-CH}_2\text{-OH}$   
 (c)  $\text{CH}_3\text{COOH}$

- (b)  $\text{CH}_3\text{-O-CH}_3$   
 (d)  $\text{CH}_3\text{-CH}_2\text{-Br}$

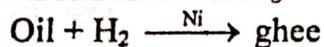
**Explanatory Answer:** (A)

In alcohol, hydrogen atom of alkane is replaced by  $-\text{OH}$  group.

9. Preparation of vegetable ghee involves:

- (a) Halogenation (b) Hydrogenation  
 (c) Hydroxylation (d) Dehydrogenation

**Explanatory Answer:** (b)



10. Formula of chloroform is:

- (a)  $\text{CH}_3\text{Cl}$  (b)  $\text{CCl}_4$  (c)  $\text{CH}_2\text{Cl}_2$  (d)  $\text{CHCl}_3$

**Explanatory Answer:** (D)

11. The presence of a double bond in a compound is the sign of:

- (a) Saturation (b) Unsaturation (c) Substitution (d) None

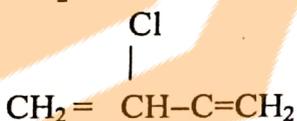
**Explanatory Answer:** (B)

The compound containing double or triple bonds are called unsaturated. e.g; alkenes, alkynes.

12. Vinyl acetylene combines with  $\text{HCl}$  to form:

- (a) Polyacetylene (b) Benzene (c) Chloroprene (d) Divinyl acetylene

**Explanatory Answer:** (C)

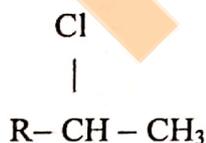


It is chloroprene used to prepare synthetic rubber.

13. The addition of unsymmetrical reagent to unsymmetrical alkene is in accordance with the rule:

- (a) Hund's rule (b) Markovnikov's rule  
 (c) Pauli's Exclusion Principle (d) Aufbau Principle

**Explanatory Answer:** (B)



Negative part ( $\text{Cl}^-$ ) will go to that carbon which has less hydrogen on it.

14. Synthetic rubber is made by polymerization of:

- (a) Chloroform (b) Acetylene (c) Divinyl acetylene (d) Chloroprene

**Explanatory Answer:** (D)

Acetylene polymerizes to form vinyl acetylene which changes to chloroprene by reacting with  $\text{HCl}$ . Chloroprene is used to make synthetic rubber.

15.  $\beta$ - $\beta'$ -dichloroethyl sulphide is commonly known as:

- (a) Mustard gas (b) Laughing gas

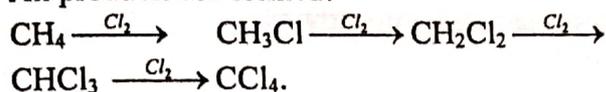
- (c) Phosgene gas (d) Biogas

**Explanatory Answer:** (A)

16. When methane reacts with  $\text{Cl}_2$  in the presence of diffused light, the products obtained are:
- (a) Chloroform only (b) Carbon tetrachloride only  
(c) Chloromethane and dichloromethane  
(d) Mixture of a, b, c

**Explanatory Answer:** (D)

All products are formed:



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## TEST NO.12

1. The benzene molecule contains:
- (a) Three double bonds (b) Two double bonds  
(c) One double bond (d) Delocalized  $\pi$  electron charge

**Explanatory Answer:** (D)

According to atomic orbital treatment, each carbon atom of benzene is  $sp^2$  hybridized and has one  $p_x$  orbital which is unhybrid. Each unhybrid  $p$  orbital forms a sheath of delocalized cloud of electrons above and below the carbon atoms.

2. Aromatic hydrocarbons are the derivatives of:
- (a) normal series of paraffins (b) alkene  
(c) benzene (d) cyclohexane

**Explanatory Answer:** (C)

3. Which of the following acid can be used as a catalyst in Friedel Craft's reactions?
- (A)  $\text{AlCl}_3$  (B)  $\text{HNO}_3$  (C)  $\text{BeCl}_2$  (D)  $\text{NaCl}$

**Explanatory Answer:** (A)

$\text{AlCl}_3$  is lewis acid and acts as catalyst.

