CHEMISTRY

JEE MAIN AND ADVANCED

THE S-BLOCK ELEMENTS

Example

1. What are s — block elements?

Watch Video Solution

2. Name alkali metals in increasing order of atomic number.

Watch Video Solution

3. Which of the following isn't considered as an alkaline earth metal ?

Watch Video Solution

4. Give the name and electronic configuration of second alkali metal.

Watch Video Solution

5. Diagonal Relationship Of Lithium With Magnesium

Watch Video Solution

6. Alkali metals never occur free in nature because

Watch Video Solution

7. The alkali metals are soft due to-

Watch Video Solution

8. Why does alkali metals impart characteristic colour to the flame?

Watch Video Solution

9. How flame test helps in distinguishing alkali metals?

Watch Video Solution

10. Why do alkali metal tarnishes in air?

Watch Video Solution

11. Name the product formed when alkali metals reacts with water.

Watch Video Solution

12. The alkali metal halides are ionic or covalent?

Watch Video Solution

13. Alkali metals are strong reducing agents.

Watch Video Solution

14. What kind of oxides are formed by lithium?

Watch Video Solution

15. How alkali metal halides can be prepared?

Watch Video Solution

16. What are oxo-acids?

Watch Video Solution

17. Anomalous Behaviour Of Lithium

Watch Video Solution

18. The main process for the manufacture of sodium carbonate is

Watch Video Solution

19. What impurities are present in brine solution?

Watch Video Solution

20. Which cell is used for manufacture of sodium hydroxide.

Watch Video Solution

21. Why alkaline earth metals have smaller ionic and atomic radii as compared to that of alkali metals?

Watch Video Solution

22. What colours are imparted by calcium, strontium and barium to the flame?

Watch Video Solution

23. What products are formed on thermal decomposition of $(NH_4)_2BeF_4$?

Watch Video Solution

24. What is the trend of formation of ionic compound in alkaline earth metals?

Watch Video Solution

25. Write two characteristics of halides of beryllium

Watch Video Solution

26. Why beryllium is different from other members of its group in some properties?

Watch Video Solution

27. Why CO_2 is removed when $CaCO_3$ is heated in a rotary kiln?

Watch Video Solution

28. How calcium hydroxide is prepared?

Watch Video Solution

29. How calcium carbonate is prepared?

Watch Video Solution

30. Plaster Of Paris

Watch Video Solution

Illustration

1. An excess of KO_2 is placed in a closed container of CO_2(g). After reaction is completed. Will the gas pressure be same, greater or less than initial value. Example.

Watch Video Solution

2. Why hydrated chlorides of Ca, Sr and Ba can be dehydrated by heating while those of Be and Mg suffer hydrolysis?

Watch Video Solution

Try Yourself

1. How many electrons can be accommodated in the s-orbital?

Watch Video Solution

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

Watch Video Solution

3. The elements of group 1 are called alkali metals because

Watch Video Solution

4. Write the names of alkaline earth metals in increasing order of atomic number.

Watch Video Solution

5. The elements of group-2 are called alkaline earth metals because

Watch Video Solution

6. Which alkali metal is radioactive in nature?

Watch Video Solution

7. Write two reasons behind the anomalous behaviour of first element of each group.

Watch Video Solution

8. Beryllium shows a diagonal relationship with

Watch Video Solution

9. Write the reason behind the digonal relationship among element.

Watch Video Solution

10. Write the electronic configuration of potassium

Watch Video Solution

11. Write the trend the trend of variation in atomic and ionic radii among the alkali metals.

Watch Video Solution

12. Which one of the following alkali metals gives hydrated salts?

Watch Video Solution

13. Why does ionization energy decreases down the group?

Watch Video Solution

14. Among potassium and sodium which one is lighter metal?

Watch Video Solution

15. What colour is imparted by Rubidium in flame test?

Watch Video Solution

16. Which alkali mettal do not show photoelectric effect?

Watch Video Solution

17. Why are potassium and caesium, rather lithium used in photoelectric cells?

Watch Video Solution

18. What kind of chemical compounds are formed when alkali metal oxides react with water?

Watch Video Solution

19. K, Rb and Cs form which type of compounds with oxygen?

Watch Video Solution

20. Which compound is formed when lithium reacts directly with nitrogen in air?

Watch Video Solution

21. What is electrode potential?

Watch Video Solution

22. If an element has more negative value of electrode potential, then what will be its expected reducing power?

Watch Video Solution

23. Apart from water, alkali metals react with which kind of compounds?

Watch Video Solution

24. Write two properties of the alkali metal hydrides.

Watch Video Solution

25. Except for lithium, alkali metals form their hydrides at what temperature.

Watch Video Solution

26. Why lithium halides show covalent nature.

Watch Video Solution

27. Among alkali metals. Which one is the strongest reducing agent?

Watch Video Solution

28. If standard electrode potential of an element x is -1.70V and of another y is +1.07V. Which one of these is strong reducing agent?

Watch Video Solution

29. Name the ions present in solution of ammonia and alkali metals.

Watch Video Solution

30. The blue colour of solution of ammonia and alkali metals is due to which species?

Watch Video Solution

31. The blue coloured solution is diamagnetic or paramagnetic?

Watch Video Solution

32. The bronze coloured solution is diamagnetic or paramagnetic?

Watch Video Solution

33. What kind of oxides are formed by sodium?

Watch Video Solution

34. What is the trend of enthalpy of formation of alkali metal fluoride?

Watch Video Solution

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

Watch Video Solution

36. Write two properties of alkali metals salts of oxo-acids.

Watch Video Solution

37. Why lithium carbonate is not stable to heat?

Watch Video Solution

38. Write one difference between lithium and other members of alkali metals.

Watch Video Solution

39. Write one similarity between lithium and magnesium.

Watch Video Solution

40. How many water of crystallization are there in washing soda?

Watch Video Solution

41. While purification of NaCl, why only crystal of pure NaCl separate out?

Watch Video Solution

42. Which compound of sodium is formed when sodium hydroxide absorbs CO_2?

Watch Video Solution

43. Write two uses of sodium hydroxide.

Watch Video Solution

44. Why first ionization energy of alkaline earth metals is higher than that of alkali metals?

Watch Video Solution

45. Write the trend of hydration enthalpies of alkaline earth metal ions.

Watch Video Solution

46. Why Beryllium and magnesium do not impart colour to the flame?

Watch Video Solution

47. What is the nature of $Be(OH)_2$?

Watch Video Solution

48. How Beryllium chloride is prepared?

Watch Video Solution

49. How beryllium hydride is different from the hydrides of other members of group 2?

Watch Video Solution

50. Which metal is used to remove air from vacuum tube?

Watch Video Solution

51. Why alkaline earth metal oxides are quite stable?

Watch Video Solution

52. Explain the trends in the solubility of carbonates , sulphates and hydroxides of alkaline earth metals.

Watch Video Solution

53. What is the trend of formation of hydrated halides among alkaline earth metals?

Watch Video Solution

54. Write about solubility of fluorides in comparison to chlorides of alkaline earth metals.

Watch Video Solution

55. Anomalous Behaviour Of Beryllium

Watch Video Solution

56. Write one similarity between Be and Al.

Watch Video Solution

57. What is slaking of lime?

Watch Video Solution

58. Quick lime combines with which type of oxides?

Watch Video Solution

59. What happens when carbon dioxide gas is bubbled through lime water in small amount ?

Watch Video Solution

60. Why calcium hydroxide is used in white washing?

Watch Video Solution

61. What happens when $CaCO_3$ reacts with dilute acid?

Watch Video Solution

62. Write two uses of calcium carbonate.

Watch Video Solution

63. Name two important raw materials for the manufacture of cement.

Watch Video Solution

64. Write one use of cement.

Watch Video Solution

65. How many electrons can be accommodated in the s-orbital?

Watch Video Solution

66. s-block is comprised of how many groups?

Watch Video Solution

67. Why group -1 elements are called alkali metals ?

Watch Video Solution

68. Write the names of alkaline earth metals in increasing order of atomic number.

Watch Video Solution

69. Why group -2 metals are called alkaline earth metals ?

Watch Video Solution

70. Which alkali metal is radioactive in nature?

Watch Video Solution

71. Write two reasons behind the anomalous behaviour of first element of each group.

Watch Video Solution

72. Beryllium shows a diagonal relationship with

Watch Video Solution

73. Write the reason behind the digonal relationship among element.

Watch Video Solution

74. Write the electronic configuration of potassium

Watch Video Solution

75. Write the trend the trend of variation in atomic and ionic radii among the alkali metals.

Watch Video Solution

76. Which of the following exists as hydrated salt-

Watch Video Solution

77. Why does ionization energy decreases down the group?

Watch Video Solution

78. Among potassium and sodium which one is lighter metal?

Watch Video Solution

79. What colour is imparted by Rubidium in flame test?

Watch Video Solution

80. Which alkali mettal do not show photoelectric effect?

Watch Video Solution

81. Why caesium and potassium are used as electrodes in photoelectric cells ?

Watch Video Solution

82. What kind of chemical compounds are formed when alkali metal oxides react with water?

Watch Video Solution

83. K, Rb and Cs form which type of compounds with oxygen?

Watch Video Solution

84. Which compound is formed when lithium reacts directly with nitrogen in air?

Watch Video Solution

85. What is electrode potential?

Watch Video Solution

86. If an element has more negative value of electrode potential, then what will be its expected reducing power?

Watch Video Solution

87. Among alkali matals negative electrode protential of lithium is highest or lowest ?

Watch Video Solution

88. Apart from water, alkali metals react with which kind of compounds?

Watch Video Solution

89. Write two properties of the alkali metal hydrides.

Watch Video Solution

90. Except for lithium, alkali metals form their hydrides at what temperature.

Watch Video Solution

91. Why lithium halides show covalent nature.

Watch Video Solution

92. Name the ions present in solution of ammonia and alkali metals.

Watch Video Solution

93. The blue colour of solution of ammonia and alkali metals is due to which species?

Watch Video Solution

94. The blue coloured solution is diamagnetic or paramagnetic?

Watch Video Solution

95. The bronze coloured solution is diamagnetic or paramagnetic?

Watch Video Solution

96. What kind of oxides are formed by sodium?

Watch Video Solution

97. What kind of oxides are formed by potassium, rubidium and Caesium?

Watch Video Solution

98. Write two properties of alkali metals salts of oxo-acids.

Watch Video Solution

99. Why lithium carbonate is not stable to heat?

Watch Video Solution

100. Write one difference between lithium and other members of alkali metals.

Watch Video Solution

101. Write one similarity between lithium and magnesium.

Watch Video Solution

102. How many water of crystallization are there in washing soda?

Watch Video Solution

103. While purification of NaCl, why only crystal of pure NaCl separate out?

Watch Video Solution

104. Which compound of sodium is formed when sodium hydroxide absorbs CO_2?

Watch Video Solution

105. Write two uses of sodium hydroxide.

Watch Video Solution

106. Why first ionization energy of alkaline earth metals is higher than that of alkali metals?

Watch Video Solution

107. Write the trend of hydration enthalpies of alkaline earth metal ions.

Watch Video Solution

108. Why Beryllium and magnesium do not impart colour to the flame?

Watch Video Solution

109. What is the nature of $Be(OH)_2$?

Watch Video Solution

110. How Beryllium chloride is prepared?

Watch Video Solution

111. How beryllium hydride is different from the hydrides of other members of group 2?

Watch Video Solution

112. Which metal is used to remove air from vacuum tube?

Watch Video Solution

113. What kind of oxides are formed by the alkaline earth metal ?

Watch Video Solution

114. What is the trend of solubility, thermal stability and basic character of hydroxides fo alkaline earth metals ?

Watch Video Solution

115. What is the trend of formation of hydrated halides among alkaline earth metals?

Watch Video Solution

116. Write about solubility of fluorides in comparison to chlorides of alkaline earth metals.

Watch Video Solution

117. ANOMALOUS BEHAVIOUR OF BERYLLIUM

Watch Video Solution

118. Write one similarity between Be and Al.

Watch Video Solution

119. What is slaking of lime ?

Watch Video Solution

120. Quick lime combines with which type of oxides ?

Watch Video Solution

121. What happens when excess of CO_2 is passed through lime water ?

Watch Video Solution

122. Why calcium hydroxide is used in white washing?

Watch Video Solution

123. What happens when $CaCO_3$ reacts with dilute acid?

Watch Video Solution

124. Write two uses of calcium carbonate.

Watch Video Solution

125. Name two important raw materials for the manufacture of cement.

Watch Video Solution

126. Write one use of cement.

Watch Video Solution

Assignment Section A

1. Arrange the alkali metals in increasing order of their density.

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

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

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

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

Answer: D

Watch Video Solution

2. Which of the following statements is/are true for all the alkali metals ?

A. Their nitrates decompose on heating to give NO_2 and O_2.

B. Their corbonates decompose on heatig to give CO_2 and metal oxide.

C. They react with oxygen to give mainly the oxide MO_2

D. They react with halogens to give halides M^+X^-.

Answer: D

Watch Video Solution

3. The metallic luster exhibited by sodium is explained by

A. Diffusion of Na^+ ions

B. Oscillation of loose electrons

C. Excitation of free proton

D. Existence of body centred cubic lattice

Answer: B

Watch Video Solution

4. Which one of the following ions has the largest size in aqueous solution?

A. