CHEMISTRY

BOOKS - R SHARMA CHEMISTRY (HINGLISH)

THE S BLOCK ELEMENTS

Follow Up Test 1

1. The s- block elements of the periodic table are those in which the last elctron enters the

s-subshell of the___ shell.

A. penultimate

B. antepenultimate

C. outermost

D. foremost

Answer: C

 Watch Video Solution

2. How many groups belong to the s-block of the periodic table ?

A. Twelve

B. Two

C. Six

D. Ten

Answer: B

Watch Video Solution

3. How many s-block elements are known ?

A. 14

B. 13

C. 12

D. 11

Answer: C

 Watch Video Solution

4. Which of the following is incorrect regarding s-block elements ?

A. They do not occur in the free state.

B. They are scarcely distributed in nature in the combined state.

C. Alkali metals mostly occur as halides, oxides, silicates, borates, and nitrates.

D. Alkaline earth metals mainly occur as silicates, carbonates, sulphates, and

phosphates.

Answer: B

Watch Video Solution

5. Which of the following minerals contains both alkali and alkaline earth metals ?

A. Dolomite

B. Carnallite

C. Both (1) and (2)

D. None of these

Answer: B

Watch Video Solution

6. The most abundant alkali metal (in earth's crust) is

A. Rb

B. K

C. Na

D. Li

Answer: C

 Watch Video Solution

7. The most abundant alkaline earth metal (in earth's crust) is

A. Ba

B. Sr

C. Mg

D. Ca

Answer: D

Watch Video Solution

8. The radioactive s-block elements are

A. Ra and Ba

B. Ra and Fr

C. Fr and Cs

D. Rb and Sr

Answer: B

Watch Video Solution

9. Which of the following compounds contains both magnesium and silicon as constituents ?

A. Micas

B. Talc

C. Olivine

D. All of these

Answer: D

 Watch Video Solution

10. Kieserite is an ore of

A. K

B. Ca

C. Mg

D. Na

Answer: C

Watch Video Solution

Follow Up Test 2

1. If the atomic number of lithium is 3, then the atomic number of francium will be

A. 87

B. 86

C. 85

D. 84

Answer: A

 Watch Video Solution

2. The electronic configuration of caesium (Cs) can be represented as

A. $[Ar]6s^1$

B. $Kr\left[6s^1\right]$

C. $[Xe]6s^1$

D. $Rn\left[6s^1\right]$

Answer: C

Watch Video Solution

3. Above $380^{\circ}C$, lithium is miscible with molten

A. Na

B. K

C. Rb

D. all of these

Answer: A

Watch Video Solution

4. The second ionization enthalpies $(\Delta_i H_2)$ of alkali metals are

A. very low

B. low

C. high

D. very high

Answer: D

Watch Video Solution

5. The___ salts are mostly hydrated.

A. Cs

B. Li

C. K

D. Na

Answer: B

Watch Video Solution

6. Which of the following oxidation numbers (Ons) are exhibited by the alkali metals ?

A. $0 \text{ and } +1$

B. $+1 \text{ and } +2$

C. $only +1$

D. $0, +1, \text{ and } +2$

Answer: A

Watch Video Solution

7. Which of the following statements is incorrect for the alkali metals ?

A. The metallic (or electropositive) character increases down the group.

B. When freshly out, they are silvery white and on exposure to air, they are tarnished (i.e., become dull).

C. They assume a face-centered cubic lattice structure.

D. They are soft and can be cut with a knife.

Answer: C

Watch Video Solution

8. which of the following has the lowest melting point ?

A. Na

B. Li

C. K

D. Cs

Answer: D

 Watch Video Solution

9. Which of the alkali metals has the lowest density ?

A. Na

B. K

C. Rb

D. Cs

Answer: B

 Watch Video Solution

10. All the alkali metals and their salts (particularly chlorides due to their more volatile nature) impart a characteristic color to the oxidizing flame of Bunsen burner. Which

of the following imparts yellow color in a flame test?

A. Li

B. K

C. Na

D. Cs

Answer: C

 Watch Video Solution

11. Which of the following alkali metals is frequently used as a cathode in the photoelectric cells ?

A. Cs

B. K

C. Na

D. Li

Answer: A

Watch Video Solution

Follow Up Test 3

1. Alkali metals are

A. strong reducing agents

B. strong oxidizing agents

C. both strong reducing and oxidizing agents

D. neither strong reducing nor strong oxidizing agents

Answer: A

Watch Video Solution

2. Which of the following is the most powerful reducing agent in the gas phase ?

A. Cs

B. Li

C. K

D. Na

Answer: A

Watch Video Solution

3. Which of the following is the least powerful reducing agent in aqueous solution ?

A. Cs

B. Rb

C. Na

D. K

Answer: C

Watch Video Solution

4. Which of the following is incorrect regarding the reactive of alkali metals with water ?

A. All alkali metals react with water, liberating H_2 forming alkaline aqueous solution.

B. The reactivity decreases on moving down the group

C. Li liberates more energy than the other metals when it reacts with water.

D. Li metal does not catch fire during its reaction with water.

Answer: B

Watch Video Solution

5. Chemically, group I elements are very reactive and tarnish rapidly in air due to the formation of

A. oxides

B. hydroxides

C. carbonates

D. all of these

Answer: D

 Watch Video Solution

6. Alkali metals such as sodium are stored under

A. kerosene oil

B. acetone

C. chloroform

D. alcohol

Answer: A

Watch Video Solution

7. Which of the following is incorrect ?

A. Li is the only alkali metal that reacts with N_2 to form a nitride.

B. Li nitride is a colorless covalent solid.

C. Li nitride decomposes to the elements on heating to a high temperature.

D. Li nitride gives ammonia on reaction with water.

Answer: B

Watch Video Solution

8. When heated in excess of air, alkali metals form different types of oxides depending upon the nature of the metal. Which of the following alkali metals form surperoxides ?

A. All alkali metals except Li

B. All alkali metals except Li and Na

C. All alkali metals except Li, Na and K

D. All alkali metals except Fr

Answer: B

 Watch Video Solution

9. Which of the following is incorrect regarding the reaction of alkali metals with hydrogen ?

A. All the alkali metals react with dihydrogen on heating to form colorless crystalline ionic hydrides M^+H^-.

B. The order of reactivity of the alkali metals towards dihydrogen increases as we go down the group.

C. The ionic character of the hydrides decreases from Li to Cs.

D. The stability of these hydrides decreases from LiH to CsH.

Answer: B

 Watch Video Solution

10. Which of the following is not correct about the hydrides of alkali metals ?

A. They are ionic solids with high melting points.

B. They behave as strong reducing agents and their reducing power increases down the group.

C. These hydrides contain the hydride ion and liberate dihydrogen at the cathode during electrolysis.

D. They react with water and other compounds containing active H atom to

liberate dihydrogen.

Answer: C

 Watch Video Solution

11. Which of the following is correct regarding the reaction of alkali metals with halogens ?

A. Alkali metals react vigorously with halogens to form ionic halides M^+X^-,

B. The reactivity of alkali metals towards a particular halogen increases as we move down the group from Li to Cs.

C. The reactivity of halogens towards a particular alkali metal decreases from $F_2 \text{to} I_2$

D. All of these.

Answer: D

 Watch Video Solution

12. Which of the following is the most covalent in nature ?

A. LiF

B. LiCl

C. LiBr

D. LiI

Answer: D

Watch Video Solution

13. Which of the following is known as sylvite ?

A. KCl

B. KF

C. KBr

D. KI

Answer: A

Watch Video Solution

14. All alkali metals dissolve in liquid ammonia giving highly conducting ____ solutions.

A. colorless

B. deep blue

C. yellow

D. black

Answer: B

Watch Video Solution

15. Which of the following is incorrect regarding the solutions of alkali in liquid NH_3 ?

A. As the concentration increases above 3 M, the color of solution changes from dark blue to copper-bronze.

B. Blue colored solutions as well as bronze-colored solutions are paramagnetic.

C. These solutions conduct electricity better than any salt in any liquid and the

conductivity is similar to that of pure metals.

