



# **CHEMISTRY**

# BOOKS - MCGROW HILL EDUCATION CHEMISTRY (HINGLISH)

# **CHEMICAL REACTIONS**

**Elementary Questions** 

1. The valency o a phosphate ion is

**B.-**2

C. 3

D. -3

Answer: D

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**2.** The reaction  $2Na+C1_2 
ightarrow 2NaC1$  is an example of

A. combination reaction

B. decomposition reaction

C. displacement reaction

D. double decomposition reaction

Answer: A

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**3.** Which of the following reaction involves the combination of two elements?

A. 
$$CaO+CO_2 
ightarrow CaCO_3$$

B. 
$$4Na + O_3 
ightarrow 2Na_2O$$

C. 
$$SO_2+rac{1}{2}O_2
ightarrow SO_3$$

### D. $NH_3 + HC1 \rightarrow NH_4C1$

#### **Answer: B**

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4. When lead nitrate is heated it breaks down into lead monoxide, nitrogen dioxide and oxygen  $2Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 + O_2$ 

The reaction is an example of

A. combination reaction

B. decomposition reaction

C. double decomposition reaction

# D. displacement reaction

#### Answer: B

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**5.** Which of the following is a displacement reaction?

A.  $NaOH + HNO_3 \rightarrow NaNO_3 + H_2O$ 

 $\texttt{B.} \ Cu + 2AgNO \rightarrow Cu(NO_3)_2 + 2Ag$ 

C.  $2Hg + O_2 \rightarrow 2HgO$ 

D.  $FeC1_3 + 3NaOH 
ightarrow 3NaC1 + Fe(OH)_3$ 





**6.** Which of the following reaction will not take place?

A. 
$$Zn + FeSO_4 
ightarrow ZnSO_4 + H_2O$$

 $\mathsf{B.}\, 2K1 + C1_2 \rightarrow 2KC1 + I_2$ 

C.  $Zn + MgSO_4 
ightarrow ZnSO_4 + Mg$ 

D.  $Mg + CuSO_4 
ightarrow MgSO_4 + Cu$ 

#### Answer: C



**7.** The reaction in which to compounds exchange their ions to form two compounds is called

A. a displacement reaction

B. a decomposition reaction

C. an isomerization reaction

D. a metathesi reaction

Answer: D

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8. When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate of copper sulphide is obtained and the sulphuric acid so formed remains in the solution. The reaction is an example of

A. a combination reaction

B. a displacement reaction

C. a decomposition reaction

D. a double decomposition reaction

Answer: D



9. When the gases sulphur dioxide and hydrogen sulphide mix in the presence of water, the reaction  $SO_2+2H_2S o 2H_2O+3S$ 

Here hydrogen sulphide is acting as

A. an oxidising agent

B. a reducing agent

C. a dehydrating agent

D. a catalyst

Answer: B



10. In the reaction:  $2FeC1_2+C1
ightarrow 2FeC1_3$ Chlorine may be regarded as

A. an oxidising agent

B. a reducing agent

C. a catalyst

D. providing an inert medium

Answer: A

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# 11. In the following equations

# $Na_2CO_3 + xHC1 \rightarrow 2NaC1 + CO_2 + H_2O$

#### the value of x is

A. 1

B. 2

C. 3

D. 4

#### **Answer: B**



### 12. The equation

# $Cu + XHNO_3 ightarrow Cu(NO_3) + YNO_2 + 2H_2O$

the values of X and Y are

A. 3 and 1

B. 8 and 6

C. 4 and 2

D. 7 and 1 respectively

#### Answer: C



13. In the equation  $NaOH + HNO_3 \rightarrow NaNO_3 + H_2O$  nitric acid is acting as

A. an oxidising agent

B. an acid

C. a nitrating agent

D. a dehydrating agent

#### Answer: B



14. Which of the following is not balanced equation?

A. 
$$Ca(HO)_2+CO_2 o CaCO_3+H_2O$$
  
B.  $Fe+CuSO_4 o FeSO_4+Cu$   
C.  $Kc1O_4\stackrel{\Delta}{\longrightarrow}KC1+2O_2$ 

D.

 $Cu+2HNO_3 
ightarrow Cu(NO_3)_2+2NO_2+H_2O$ 

#### Answer: D

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15. Combustion of fuel is

A. displacement reaction

B. double displacement reaction

C. oxidation Reaction

D. isomerisation reaction

#### Answer: C

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16.  $BaC1_2 + H_2SO_4 
ightarrow BaSO_4 + 2HC1$  is

A. combination reaction

B. decomposition reaction

C. displacement reaction

D. double decomposition reaction

Answer: D

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**17.** Zinc can displace copper from copper sulphate solution bacause zine is

A. more reaction than copper

B. less reactive than copper

C. more stable than copper

D. less stable than copper

Answer: A

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**18.** When Magnesium is burnt in air, awhile ash remain as left over. What is this?