4. Benzene cannot undergo:
- (a) substitution reactions (b) addition reactions  
(c) oxidation reactions (d) elimination reactions

**Explanatory Answer:** (D)

During elimination of benzene ring, triple bond should be formed which is not possible.

5. Amongst the following, the compound that can be most readily sulphonated is:
- (a) toluene (b) benzene  
(c) nitrobenzene (d) chlorobenzene

**Explanatory Answer:** (A)

Nitro group and halogen group both deactivate the ring and decreases the reactivity of ring. However, methyl group activates the ring and facilitates sulphonation.

6. During nitration of benzene, the active nitrating agent is:
- (a)  $\text{NO}_3$  (b)  $\text{NO}_2^+$

(c)  $\text{NO}_2$

(d)  $\text{HNO}_3$

**Explanatory Answer:** (B)

It is strongest electrophile among these. It is formed as:



7. Which compound is the more reactive?

(a) benzene

(b) Ethene

(c) Ethane

(d) Ethyne

**Explanatory Answer:** (B)

Alkenes are more reactive and alkanes are less reactive hydrocarbons.

8. The electrophile in aromatic sulphonation is:

(a)  $\text{H}_2\text{SO}_4$

(b)  $\text{HSO}_4^-$

(c)  $\text{SO}_3$

(d)  $\text{SO}_3^+$

**Explanatory Answer:** (C)

9. Aromatic compounds burn with sooty flame because:

(a) They have high percentage of hydrogen.

(b) They have a ring structure.

(c) They have high percentage of carbon.

(d) They resist reaction with air.

**Explanatory Answer:** (C)

Due to high percentage of carbon, aromatic compounds give sooty flame when burnt on flame.

10. The conversion of n-hexane into benzene by heating in the presence of Pt is called:

(a) Isomerization

(b) Aromatization

(c) Dealkylation

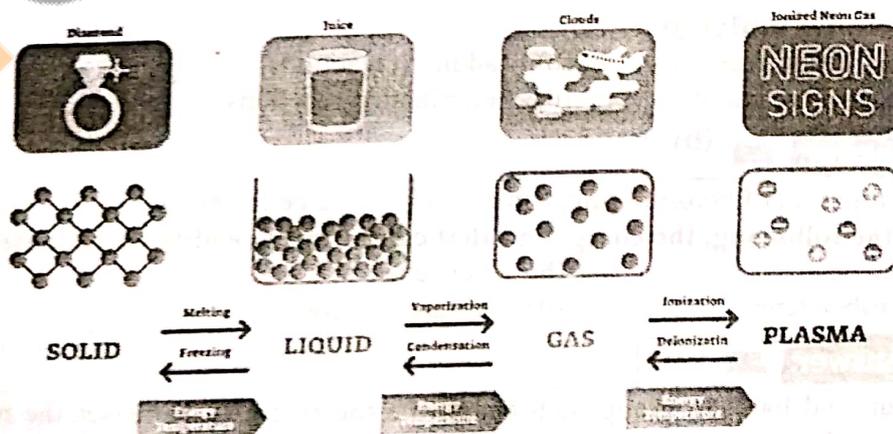
(d) Rearrangement

**Explanatory Answer:** (B)

In this reaction, an aliphatic hydrocarbon changes to aromatic hydrocarbon.



## States of Matter

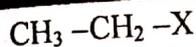


# TEST NO.13

1. In primary alkyl halides, the halogen atom is attached to a carbon which is attached to how many carbon atoms?

a) Two                      b) Three                      c) One                      d) Four

**Explanatory Answer:** (C)



2. The reactivity order of alkyl halides for a particular alkyl group is:

a)  $\text{F} > \text{Cl} > \text{Br} > \text{I}$       b)  $\text{Cl} > \text{Br} > \text{F} > \text{I}$       c)  $\text{I} > \text{Br} > \text{Cl} > \text{F}$       d)  $\text{Br} > \text{I} > \text{Cl} > \text{F}$

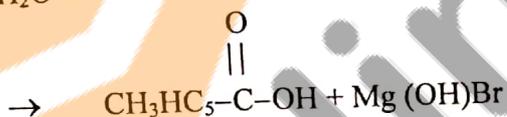
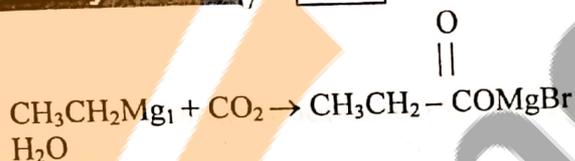
**Explanatory Answer:** (C)

Reactivity order depends upon the strength of bond energy. R-I has less bond energy than R-F.

3. When  $\text{CO}_2$  is made to react with ethyl magnesium iodide, followed by acid, hydrolysis, the product formed is:

a) Propane                      b) Propanoic acid  
c) Propanal                      d) Propanol

**Explanatory Answer:** (B)

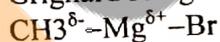


4. Grignard reagent is reactive due to:

a) the presence of halogen atom  
b) the presence of Mg atom  
c) the polarity of C - Mg bond  
d) none of above

**Explanatory Answer:** (C)

Grignard Reagent is reactive than other organic compounds due to polarity of C-Mg bond e.g;



5.  $\text{S}_\text{N}2$  reactions can be best carried out with:

a) Pri. alkyl halides                      b) Sec. alkyl halides  
c) Ter. alkyl halides                      d) All the three

**Explanatory Answer:** (A)

Nucleophile attack on carbon of C-X bond due to least steric hindrance and reaction takes place in single step.

6. Elimination bimolecular reactions involve:

a) First order kinetics                      b) Second order kinetics  
c) Third order kinetics                      d) Zero order kinetics

**Explanatory Answer:** (B)

In  $\beta$ -elimination, bimolecular reaction, rate of reaction depends upon the concentration of base

and substrate.

7. For which mechanisms, the first step involved is the same:

- a)  $E_1$  and  $E_2$       b)  $E_2$  and  $SN_2$   
c)  $SN_1$  and  $E_2$       d)  $E_1$  and  $SN_1$

**Explanatory Answer:** (D)

In  $E_1$  and  $SN_1$  mechanism, in first step carbocation is formed.

8. Alkyl halides are considered to be very reactive compounds towards nucleophiles, because:

- (a) They have an electrophilic carbon  
(b) They have an electrophilic carbon and a good leaving group.  
(c) They have an electrophilic carbon and a bad leaving group.  
(d) They have a nucleophilic carbon and a good leaving group.

**Explanatory Answer:** (B)



9. The rate of  $E_1$  reaction depends upon:

- a) The concentration of substrate      b) The concentration of nucleophile  
c) The concentration of substrate as well as nucleophile      d) None of the above

**Explanatory Answer:** (A)

$$\text{Rate} = k[\text{substrate}]$$

10. Which one of the following is not a nucleophile?

- a)  $H_2O$       b)  $H_2S$       c)  $BF_3$       d)  $NH_3$

**Explanatory Answer:** (C)

$BF_3$  is electron deficient molecule and acts as electrophile.

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## TEST NO.14

1. Acetic acid is manufactured by:

- (a) distillation      (b) fermentation  
(c) ozonolysis      (d) esterification

**Explanatory Answer:** (B)

Acetic acid is prepared by oxidation of ethanol. Ethanol is manufactured by fermentation process.

2. A carboxylic acid contains:

- (a) a hydroxyl group  
(b) a carboxyl group  
(c) a hydroxyl and carboxyl group  
(d) a carboxyl and aldehyde group

**Explanatory Answer:** (B)

A carboxylic acid contains  $-COOH$  carboxylic group in it.

3. Which acid is used in the manufacture of synthetic fibre?

- (a) Formic acid      (b) Oxalic acid  
(c) Carbonic acid      (d) Acetic acid

**Explanatory Answer:** (D)

Acetic is used for the manufacture of vinyl acetate,  $\text{CH}_2=\text{CH}-\text{OCOCH}_3$ . Vinyl acetate is used in polymerization.