D. These solutions act as powerful reducing agents for the elements of groups 14, 15, and 16 for many compounds and coordination complexes. They even reduce an aromatic ring.

Answer: B

 Watch Video Solution

Follow Up Test 4

1. Which of the following is correct for monoxides (normal oxides) of alkali metals ?

A. They are ionic and strongly basic oxides.

B. They are pure white solids.

C. They have anti-fluorite structures.

D. All of these.

Answer: A

Watch Video Solution

2. On combustion in excess ofd air, lithium forms

A. normal oxides

B. peroxides

C. superoxides

D. both (1) and (2)

Answer: A

 Watch Video Solution

3. Which of the following in incorrect for the hydroxides of alkali metals ?

A. They are white crystalline solids.

B. These caustic alkalies are the strongest bases known in aqueous solution.

C. They readily dissolve in water with the evolution much heat. The solubility in water decreases as move down the group.

D. The basis strength of hydroxides increases on moveing down the group.

Answer: C

Watch Video Solution

4. All alkali metal peroxides contain the $[-O-O]^{2-}$ ion. They are

A. diamagnetic and are colored compounds

B. paramagnetic and are colored compounds

C. paramagnetic and are oxidizing agents

D. diamagnetic and are oxidizing agents

Answer: D

Watch Video Solution

5. All alkali metal superoxides contain the ion $[O_2]$. They are

A. paramagnetic

B. colored compounds

C. oxidizing agents

D. all of these

Answer: D

Watch Video Solution

6. The alkali metal halides (MX) are all high melting, colorless crystalline solids which can be conveniently prepared by the reaction of

the appropriate ____ with aqueous hydrohalic acids (HX).

A. oxide

B. hydroxide

C. carbonate

D. all of these

Answer: D

Watch Video Solution

7. Alkali metal halides have high negative enthalpies of formation. The $\Delta_f H^\circ$ values for _____ become less negative as we go down the group.

A. iodides

B. bromides

C. chlorides

D. fluorides

Answer: D

Watch Video Solution

Watch Video Solution

8. The magnitude of enthalphy of formation of alkali metal halides decreases in the order

A. iodide $>$ bromide $>$ chloride $>$ fluoride

B. bromide gt iodide gt fluoride gt chloride

C. fluoride gt chloride gt iodide gt bromide

D. fluoride gt chloride gt bromide gt iodide

Answer: D

 Watch Video Solution

9. Which of the following is soluble in organic solvents like ethanol ?

A. LiCl

B. NaCl

C. KCl

D. RbCl

Answer: A

 Watch Video Solution

10. Which of the following has the maximum melting point but minimum solubility in water ?

A. KCl

B. NaCl

C. CsCl

D. RbCl

Answer: B

Watch Video Solution

11. Which of the following is the correct order of hyrated ionic radii ?

A. $Li^+ < Na^+ < K^+ < Rb^+ < Cs^+$

B. $Rb^+ < Na^+ < Li^+ < Cs^+ < K^+$

C. $Cs^+ < Rb^+ < K^+ < Na^+ < Li^+$

D. $Li^+ < K^+ < Na^+ < Rb^+ < Cs^+$

Answer: C

Watch Video Solution

12. Which of the following compounds is almost insoluble in water ?

A. LiF

B. LiCl

C. LiBr

D. LiI

Answer: A

 Watch Video Solution

13. The melting and boiling points of alkali metal halides always follow the trend ,

A. Iodide gt bromide gt chloride gt fluoride

B. Bromide gt chloride gt iodide gt fluoride

C. Fluoride gt chloride gt bromide gt iodide

D. Chloride gt fluoride gt bromide gt iodide

Answer: C

Watch Video Solution

14. Which of the following are oxosalts ?

(i) Carbonates , (ii) Nitrates

(iii) Bicarbonates , (iv) Nitrites

A. (i), (ii), (iii), (iv)

B. (i), (ii), (iii)

C. (i), (iii)

D. (ii),(iv)

Answer: A

 Watch Video Solution

15. Which of the following is nott true?

A. Allalkali metal carbonates are remarkable stable up to$1000^{\circ}C$ above which they first melt and then eventually decompose into oxides.

B. The thermal stability of alkali metal carbonates increases as as we mpove down the group.

C. The aqueous solution of alkali metals carbonates are mild alkalies.

D. None of these.

Answer: A

Watch Video Solution

16. Which of the following alkali metal carbonates doesnot existin the solid state?

A. $RbHCO_3$

B. $KHCO_3$

C. $NaHCO_3$

D. $LiHCO_3$

Answer: D

Watch Video Solution

17. Sodium bicarbonate $(NaHCO_3)$ on gentle heting produces

A. $Na_2O_3 + CO_2$

B. $Na_2CO_3 + CO$

C. $NaCO_3 + CO_2 + H_2O$

D. $Na_2CO_3 + CO + H_2O$

Answer: C

Watch Video Solution

18. Which of the following has the maximum solubility in water?

A. $LiHCO_3$

B. $NaHCO_3$

C. $KHCO_3$

D. $RbHCO_3$

Answer: D

Watch Video Solution

Follow Up Test 5

1. Lithium the first element of group 1 differs from the rest of the elements of the group in

many repects. This anomalous behavious of Li is due to

(i). Very small size of its atom and ions

(ii). High polarizing power (i.e., charge/radius ratio) of $Li^{\oplus}$ ion

(iii). Relatively high electronegativity and high ionization enthalpy

(iv). Absence of vacant d-subshell in its outmost shell

A. (i),(ii)

B. (iii),(iv)

C. (i),(ii),(iii),(iv)

D. (i),(ii),(iii)

Answer: C

 Watch Video Solution

2. Lithium is the _____among all alkali metals.

A. most reactive and te strongest agent

B. least reactive but the weakest reducing agent

C. most reactive but the weakest reducing agnet

D. least reactive and the weakest reducing agent

Answer: B

Watch Video Solution

3. On combution in air Li forms

A. Li_2O

B. Li_3N

C. Li_2O_2

D. both (1) and (2)

Answer: D

Watch Video Solution

4. Which of the following decomposes to form lithium oxide, Li_2O?

A. $LiOH$

B. Li_2CO_3

C. $LiNO_3$

D. all of these

Answer: D

Watch Video Solution

5. Which of the following is incorrect about lithium ??

A. LiOH is a strong base

B. Unlike other alkali metals, Li does not react with ethyne to from lithium ethynide.

C. Unlike other alkali metals, Li forms dilithium acetylide on heating with C.

D. Lithium has a greater tendency to form complexes than other alkali metals.

Answer: A

 Watch Video Solution

6. Which of the following is only sparingly soluble in water?

A. Li_2CO_3

B. Li_3PO_4

C. LiF

D. $LiOH$

Answer: D

Watch Video Solution

7. The similarity between Li to group 1 and Mg of group 2 is called a diagonal relation. It arises because

A. Li and Mg atoms have similar sizes

B. Li ad Mg ions have similar sizes

C. Li and Mg have similar sizes

D. all of these

Answer: D

Watch Video Solution

8. Which of the following is not correct regarding Li and Mg?

A. Baoth LiOH ad $Mg(OH)_2$ are weak bases.

B. Both form ionic nitrides when heated I an atmosphere of $N_2(g)$.

C. Carbonates pof both metals decompose on heating to form the corresponding oxides.

D. Both Li and Mg form solid bicarbonates.

Answer: D

 Watch Video Solution

Follow Up Test 6

1. Which of the following is known as soda ash?

A. $NaCO_3$

B. $Na_2O_3.H_2O$

C. $Na_2CO_3.3H_2O$

D. $Na_2CO_3.5H_2O$

Answer: A

Watch Video Solution

2. sodium carbonate commonly known as washing soda is manufactured by

A. ammonia-soda process

B. Solvay-ammonia process

C. Solvay process

D. all of these

Answer: D

 Watch Video Solution

3. In the solvay process.

A. Brine solution is carbonated with CO_2 to from $NaHCO_3$ which on decomposition at $150^\circ C$ produces Na_2CO_3

B. Sodium amalgam reacts with water to produce NaOH, Which on treatment with CO_2 gives Na_2CO_3

C. Carbon dioxide is passed through ammoniacal brine to form $NaHCO_3$ which on decomposition at $150^\circ C$ produces Na_2CO_3

D. brine solution is made to react with $BaCO_3$ to produce Na_2CO_3

Answer: C

Watch Video Solution

4. The function of ammonia in the Solvay process is to

A. make $(NH_4)_2CO_3$

B. solution alkaline

C. produce a sufficient amount of HCO_3^- ion

D. none of these

Answer: C

Watch Video Solution

5. The raw materials of the Solvay precess are

A. $NaCI, NH_3, \text{and} CaCO_3$

B. $NaCI, NH_3, \text{and} CaO$

C. $NaCI, NH_3, \text{and} CaCI_2$

D. $NaCI, NH_3, \text{and} CO_2$

Answer: A

Watch Video Solution

6. Which of the following is the byproduct of the Solvay process ?

A. NH_4CI

B. $Ca(OH)_2$

C. $CaCI_2$

D. $NaHCO_3$

Answer: C

Watch Video Solution

7. Potassium carbonate cannot be made by the Solvay process because

A. potassium hydrogen carbonate is unstable

B. potassium hydrogen carbonate is rather too soluble in water to be precipitated

C. potassium carbonate is insoluble in water

D. potassium carbonate is soluble in water

Answer: B

Watch Video Solution

8. Sodium carbonate is a white crystalline solid which crystallizes as

A. $Na_2CO_3.7H_2O$

B. $Na_2CO_3.5H_2O$

C. $Na_2CO_3.9H_2O$

D. $Na_2CO_3.10H_2O$

Answer: D

Watch Video Solution

9. On heating below 373 K, washing soda loses ____molecules of water of crystallization.

A. nine

B. eight

C. ten

D. seven

Answer: A

 Watch Video Solution

10. Which of the following is incorrect about sodium carbonate ?

A. With hot milk of lime, it reacts to form sodium hydroxide

B. It reacts with dilute mineral acids evolving $CO_2(g)$

C. It undergoes hydrolysis to form an acidic solution

D. None of these

Answer: C

Watch Video Solution

11. The fusion mixture is a mixture of

A. $NaHCO_3$ and $KHCO_3$

B. Na_2CO_3 and K_2CO_3

C. $NaHCO_3$ and K_2CO_3

D. Na_2CO_3 and $KHCO_3$

Answer: B

Watch Video Solution

12. Sodium carbonate is used in ____industries.

A. paper

B. paint

C. textile

D. all of these

Answer: A

 Watch Video Solution

Follow Up Test 7

1. Sodium hydroxide is manufactured by the

A. Solvay process

B. Castner-Kellner process

C. Leblanc process

D. Downs process

Answer: B

Watch Video Solution

2. Which of the following serves as an intermediate electrode in Castner-Kellner's process ?

A. Mercury

B. Iron

C. Graphite

D. Platinum

Answer: A

Watch Video Solution

3. In Castner-Kellner's process, a brine solution is electrolyzed.Which of the following is obtained at the cathode ?

A. Na(Hg)

B. NaOH

C. $H_2(g)$

D. All of these

Answer: D

 Watch Video Solution

4. Which of the following is incorrect about sodium hydroxide ?

A. It is a white, translucent crystalline solid.

B. It is highly soluble in water to give a strong alkaline solution which is bitter in taste, corrosive, and soapy to touch.

C. Crystals of NaOH are hygroscopic.

D. It reacts with the CO_2 in the atmosphere to form Na_2CO_3.

Answer: C

Watch Video Solution

5. $NaOH + CO 200^{\circ} C \xrightarrow[5-10atm]{r} A.$ The product A is:

A. HCOONa

B. Na_2CO_3

C. $NaHCO_3$

D. CO_2

Answer: A

Watch Video Solution

6. Which of the following impurities present in sodium chloride are deliquescent ?

(i) Na_2SO_4, $(ii)MgCI_2$

(iii) CaSO_(4) , (iv) $CaCI_2$

A. (i),(iv)

B. (ii),(iv)

C. (i),(ii)

D. (iii),(iv)

Answer: B

Watch Video Solution

7. Which of the following is added to the table salt to prevetn it from absorbing moisture and to make it flow freely in the rainy season ?

A. Ca_3PO_4

B. $Ca(H_2PO_4)_2$

C. Ca_3PO_4 or $Ca(H_2PO_4)_2$

D. None of these

Answer: C

Watch Video Solution

8. Baking soda is

A. Na_2CO_3

B. $NaHCO_3$

C. Na_2SO_4

D. $NaNO_3$

Answer: B

Watch Video Solution

9. Baking powder is a mixture of

(i) $NaHCO_3$, (ii) starch

(iii) $Ca(H_2PO_4)_2$, $(iv)NaAI(SO_4)_2$

A. (i),(ii)

B. (i),(iii)

C. (i),(ii),(iii)

D. (i),(ii),(iii),(iv)

Answer: D

Watch Video Solution

10. Which of the following is the most abundant metal in the human body ?

A. Fe

B. Cu

C. K

D. Na

Answer: C

Watch Video Solution

11. Sodium and potassium, although so similar chemically, differ qualitatively in their

A. ability to penetrate cell membranes

B. transport mechanisms

C. efficiency to activate enzymes

D. all of these

Answer: D

 Watch Video Solution

12. Na^+ ions are found primarily on the outside of cells, being located in blood plasma and in the interstitial fluid which surrounds the cells, whilst K^+ ions are present inside the cell.

These ions participate in

A. the transmission of nerve signals

B. regulating the flow of water across cell membranes

C. the transport of sugars and amino acids into cells

D. all of these

Answer: D

 Watch Video Solution

Follow Up Test 8

1. Group 2 of the periodic table consists of six elements. Except____, they are commonly known as alkaline earth metals or simply, alkaline earths.

A. Be

B. Mg

C. Ca

D. Sr

Answer: A

Watch Video Solution

2. beryllium isnot very familiar because

(i). It is not very abundant

(ii). It is inert

(iii). It is radioactive

(iv). It is difficult to extract

(v). It is difficult to extract

A. (i), (ii)

B. (i), (iii)

C. (i),(iv)

D. (ii),(iii)

Answer: C

Watch Video Solution

3. Mg is the sixth most abundant element(by weight) in the earth's crust. It is found as carbonate, sulphate, ad silicate. Which of the following is knows as magnesite?

A. $MgSO_4 7H_2O$

B. $MgCO_3$

C. $MgCO_3 . CaCO_3$

D. $MgSO_4 . H_2O$

Answer: B

Watch Video Solution

4. Calcium is the fifth most abundant element (by weight) in the earth's crust. Which of the following is called anhydrite?

A. $CaSO_4$

B. $CaSO_4.2H_2O$

C. CaF_2

D. $3\left[Ca_3(PO_4)_2\right].CaF_2$

Answer: A

Watch Video Solution

5. Celestite is an ore of

A. Ba

B. Mg

C. Sr

D. Ca

Answer: C

Watch Video Solution

6. The electronic configuration of Ca is

A. $[Kr]4s^2$

B. $[Ar]4s^2$

C. $[Ne]4s^2$

D. $[He]4s^2$

Answer: B

Watch Video Solution

7. Which of the following I a correct statement?

A. The firstand second ionization enthalpies of group elementsare greater than those of group 1 elements

B. the first and second ionization enthalpies of group elementsare smaller than those of group 1 elements

C. the first ionization enthalpy of group 2 element greater but he second ionization enthalpy issmall than those of group 1 elements.

D. The first ionization enthalpy of group 2 elements smaller but the seconds but the seconds ionization enthalpy is greater that those of group 1 elements.

Answer: C

 Watch Video Solution

8. Which of the following has the lowest first ionization thalpy?

A. Ca

B. Sr

C. Ba

D. Ra

Answer: C

Watch Video Solution

9. Which of the following ions has the maximum hyration enthalpy?

A. Be^{2+}

B. Mg^{2+}

C. Ca^{2+}

D. Sr^{2+}

Answer: A

Watch Video Solution

10. Which of the following alkaline earth metals are somewhat greyish?

A. Mg and Ca

B. Be and Mg

C. Ca and Sr

D. Sr and Ba

Answer: B

Watch Video Solution

11. Which of the following has the lowest melting point?

A. Be

B. Mg

C. Ca

D. Sr

Answer: B

Watch Video Solution

12. Which of the following has the highest boiling point?

A. Be

B. Mg

C. Ca

D. Sr

Answer: A

Watch Video Solution

13. Which of the following has the lowest density?

A. Be

B. Mg

C. Ca

D. Sr

Answer: C

Watch Video Solution

14. Which of the following alkaline earth metals imparts green color to the flame?

A. Ra

B. Ba

C. Sr

D. Ca

Answer: B

Watch Video Solution

15. Which of the following is incrrect ?

A. Alkaline earth metals like alkali metals have high electrical and thermal conductivities.

B. Alkaline earth metls are more electropositive (or metallic) than alkali metals.

C. The electropositive (or metallic) character of alkaline earth metals

increases down the group.

D. None of these

Answer: B

 Watch Video Solution

16. Which of the following group 2 elements form covalent compounds in anhydrous state ?

A. Mg

B. Ca

C. Sr

D. Be

Answer: D

 Watch Video Solution

17. Which of the following oxidation numbers are exhibited by group 2 elements ?

A. $0, +1$

B. $0, \ +1, \ +2$

C. $0, \ +2$

D. $+1, \ +2$

Answer: C

Watch Video Solution

Follow Up Test 9

1. Which of the following does not react with steam even at red heat ?

A. Be

B. Mg

C. Ca

D. Sr

Answer: A

Watch Video Solution

2. Which of the following does not react readily with water in spite of its favorable reduction potential ?

A. Ba

B. Sr

C. Ca

D. Mg

Answer: D

Watch Video Solution

3. Which of the following reacts with cold water quite readily ?

A. Ca

B. Sr

C. Be

D. All of these

Answer: D

Watch Video Solution

4. Which of the following group 2 elements are stored in paraffin ?

A. All group 2 elements

B. All group 2 elements except Be

C. All group 2 elements except Be and Mg

D. All group 2 elements except Be, Mg, and Ca

Answer: C

 Watch Video Solution

5. The reaction of which of the following groups 2 elements with oxygen is used to start a thermite reaction with A1?

A. Be

B. Mg

C. Ca

D. Sr

Answer: B

Watch Video Solution

6. Which of the following group 2 elements does not form a nitride ?

A. Be

B. Mg

C. Ca

D. All group 2 elements form nitrides

Answer: D

Watch Video Solution

7. Which of the following reacts with water liberating NH_3 ?

A. Be_3N_2

B. Mg_3N_2

C. Ca_3N_2

D. All of these

Answer: D

Watch Video Solution

8. Which of the following peroxides is not known ?

A. BaO_2

B. SrO_2

C. CaO_2

D. BeO_2

Answer: D

Watch Video Solution

9. Group 2 halides, MX_2, can be made by

A. heating the metals with the halogen

B. the action of halogen acid on the metal

C. the action of halogen acid on the metal carbonate, metal hydroxide, and metal oxide

D. all of these

Answer: D

 Watch Video Solution

10. Which of the following is not true for the beryllium halides ?

A. They are covalent.

B. They are hygroscopic and fume in air.

C. They sublime.

D. They conduct electricity.

Answer: D

 Watch Video Solution

11. $BeCl_2.4H_2O \xrightarrow{\Delta} P$

The product P is

A. $BeCl_2$

B. BeO

C. $Be(OH)_2$

D. BeOCl

Answer: C

Watch Video Solution

12. Which of the following reactions is used to make anhydrous beryllium halides ?

A. $2BeO + CCI_4 \xrightarrow{800^\circ C} 2BeCl_2 + CO_2$

B. $BeO + C + CI_2 \xrightleftharpoons{700^\circ C} BeCl_2 + CO$

C. $(NH_4)_2[BeF_4] \xrightarrow{\Delta} BeF_2 + 2NH_4F$

D. All of these

Answer: D

Watch Video Solution

13. All the group 2 elements except___combine with dihydrogen upon heating to form their hydrides,MH_2.

A. Mg

B. Be

C. Ca

D. Sr

Answer: B

Watch Video Solution

14. Which of the following metals is rendered passive by conc. HNO_3?

A. Ba

B. Mg

C. Ca

D. Be

Answer: D

Watch Video Solution

15. Which of the following metals is amphoteric ?

A. Be

B. Mg

C. Ca

D. Ba

Answer: A

 Watch Video Solution

16. Which of the following is incorrect about group 2 metals ?

A. They all dissolve in liquid NH_3.

B. Dilute solutions of group 2 metals in liquid NH_3 are bright blue in color but the concentrated solutions are bronze colored.

C. Solutions of group 2 metals in liquid NH_3 decompose very slowly, forming amides and evolving H_2.

D. The evaporation of NH_3 from the solutions of group 2 metals gives the metals.

Answer: D

Watch Video Solution

17. Which of the following is not true?

A. Group 2 elements are electropositive, strong reducing agents but not as

strong as group 1 elements.

B. The reducing power of groups 2 elements increases down the group.

C. Be has got the most negative standard reduction potential.

D. The magnesium cation is more easily reduced than the cations of the heavier members of the group.

Answer: C

 Watch Video Solution

Follow Up Test 10

1. All the group 2 elements burn in O_2 to form oxides MO. These oxides can also be obtained by the thermal decomposition of

(i) carbonates , (ii) nitrates

(iii) sulphates, (iv) hydroxides

A. (i),(ii)

B. (i),(iii)

C. (i),(iv)

D. (i),(ii),(iii),(iv)

Answer: D

Watch Video Solution

2. Which of the following oxides has a $4:4$ zinc sulphide (wurtzite) structure ?

A. BaO

B. BeO

C. CaO

D. SrO

Answer: B

 Watch Video Solution

3. The enthalpies of formation of group 2 oxides are quite high (highly negative) and, consequently, they are stable to heat. Which of the following is the most stable ?

A. BeO

B. MgO

C. CaO

D. SrO

Answer: C

 Watch Video Solution

4. Which of the following oxides react exothermically with water forming hydroxides ?

A. CaO

B. SrO

C. BaO

D. All of these

Answer: D

 Watch Video Solution

5. Which of the following oxides of group 2 elements is amphoteric ?

A. SrO

B. BeO

C. MgO

D. CaO

Answer: B

 Watch Video Solution

6. The hydroxide of ___is obtained by treating the metal with cold water.

A. Ca

B. Sr

C. Ba

D. all of these

Answer: D

 Watch Video Solution

7. Which of the following hydroxides is the most soluble in water ?

A. $Mg(OH)_2$

B. $Ba(OH)_2$

C. $Ca(OH)_2$

D. $Sr(OH)_2$

Answer: B

Watch Video Solution

8. Which of the following hydroxides of group 2 elements is amphoteric ?

A. $Mg(OH)_2$

B. $Ca(OH)_2$

C. $Be(OH)_2$

D. $Sr(OH)_2$

Answer: C

Watch Video Solution

9. The most thermally stable hydroxide is

A. $Ba(OH)_2$

B. $Sr(OH)_2$

C. $Ca_{OH\ -}(2)$

D. $Mg(OH)_2$

Answer: A

Watch Video Solution

10. Which of the following halides are ionic in nature ?

A. MgX_2

B. CaX_2

C. SrX_2

D. All of these

Answer: D

 Watch Video Solution

11. All the halides of group 2 elements form hydrates and are hygroscopic (absorb water vapor from the air). Which of the following is the most hydrated chloride ?

A. $MgCI_2$

B. $CaCI_2$

C. $SrCI_2$

D. $BaCI_2$

Answer: A

Watch Video Solution

12. When hydrated $MgCI_2.6H_2O$ is trongly heated,

A. anhydrous $MgCI_2$ is formed

B. MgO is formed

C. Mg(OH)CI is formed

D. Mg(OH)HCI is formed

Answer: B

Watch Video Solution

13. The hydrated halides of ____ cannot be dehydrated on heating.

A. Be and Mg

B. Mg and Ca

C. Ca and Sr

D. Sr and Ba

Answer: A

Watch Video Solution

14. Fused BeF_2 is

A. ionic

B. covalent

C. both ionic and covalent

D. a polymeric compound

Answer: B

 Watch Video Solution

15. Which of the following compounds is highly soluble in water ?

A. CaF_2

B. MgF_2

C. BeF_2

D. BaF_2

Answer: C

Watch Video Solution

16. Which of the following compounds are water soluble ?

A. $MgCI_2$

B. $CaCI_2$

C. $SrCI_2$

D. All of these

Answer: D

Watch Video Solution

17. Which of the following solids is polymeric ?

A. $BaCI_2$

B. $CaCI_2$

C. $BeCI_2$

D. $MgCI_2$

Answer: C

Watch Video Solution

18. Beryllium chloride vapor contains

A. $BeCI_2$

B. $(BeCI_2)_2$

C. $(BeCI_2)_3$

D. Both (1) and (2)

Answer: D

 Watch Video Solution

19. Because it is cheap (a byproduct of the Solvay process) and deliquescent, anhydrous $CaCI_2$ is often used to dry gases and organic liquids. However, it cannot be used to dry ammonia and ethanol since it forms complexes having the respective formulas

A. $CaCI_2.8NH_3$ and $CaCI_2.4C_2H_5OH$

B. $CaCI_2.4NH_3$ and $CaCI_2.4C_2H_5OH$

C. $CaCI_2.8NH_3$ and $CaCI_2.8C_2H_5OH$

D. $CaCI_2.4NH_3$ and $CaCI_2.8C_2H_5OH$

Answer: A

Watch Video Solution

20. Which of the following is incorrect about the carbonates of alkaline earth metals ?

A. They are insoluble in water.

B. They are obtained as white precipitates when calculated amount of CO_2 is passed through the solution of group 2 hydroxides.

C. They are precipitated when sodium or ammonium carbonate solution is added to an aqueous solution of water soluble salt of group 2 elements.

D. All the carbonates are ionic.

Answer: D

Watch Video Solution

21. Which of the following carbonates is the least soluble in water ?

A. $CaCO_3$

B. $BaCO_3$

C. $MgCO_3$

D. $BeCO_3$

Answer: B

Watch Video Solution

22. Which of the following carbonates is the most thermally stable ?

A. $BeCO_3$

B. $MgCO_3$

C. $CaCO_3$

D. $BaCO_3$

Answer: D

Watch Video Solution

23. Which of the following bicarbonates exists in the solid state ?

A. $BeHCO_3$

B. $MgHCO_3$

C. $CaHCO_3$

D. None of these

Answer: D

Watch Video Solution

24. Sulphates of group 2 metals are prepared by the action of sulphuric acid on

(i) metals, (ii) metal oxides

(iii) metal hydroxides, (iv) metal carbonates

A. (i), (ii)

B. (i),(ii), (iii)

C. (i),(ii),(iii),(iv)

D. (ii), (iii), (iv)

Answer: D

 Watch Video Solution

25. Which of the following sulphates crystallizes without water of crystallization ?

A. $BaSO_4$

B. $CaSO_4$

C. $MgSO_4$

D. $BeSO_4$

Answer: A

Watch Video Solution

26. Which of the following sulphates is sparingly soluble in water ?

A. $BeSO_4$

B. $MgSO_4$

C. $CaSO_4$

D. $BaSO_4$

Answer: C

Watch Video Solution

27. Which of the following compounds has the highest temperature of decomposition ?

A. $BeSO_4$

B. $CaSO_4$

C. $MgSO_4$

D. $SrSO_4$

Answer: D

Watch Video Solution

28. Which of the following sulphates is useful in diagnosing stomach or duodenal ulcers ?

A. $BaSO_4$

B. $SrSO_4$

C. $CaSO_4$

D. $MgSO_4$

Answer: A

Watch Video Solution

29. Group 2 nitrates are prepared in solution by the action of nitric acid on

A. oxides

B. hydroxides

C. carbonates

D. all of these

Answer: D

Watch Video Solution

30. Which of the following nitrates crystallizes as anhydroms salt?

A. $Be(NO_3)_2$

B. $Ba(NO_3)_2$

C. $Mg(NO_3)_2$

D. $Ca(NO_3)_2$

Answer: D

Watch Video Solution

31. Which of the following nitrates decomposes on heating, giving the oxide ?

A. $Ba(NO_3)_2$

B. $Sr(NO_3)_2$

C. $Ca(NO_3)_2$

D. All of these

Answer: D

Watch Video Solution

Follow Up Test 11

1. Which of the following group 2 elements forms a basic nitrate in addition to the normal salt ?

A. Ba

B. Sr

C. Be

D. Ca

Answer: C

Watch Video Solution

2. Beryllium, the first member of group 2, shows an anomalous behavior as compared to Mg and the rest of the members on account of

A. exceptionally small atomic and ionic radii

B. high ionization enthalpy

C. absence of vacant d-orbitals in its valence shell

D. all of these

Answer: D

Watch Video Solution

3. Beryllium shows a diagonal relationship with

A. calcium

B. boron

C. aluminium

D. magnesium

Answer: C

Watch Video Solution

4. Which of the following is incorrect for both B and Al?

A. Both are resistant to the action of conc. HNO_3

B. Both $BeCI_2$ and $AICI_3$ have chlorine bridged dimers in the vapor phase.

C. Both $BeCI_2 \text{and} AICI_3$ act as strong Lewis bases.

D. Both have a tendency to form covalent compounds.

Answer: C

 Watch Video Solution

5. Calcium oxide is called quick lime. It is prepared by the thermal decomposition of

(i) calcium carbonate, (ii) calcium nitrate

(iii) calcium sulphate, (iv) calcium hydroxide

A. (i),(ii)

B. (ii),(iii)

C. (iii),(iv)

D. (i),(ii),(iii),(iv)

Answer: D

Watch Video Solution

6. Quick lime is prepared on a commercial scale by heating ____ in a rotary kiln at 1070-1270 K.

A. $CaSO_4$

B. $Ca(NO_3)_2$

C. $CaCO_3$

D. $Ca(OH)_2$

Answer: C

Watch Video Solution

7. Which of the following is incorrect for quick lime ?

A. Pure CaO is a crystalline white solid of very high melting point.

B. On heating with ammonium salts, it liberates NH_3 gas.

C. It forms calcium carbide when heated with coke in an electric furnace at 2273 K.

D. It combines with acids and with solid acidic oxides at high temperature to form salts.

Answer: A

Watch Video Solution

8. The addition of limited amount of water disintegrates the hard lumps of CaO. During this process called ____, a hissing sound and a large amount of heat is released.

A. hydration of lime

B. hydrolysis of lime

C. dehydration of lime

D. slaking of lime

Answer: D

Watch Video Solution

9. Soda lime is a mixture of

A. $NaOH$ and $CaCO_3$

B. Na_2CO_3 and $CaCO_3$

C. NaOH and CaO

D. $NaOH$ and $Ca(OH)_2$

Answer: C

Watch Video Solution

10. Lime is used for

A. the softening of hard water

B. the manufacture of cement

C. the manufacture of calcium carbide

D. all of these

Answer: D

Watch Video Solution

11. Calcium hydroxide is called slaked lime. It is prepared on a commercial scale by adding water to

A. $CaCO_3$

B. CaO

C. $CaCI_2$

D. CaO_2

Answer: B

Watch Video Solution

12. Which of the following is incorrect for slaked lime ?

A. It is a white amorphous powder.

B. It is sparingly soluble in water.

C. The solubility increases with rise in temperature.

D. None of these.

Answer: C

Watch Video Solution

13. A suspension of slaked lime in water is called

A. lime water

B. milk of lime

C. baryta water

D. both (1) and (2)

Answer: B

Watch Video Solution

14. Bleaching powder is prepared by passing chlorine into

A. $Ca(OH)_2$

B. CaO

C. $CaCI_2$

D. $CaCO_3$

Answer: A

Watch Video Solution

15. Which of the following changes occur when an excess of $CO_2(g)$ is passed into a clear solution of limewater ?

A. A white precipitate of $CaCO_3$ is formed.

B. A white precipitate of $CaCO_3$ is formed initially which changes into soluble $CA(HCO_3)_2$ on passing excess CO_2 gas.