A.  $MgO_2$ 

B. MgO

C. Mg

D.  $Mg_3O$ 

Answer: B



**19.** Carbon dioxide reacts with carbon to form Carbon monoxide. This is an example of a

A. displacement reaction

B. double displacement reaction

C. combination reaction

# D. decomposition reaction

### Answer: C

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20. 
$$CaCO_3 \stackrel{Heat}{\longrightarrow} CaO + CO_2$$
 is known as

A. Electrolysis

B. Thermal decomposition

C. Displacement

D. Combination

**Answer: B** 

**21.** Which of the following is a decomposition reaction?

A.  $2KBr+C1_2 
ightarrow 2KC1+Br_2$ 

B.  $2Na + H_2O 
ightarrow 2NaOH + H_2$ 

 $\mathsf{C.}\, NH_4CNO \rightarrow NH_2CONH_2$ 

D. ZnCO\_(3) to ZnO + CO\_(2)`

Answer: D



22. the formula of Silver Phosphate is

# A. $AgPO_4$

# B. $Ag_3PO_4$

C.  $Ag_2(PO_4)_3$ 

 $\mathsf{D.}\,AG_2PO_4$ 

#### **Answer: B**



**23.** Which of the following is example of combination reaction?

A.  $H_2+C1_2
ightarrow 2HC1$ 

B. n-Hexane  $\xrightarrow{A1C1_3}$  neo hexane

C.  $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ 

D.  $N_2O_4 
ightarrow 2NO_2$ 

#### **Answer: A**



**24.** Which of the following reactions is not a decomposition reaction?

A. starch is converted to glucose in our body

B. proteins are digested to amino acids

C. magnesium ribbon is burnt in air

D. electricity is passed through water

Answer: C

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25. the reaction between acid and base to form salt

and water is an example of

A. decomposition reaction

B. combination reaction

C. displacement reaction

D. double displacement

Answer: D

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26. Which of the following statement is incorrect?

A. Metals like Cu, Ag, Au cannot diplace H from

acids

B. In reactivity series metals are arranged in

order of increasing reactivity

C. Silver cannot displace Cu from  $Cu(NO_3)_2$ 

D. Zince displaces Cu from  $CuSO_4$ 

Answer: B



### 27. In the balanced reaction

 $aFe_2O_3+bH_2
ightarrow cFe+dH_2O$ 

a, b, c and d, respectivel, are

A. 1123

B. 1111

C. 1323

D. 1223

Answer: C



**28.** Which of the following reactions are exothermic in nature?

A. Combustion of Carbon

B. Bond breaking

C. Bond formation

D. Both (a) and (c)

#### Answer: D

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**29.** Which of the following changes is not a physical change?

A. glowing of filament in bulb

B. combustion

C. boiling of water

D. sublimation



# 30. The substance that loses electrons is called as

A. oxidizing agent

B. reducing agent

C. catalyst

D. none of above

Answer: B



**31.** In the raction  $Mg+C1 
ightarrow MgC1_2$ 

A. magnesium is oxidized and  $C1_2$  is reduced

B. magnesium is reduced and  $C1_2$  is oxidized

C. magnesium gains 2 electrons

D. Chlorine loose 1 electron

**Answer: A** 



A. loses 2 electrons

B. loses 1 electron

C. gains 1 electron

D. gains 2 electrons

**Answer: A** 

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33. The process of reduction involves

A. removed of hydrogen

B. gain electrons

C. addition of oxygen

D. loss of electrons

#### Answer: B

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34. In the reaction $3MnO_2 + 4A1 
ightarrow 3Mn + 2A1_2O_3$  the oxidizing

agent is

A.  $MnO_2$ 

B. A1

 $\mathsf{C.}\,A1_{2}\ _{-}\ (3)$ 

D. Mn

Answer: A



## 35. In the reaction $H_2S+C1_2 ightarrow 2HC1+S$ , the

oxidizing agent is

A.  $H_2S$ 

B.  $C1_2$ 

C. HC1

D. S

#### Answer: B

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**36.** Which of the following statemant is correct?

A. oxidation involves gain of electron

B. substance which is reduced is redusing agent

C. exothermic process involves absorption of

heat

D. oxidation involves loss of electrons



# 37. Select Redox reaction from the following

# A. $Zn+CuSO_4 ightarrow ZnSO_4+Cu$

- B.  $CaO+2HC1 
  ightarrow CaC1_2+H_2O$
- C.  $NaOH + 2HC1 \rightarrow NaC1_2 + H_2O$
- D.  $CaCo_3 
  ightarrow CaO + CO_2$

#### Answer: A



38. the In reaction  $2FeC1_2 + SnC1_2 
ightarrow 2FeC1_2 + SnC1_4$ A.  $Fe^{+1}$  reduced to  $Fe^{+2}$ B.  $Sn^{+2}$  is reduced to  $Sn^{+1}$ C.  $Sn^{+2}$  oxidized to SnD.  $Fe^{+1}$  gains two electrons

#### Answer: A

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**39.** Which of the following reactions is not correct?

A. 
$$2AgNO_3 + Cu 
ightarrow Cu(NO_3)_2 + 2Ag$$

 $\mathsf{B.}\ C1_2 + 2KI \to KCl + I_2$ 

C.  $FeSO_4 + Cu 
ightarrow CuSO_4 + Fe$ 

D.  $CuSO_4 + Zn 
ightarrow ZnSO_4 + Cu$ 

#### Answer: C





A. Zn gets oxidized

B. Fe gets oxidized

C. Zn is oxidising agent

D. Zn and Fe both get oxidized

Answer: A

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A. Zn is most reaction, Fe is least reactive

B. Fe is most reaction and Cu is least reactive

C. Zn is most reaction and Cu is least reactive

D. Cu is most reaction, Fe is least reactive

**Answer: C** 



**42.** Which of the following reaction is not endothermic in nature?

A. breaking in bonds

B. digestion of food

C. combustion of Carbon

D. evaporation of water

Answer: C

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**43.** Choose the incorrect statemant.

A. physical change in reversible

B. physical change results is formation of new

substance

C. chemical change is permanent

D. physical change is accompanied by energy

change

**Answer: B** 

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**44.** Which of following is fast reaction?

A. reaction between  $H_2$  and  $O_2$  from  $H_2O$ 

B. reaction between acid and base to form salt

and water

C. hydrolysis of ester

D. hydrolysis of sugar to glucoe

Answer: B

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# **Higher Order Thinking Questions**

1. The following reaction

 $2Ba(NO_3)_2 
ightarrow BaO + 4NO_2 + O_2$ 

is an example of

A. decomposition reaction

B. redox reaction

C. none of these

D. both decomposition and redox reaction

Answer: D

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2. In the reaction

 $aFe(s)+bH_2O(g)
ightarrow mFe_3O_4(s)+nH_2(g)$ 

a, b, m and n respectively are

A. 6, 8, 2, 8,

B. 3, 4, 1, 4

C. 3, 4, 4, 1

D. 2, 3, 4, 4

Answer: B



**3.** Copper reacts with conc. $HNO_3$  top form copper nitrate, water and gives brown fumes of nitrogen oxide and the name of the reaction is

A.  $NO_2$ , combination reaction

- B. NO, redox reaction
- C.  $NO_2$ , redox reaction
- D.  $N_2O$  combination reaction

Answer: C



**4.** When an iron nail placed in copper sulphate solution, the reddish brown coating on the nail is

A. soft and dull

B. hard and flaky

C. smooth and shining

D. rough and grannular

Answer: B

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5. The mixing od aqueous solution od  $Na_2SO_4$  and  $BaC1_2$  results in the formation of

A. white precipitate of sodium chlride and is a

combination reaction

B. yellow precipitate of sodium chloride and is a

double displacement reaction

C. yellow precipitate of barium sulphate and is a

combination reaction

D. white precipitate of barium sulphate and is a

double displacemant reaction

Answer: D



6. In the reaction

 $MnO_2 + 4HC1 
ightarrow MnC1_2 + C1_2 + 2H_2O$ 

the substance getting reduced is

A.  $MnO_2$ 

B. HC1

C.  $MnC1_2$ 

D.  $C1_2$ 

Answer: A

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7.Thegivenreaction $NaOH + HC1 \rightarrow NaC1 + H_2O$  is na example ofA. neutralisation reactionB. double displacement reactionC. exothermic reaction

D. all of these

Answer: D



8. The valency of silver in silver carbonate  $Ag_2CO_3$ 

is

A. 1

B. 2

C. 3

D. zero

Answer: A



**9.** Which of the following reaction does not take place?

A. 
$$Cu+2H_{conc}1
ightarrow CuC1_2+H_2$$
  
B.  $Cu+2H_2SO_4 \stackrel{Heat}{\longrightarrow} CuSO_4+SO_2+2H_2O$   
C.

$$3Cu+8HNO_3 
ightarrow 3Cu(NO_3)_2+2NO+4H_2O_{dilute}$$

$$\mathsf{D}.\,Cu+2AgNO_3 
ightarrow Cu(NO_3)_2+2Ag$$

#### **Answer: A**



**10.** When megnesium is burnt in air, a white ash remains as left over. Aqueous solution of this white ash turns red litmus blue. The formula of the white ash and type of reaction respectively are

A. MgO, non-redox reaction

B. Mgo, redox reaction

C.  $Mg(OH)_2$ , decomposition reaction

D. MgO, displacement reaction

#### Answer: B