4. Which following derivative cannot be prepared directly from acetic acid?

- (a) Acetamide (b) Acetyl chloride  
(c) Acetic anhydride (d) Ethyl acetate

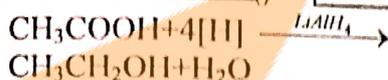
**Explanatory Answer:** (A)

Acetamide cannot be prepared directly from  $\text{CH}_3\text{COOH}$ . Acetic acid and  $\text{NH}_3$  react to form first of ammonium acetate, which on heating produces acetamide.

5. Which reagent is used to reduce a carboxylic group to an alcohol?

- (a)  $\text{H}_2/\text{Ni}$  (b)  $\text{H}_2/\text{Pt}$   
(c)  $\text{NaBH}_4$  (d)  $\text{LiAlH}_4$

**Explanatory Answer:** (D)



6. The solution of which acid is used for seasoning of food?

- (a) Formic acid (b) Acetic acid  
(c) Benzoic acid (d) Butanoic acid

**Explanatory Answer:** (B)

Vinegar enhances the flavor of food and used for seasoning.

7. An aqueous solution of an organic compound reacts with sodium carbonate to produce carbon dioxide gas. Which one of the following could be the organic compound?

- (a)  $\text{CH}_2=\text{CH}-\text{CH}_3$  (b)  $\text{CH}_3-\text{CHO}$   
(c)  $\text{CH}_3\text{COOC}_2\text{H}_5$  (d)  $\text{CH}_3-\text{CH}_2-\text{COOH}$

**Explanatory Answer:** (D)

Carboxylic acids react with  $\text{NaHCO}_3$  to form  $\text{CO}_2$ .



8. Which of the following is not a fatty acid?

- (a) Propanoic acid (b) Acetic acid (c) Phthalic acid (d) Butanoic acid

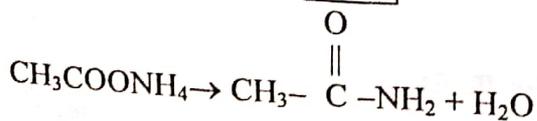
**Explanatory Answer:** (C)

Phthalic acid is an aromatic acid.

9. Acetamide is prepared by:

- a) heating ammonium acetate b) heating methyl cyanide  
c) heating ethyl acetate d) the hydrolysis of methyl cyanide

**Explanatory Answer:** (A)



# TEST NO.15

1. The pH range of the acid rain is:  
a) 7-6.5      b) 6.5-6      c) 6-5.6      d) less than 5

**Explanatory Answer:** (D)

2. Peroxyacetyl nitrate (PAN) is an irritant to human beings and it affects:  
a) eyes      b) ears      c) stomach      d) nose

**Explanatory Answer:** (A)

3. To avoid the formation of toxic compounds with chlorine, which substance is used for disinfecting water?  
a)  $\text{KMnO}_4$       b)  $\text{O}_3$       c) Alums      d) Chloramines

**Explanatory Answer:** (B)

4. A single chloride free radical can destroy how many ozone molecules?  
a) 100      b) 100000      c) 10000      d) 10

**Explanatory Answer:** (B)

5. Fungicides are the pesticides which:  
a) control the growth of fungus      b) kill insects      c) kill plants      d) kill herbs

**Explanatory Answer:** (A)

6. DDT is a:  
a) fungicide      b) insecticide  
c) herbicide      d) all

**Explanatory Answer:** (B)

7. The main pollutant of leather tanneries in the waste water is due to the salt of:  
a) lead      b) chromium (VI)  
c) copper      d) chromium (III)

**Explanatory Answer:** (B)

8. In purification of potable water the coagulant used is:  
a) nickel sulphate      b) copper sulphate  
c) barium sulphate      d) aluminium sulphate

**Explanatory Answer:** (D)

9. The temperature in the incineration process has a range:  
a) 900 to 1000°C      b) 650 to 1100°C  
c) 950 to 1300°C      d) 500 to 900°C

**Explanatory Answer:** (A)

10. Newspaper can be recycled again and again by how many times?  
a) 2      b) 3  
c) 4      d) 5

**Explanatory Answer:** (D)

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