C. A white precipitate of $Ca(HCO_3)_2$ is formed.

D. A white precipitate of both $CaCO_3 \text{and} Ca(HCO_3)_2$ is formed.

Answer: B

Watch Video Solution

16. Limestone rock is the commonest form of calcium carbonate which also occurs with ____ carbonate as dolomite.

A. Be

B. Sr

C. Ba

D. Mg

Answer: D

Watch Video Solution

17. Calcium carbonate, commonly called limestone, is prepared by passing $CO_2(g)$ through

A. $CaCI_2$

B. $Ca(OH)_2$

C. $Ca(HCO_3)_2$

D. $CaSO_4$

Answer: B

Watch Video Solution

18. Which of the following in incorrect for $CaCO_3$?

A. It is a white fluffy powder.

B. It is almost insoluble in water.

C. When heated to 1200 K, it decomposes to evolve O_2.

D. it reacts with dilute acid to liberate CO_2.

Answer: C

Watch Video Solution

19. Calcium carbonate along with ___ is used as a flux in the extraction of metals such as iron.

A. $BeCO_3$

B. $BaCO_3$

C. $SrCO_3$

D. $MgCO_3$

Answer: D

Watch Video Solution

20. Calcium carbonate is used as

(i) a filler in cosmetics

(ii) a constituent of chewing gum

an antacid

mild abrasive in toothpaste

A. (i),(ii),(iii),(iv)

B. (i),(ii), (iii)

C. (i),(iii)

D. (i),(iv)

Answer: A

Watch Video Solution

21. Plaseter of Paris, a white powder, is

A. $CaSO_4.2H_2O$

B. $CaSO_4.\ \frac{1}{2}H_2O$

C. $CaSO_4$

D. $CaSO_4.\ H_2O$

Answer: B

Watch Video Solution

22. Plaster of Paris is obtained when gypsum is heated to

A. 293 K

B. 493 K

C. 593 K

D. 393 K

Answer: D

 Watch Video Solution

23. Plaster of Paris has a remarkable property of setting with water. On mixing with one-third its weight of water, it forms a plastic mass that sets into a hard mass of interlocking crystals of ____ within 5 to 15 min.

A. $CaSO_4.2H_2O$

B. $CaSO_4.\ H_2O$

C. $CaSO_4.3H_2O$

D. $CaSO_4.4H_2O$

Answer: A

Watch Video Solution

24. The raw materials for the manufacture of Portland cement (or just cement) are limestone,

A. clay, and sand

B. sand, and gypsum

C. clay, and gypsum

D. gypsum, and alumina

Answer: C

Watch Video Solution

25. Cement is essentially a finely powdered mixture of calcium silicates and aluminates along with small quantities of gypsum which sets into a hard stone-like mass when treated with water. Which of the following important ingredients present in Portland cement contributes to the maximum extent?

A. Dicalcium silicate

B. Tricalcium silcate

C. Tricalcium aluminate

D. Both (1) and (2)

Answer: B

Watch Video Solution

26. Which of the following in incorrect ?

A. Cement containing no iron is white.

B. Cement containing excess amount of lime cracks during setting.

C. Setting of cement is and endothermic process.

D. Setting of cement is an example of hydration.

Answer: C

Watch Video Solution

27. All enzymes that utilize ATP in phosphate transfer require

A. Mg

B. Ca

C. both (1) and (2)

D. Ba

Answer: A

 Watch Video Solution

28. The main pigment for the absorption of light in green plants is chlorophy II-a which contains

A. Be

B. Mg

C. Ca

D. Sr

Answer: B

 Watch Video Solution

29. About 99% of body Ca is present in bones and teeth as

A. apatatite

B. fluorapatite

C. both (1) and (2)

D. hydroxyapatite

Answer: C

Watch Video Solution

30. Ca^{2+} ions play an important role in

(i) neuromuscular function

(ii) interneuronal transmission

(iii) cell membrane integrity

(iv) blood coagulation

A. (i), (ii)

B. (ii),(iii)

C. (ii),(iii), (iv)

D. (i),(ii),(iii),(iv)

Answer: D

 Watch Video Solution

31. The calcium concentration in plasma is regulated at about ___ mgL^{-1}.

A. 50

B. 70

C. 100

D. 90

Answer: C

Watch Video Solution

32. Bone is not an inert and unchanging substance but is continuously being solubilized and redeposited to the extent of ___ mg per day.

A. 400

B. 350

C. 450

D. 300

Answer: A

 Watch Video Solution

Question Bank Level I

1. Calcium sulphate is sparingly soluble in

A. benzene

B. alcohol

C. acetic acid

D. water

Answer: D

Watch Video Solution

2. Sodium hydroxide is

A. hydroscopic

B. deliquescent

C. photosensitive

D. efflorescent

Answer: B

Watch Video Solution

3. Excess of Na^+ ions in our system causes

A. anemia

B. low blood pressure

C. high blood pressure

D. diabetes

Answer: C

Watch Video Solution

4. The substance not likely to contain $CaCO_3$ is

A. a marble statue

B. dolomite

C. sea shells

D. calcined gypsum

Answer: D

Watch Video Solution

Question Bank Level Ii

1. RbO_2 is a

A. peroxide and diamagnetic

B. superoxide and paramagnetic

C. superoxide and diamagnetic

D. peroxide and paramagnetic

Answer: B

Watch Video Solution

2. Moar conductivites of $Li^+, Na^+, K^+ \text{and} Rb^+$ ions in aqueous solutions are in the following order.

A. $Rb^+ > K^+ > Na^+ > Li^+$

B. $Li^+ > Rb^+ > K^+ > Na^+$

C. $Li^+ > Na^+ > K^+ = Rb^+$

D. $Li^+ > Na^+ = K^+ < Rb^+$

Answer: A

Watch Video Solution

3. Which pair of the following chlorides does not impart color to the flame ?

A. $BeCI_2$ and $SrCI_2$

B. $MgCI_2$ and $CaCI_2$

C. $BeCI_2$ and $MgCI_2$

D. $CaCI_2$ and $BaCI_2$

Answer: C

Watch Video Solution

4. Calcium is obtained by the

A. roasting of limestone

B. reduction of $CaCI_2$ with carbon

C. electrolysis of a solution of $CaCI_2$ in water

D. electrolysis of molten $CaCI_2$

Answer: D

Watch Video Solution

5. A solution of sodium metal in liquid ammonia is strongly reducing due to the presence of

A. solvated clectrons

B. sodium amide

C. sodium hydride

D. sodium atoms

Answer: A

Watch Video Solution

6. The metallic luster exhibited by sodium is explained by

A. existence of body centered cubic lattice

B. excitation of free electrons

C. diffucion of sodium ions

D. oscillation of loose electrons

Answer: D

Watch Video Solution

7. A metal M readily forms its sulphate MSO_4 which is water soluble. It forms oxide MO which becomes inert on heating. It forms insoluble hydroxide which is soluble in $NaOH$. The metal M is:

A. Be

B. Ca

C. Sr

D. Mg

Answer: A

Watch Video Solution

8. The ionic mobility of alkali metal ions in aqueous solution is maximum for:

A. Na^+

B. Rb^+

C. Li^+

D. K^+

Answer: B

Watch Video Solution

9. Beryllium and aluminimum exhibit many properties which are similar . But, the two elements differ in

A. forming polymeric hydrides

B. exhibiting maximum covalency in compounds

C. forming covalent halides

D. exhibiting amphoteric nature in their oxides

Answer: B

 Watch Video Solution

10. The most abundant alkali metal in sea water is

A. Li

B. Na

C. K

D. Rb

Answer: B

Watch Video Solution

11. The most abundant alkaline earth metal in sea water is

A. Mg

B. Ca

C. Sr

D. Ba

Answer: A

 Watch Video Solution

12. Which of the following compounds contains potassium ?

A. Trona

B. Carnallite

C. Borax

D. Saltpetre

Answer: B

 Watch Video Solution

13. The inner shells of electrons are completely filled in

A. Li

B. Na

C. K

D. Both (1) and (2)

Answer: D

 Watch Video Solution

14. Lithium is softer than

A. Na

B. K

C. Rb

D. none of these

Answer: D

Watch Video Solution

15. Lithium is the srtrongest reducing agent in the aqueous solution because of the highest

A. enthalpy of sublimation

B. ionization enthalpy

C. enthalpy of hydration

D. all of these

Answer: C

Watch Video Solution

Watch Video Solution

16. Alkali metals liberate H_2 gas when they react with

A. acetylene

B. alcohol

C. water

D. all of these

Answer: D

Watch Video Solution

17. Which of the following alkali-metal hydroxides is the least soluble in water ?

A. CaOH

B. KOH

C. NaOH

D. LiOH

Answer: D

Watch Video Solution

18. Which of the following compounds is the most stable?

A. NaCl

B. NaI

C. NaF

D. NaBr

Answer: C

Watch Video Solution

19. The alkali metal cation having the least ionic mobility is

A. Li^+

B. Na^+

C. K^+

D. Cs^+

Answer: A

Watch Video Solution

20. Which of the following is insoluble in organic solvents?

A. LiI

B. LiBr

C. LiCl

D. LiF

Answer: D

 Watch Video Solution

21. $NaNO_3$ when heated to $500^\circ C$ given

A. $NaNO_2 + O_2 + N_2$

B. $NaNO_2 + O_2$

C. $NaNO_2$ only

D. $Na_2O + N_2$

Answer: B

Watch Video Solution

22. Which of the following decomposes more readily than the other forming the oxide?

A. $NaNO_3$

B. KNO_3

C. $LiNO_3$

D. $RbNO_3$

Answer: C

Watch Video Solution

23. Which of the following compounds does not contain calcium?

A. Carnalite

B. Anhydrite

C. Gypsum

D. Fluorapatite

Answer: D

Watch Video Solution

24. Which of the following has the highest melting and boiling points?

A. Ll

B. Na

C. K

D. Ba

Answer: C

Watch Video Solution

25. Which of the following alkaline earth metals do not impart any color to the flame?

A. Ca,Sr

B. Mg,Ca

C. Be,Mg

D. Sr,Ba

Answer: B

Watch Video Solution

26. Which one among the following is the most basic?

A. $Sr(OH_2)$

B. $Ba(OH)_2$

C. $Ca(OH)_2$

D. $Mg(OH)_2$

Answer: D

Watch Video Solution

27. Which of the following compounds is covalent?

A. CaO

B. $MgSO_4$

C. $Ba(NO_3)_2$

D. BeF_2

Answer: A

Watch Video Solution

28. Which of the following chlorides does not respond to the flame test?

A. $MgCl_2$

B. $CaCl_2$

C. $SeCl_2$

D. $BaCl_2$

Answer: A

Watch Video Solution

29. Which of the following is incorrect for both Be and Al?

A. Carbides of both the metals react with water liberating C_2H_2 gas.

B. Oxides and hydroxides of both Be and Ajl are amphoteric and dissolve in NaOH solution as well as ydrochloric acid solution.

C. Oxides of both the metals are hard, high-melting insoluble solids.

D. Salts of both the metals form hydrated ions in aqueous solution.

Answer: A

Watch Video Solution

30. Milk of lime reacts with chlorine to form _____, a constituent of bleaching powder.

A. $Ca(OCI)_2$

B. $Ca(CIO_2)_2$

C. $Ca(ClO_3)_2$

D. $Ca(ClO_4)_2$

Answer: A

Watch Video Solution

31. The most abundant metal present in the human body is

A. Ca

B. Mg

C. Na

D. K

Answer: A

 Watch Video Solution

Question Bank Level Iii

1. Sodium peroxide which is a yellow solid, when exposed to air becomes white due to the formation of:

A. NaOH and Na_2CO_3

B. NaOH and H_2O_2

C. Na_2O and O_3

D. Na_2O

Answer: A

Watch Video Solution

2. The molecular formula of Glauber's salt is

A. $MgSO_4.6H_2O$

B. $CuSO_4, 5H_2O$

C. $FeSO_4, 7H_2O$

D. $Na_2SO_4, 10H_2O$

Answer: D

Watch Video Solution

3. In curing cement plasters, water is sprinkled from time to time. This helps in

A. keeping it cool

B. hydrated sand gravel mixed with cement

C. developing interlocking needle-like crystals of hydrated silicated

D. converting sand into silicic acid

Answer: C

Watch Video Solution

4. KO_2 is used in oxygen cylinders in space and submarines because it

A. produces ozone

B. absorbs CO_2

C. eliminates moisture

D. absorbs CO_2 and increase O_2 content

Answer: D

Watch Video Solution

5. One mole of magnesium nitride on reaction with an excess of water gives

A. two moles of ammonia

B. two moles of nitric acid

C. one mole of nitric acid

D. one mole of ammonia

Answer: A

Watch Video Solution

6. The number and type of bonds between two carbon atoms in CaC_2 are:

A. two sigma, two pi

B. two sigma, one pi

C. one sigma, two pi

D. one sigma, one pi

Answer: C

Watch Video Solution

7. Which of the following is not an ore of magnesium?

A. Magnesite

B. Carnallite

C. Dolomite

D. Barytes

Answer: D

 Watch Video Solution

8. Which of the alkali metals is lighter than water?

A. k

B. Na

C. Li

D. All of these

Answer: D

 Watch Video Solution

9. Which of the following is incorrect about the hydroxides of alkali metals?

A. The hydroxides, which are obtained by the reaction of the oxides with water, react with acids to form salts and water.

B. They react with CO_2 (even traces in the air) forming the carbonates.

C. They react with amphoteric oxides and liberate NH_3 from both ammonium salts and coordination complexes.

D. They are all thermally stable.

Answer: D

Watch Video Solution

10. Which of the following dissovles in water to produce hydroxides?

A. Na

B. Na_2O

C. Na_2O_2

D. NaO_2

Answer: D

Watch Video Solution

11. Which of the following is almost insoluble in water?

A. LiI

B. KI

C. RbI

D. CsI

Answer: D

Watch Video Solution

12. The solubility of most of the alkali metal halides except those of ___ decreases on descending the group.

A. fluorides

B. chlorides

C. bromides

D. iodides

Answer: A

Watch Video Solution

13. Which of the following chlorides exist as hydrates?

(i) $MgCl_2$ (ii) NaCl

(iii) KCl (iv) $CaCl_{92})$

A. i,ii

B. ii,iii

C. i,iv

D. iii,iv

Answer: C

Watch Video Solution

14. Anhydrous magnesium chloride can be prepared by heating $MgCl_26H_2O$

A. in an atmosphere of nitrogen

B. in a current of dry HCl gas

C. with magnesium

D. with concentrated HCl

Answer: B

Watch Video Solution

15. Baryta water is used for detecting___gas.

A. CO_2

B. CO

C. NH_3

D. O_2

Answer: A

Watch Video Solution

16. Which of the following is used in the preparation of mortar, a building material ?

A. CaO

B. $Ca(OH)_2$

C. $CaCO_3$

D. $CaCl_2$

Answer: B

Watch Video Solution

17. Cement is a product obtained by combining a material rich in lime (CaO) with other material such as clay which contains silica SiO_2) along with the oxides of

A. Al

B. Fe

C. Mg

D. All of these

Answer: D

Watch Video Solution

Question Bank Level Iv

1. "Electron" is an alloy of

A. Mg and Fe

B. Mg and Al

C. Mg and Zn

D. Mg and Ni

Answer: C

Watch Video Solution

2. The sodium D-line arises from the electronic trasnition _____ in Na atoms formed momentarily in the flame.

A. $3s^1 \rightarrow 4s^1$

B. $3s^1 \rightarrow 3p^1$

C. $3s^1 \rightarrow 4d^1$

D. $3s^1 \rightarrow 4f^1$

Answer: B

 Watch Video Solution

3. The crystal structure of Na_2O resembles

A. antifluorite structure

B. fluorite structure

C. rock-salt structure

D. rutile structure

Answer: A

Watch Video Solution

4. Which of the following statements is incorrect?

A. NaOH dissolves PbO_2 forming soluble sodium plumbate.

B. NaOH dissovles SnO_2 forming soluble sodium stannate.

C. NaOH dissolves HgO forming soluble sodium mercurate.

D. NaOH solution dissovles Al_2O_3 forming soluble sodium aluminate.

Answer: C

 Watch Video Solution

5. Which of the following bicarbonates consists of dimeric anions in the crystalline state?

A. $CsHCO_3$

B. $RbHCO_3$

C. $KHCO_3$

D. $NaHCO_3$

Answer: C

Watch Video Solution

6. $NaNO_3$ on being heated to $800^\circ C$ gives

A. $Na_2O + O_2 + N_2$

B. $NaN_3 + O_2$

C. $NaNO_2 + O_2$

D. $Na + N_2 + O_2$

Answer: A

Watch Video Solution

7. Which of the following is the densest metal?

A. Be

B. Mg

C. Ca

D. CsI

Answer: D

Watch Video Solution

8. Which of the following is least reactive in the electrochemical series?

A. Na

B. Cr

C. Sr

D. Ba

Answer: A

 Watch Video Solution

9. Which of the following compounds is used to make prisms and cell windows for spectrophotometres?

A. BeF_2

B. MgF_2

C. CaF_2

D. BaF_2

Answer: C

Watch Video Solution

10. Which of the following is widely used for treating ice on roads, particularly in very cold countries?

A. $BaCl_2$

B. $CaCl_2$

C. $MgCl_2$

D. $SrCl_2$

Answer: B

Watch Video Solution

Archives

1. The correct order of increasing thermal stability of $K_2CO_3, MgCO_3, CaCO_3,$ and $BeCO_3$ is

A.

$$K_2CO < MgCO_3 < CaCO_3 < BeCO_3$$

B.

$$BeCO_3 < MgCO_3 < K_2CO_3 < CaCO_3$$

C.

$$BeCO_3 < MgCO_3 < CaCO_3 < K_2CO_3$$

D.

$$MgCO_3 < BeCO_3 < CaCO_3 < K_2CO_3$$

Answer: C

Watch Video Solution

2. In which of the following is the hydration energy higher than the lattice energy?

A. $SrSO_4$

B. $BaSO_4$

C. $MgSO_4$

D. $MgSO_4$

Answer: C

Watch Video Solution

3. The product obtained on fusion of $BaSO_4$ and Na_2CO_3 is

A. $BaCO_3$

B. BaO

C. $Ba(OH)_2$

D. $BaHSO_4$

Answer: A

Watch Video Solution

4. When washing soda is heated

A. CO is released

B. $CO + CO_2$ is released

C. CO_2 is released

D. water vapor is released

Answer: D

Watch Video Solution

5. Baking soda is

A. $NaHCO_3$

B. $NaHCO_3.6H_2O$

C. Na_2CO_3

D. $Na_2CO_3.10H_2O$

Answer: A

Watch Video Solution

6. NaOH is prepared by the

A. Down cell

B. Castner cell

C. Solvary process

D. Castner-Kellner cell

Answer: D

Watch Video Solution

7. The correct sequence of increasing covalent character is represented by

A. $BeCl_2 < NaCl < LiCl < LiCl$

B. $NaCl < LiCl < BeCl_2$

C. $BeCl_2 < LiCi < NaCl$

D. $LiCl < NaCl < BeCl_2$

Answer: B

Watch Video Solution

8. The correct order of solubility of the sulphates of alkaline earth metals in water is

A. $Be > Ca > Mg > Ba > Sr$

B. $Mg > Be > Ba > Ca > Sr$

C. $Be > Mg > Ca > Sr > Ba$

D. $Mg > Ca > Ba > Sr$

Answer: C

Watch Video Solution

9. Which of the following is not an ore of magnesium?

A. Gypsum

B. Magnesite

C. Dolomite

D. Carnallite

Answer: A

Watch Video Solution

10. Photoelectric effect is the maximum in

A. Cs

B. Na

C. K

D. Li

Answer: A

Watch Video Solution

11. Which of the following is monovalent?

A. Alkali metals

B. Alkaline earth metals

C. Metallorids

D. Metals

Answer: A

Watch Video Solution

12. Superoxide of potassium is

A. K_2O

B. K_2O_2

C. KO_2

D. K_2O_3

Answer: C

Watch Video Solution

13. Carnallite on electrolysis gives

A. Ca and Cl_2

B. Na and CO_2

C. Al and Cl_2

D. Mg and Cl_2

Answer: D

Watch Video Solution

14. On dissolving moderate amount of sodium metal in liquid ammonia at low temperature, which of the following does not occur ?

A. Blue colored solution is not obtained.

B. Na^+ ions are formed in the solution.

C. Liquid NH_3 remains diamagnetic.

D. Liquid NH_3 becomoes a good conductor of electricity.

Answer: C

Watch Video Solution

15. Sodium metal reacts with Al_2O_3 at high temperature to give a sodium compound X X reacts with carbon dioxide in water to form Y.Y is

A. Na_2O_2

B. Na_2O

C. Na_2CO_3

D. $NaAlO_2$

Answer: C

Watch Video Solution

16. Aqueous NaCl solution is electrolyzed using platinum electodes. What is the product formed at cathode?

A. Na

B. H_2

C. O_2

D. Cl_2

Answer: B

Watch Video Solution

17. What are the products formed when Li_2CO_3 undergoes decomposition?

A. $Li_2 + CO$

B. $Li_2O + CO$

C. $Li_2CO + CO_2$

D. $LiO_2 + CO$

Answer: C

Watch Video Solution

18. What is the reaction occuring at the anode in Down's process for the extraction of sodium ?

A. $4OH^- \rightarrow 2H_O + O_2 + 4e^-$

B. $Na^+ + e^- \rightarrow Na$

C. $2Cl^- \rightarrow Cl_2 + 2e^-$

D. $NaOH \rightarrow Na^+ + OH^-$

Answer: C

Watch Video Solution

19. In the Solvary process of manufacture of Na_2CO_3. the byproducts are

A. NH_4Cl, CaO

B. CaO, Na_2CO_3

C. $CaCl_2, CO_2, NH_3$

D. Na_2CO_3, CO_2

Answer: C

Watch Video Solution

20. In electrolysis of $NaCl$ when Pt electrode is taken H_2 is liberated at cathode while Hg cathode it forms sodium amalgam because

A. Hg is more inert than Pt

B. more voltage is required to reduce H^+ at Hg than at Pt

C. Na is dissolved in Hg while it does not dissove in Pt

D. concentration of H^+ ions is larger when Pt electrode is taken

Answer: D

Watch Video Solution

21. When sodium is treated with sufficient oxygen/air, the product obtained is

A. Na_2O

B. Na_2O_2

C. NaO_2

D. NaO

Answer: A

Watch Video Solution

22. which of the following has the lowest melting point ?

A. Li

B. Na

C. K

D. Cs

Answer: D

 Watch Video Solution

23. Magnesium can be obtanied by

A. reducing MgO with coke

B. reducing Mg salt solution with Fe

C. electrolysis of fused mg salt

D. electrolysis of $Mg(NO_3)_2$ solution.

Answer: C

Watch Video Solution

24. A solution of $MgCl_2$ in water has pH

A. < 7

B. > 7

C. 7

D. 14.2

Answer: A

Watch Video Solution

25. In view of their low ionisation energies, the alkali metals are

A. weak oxidizing agents

B. strong reducing agents

C. strong oxidizing agents

D. weak reducing agents

Answer: B

Watch Video Solution

26. On heating quicktime with coke in an electric furnace, we get

A. Ca and CO_2

B. $CaCO_3$

C. CaO

D. CaC_2

Answer: D

Watch Video Solution

27. The number of covalent bonds formed by beryllium is

A. 2

B. 3

C. 4

D. 5

Answer: A

 Watch Video Solution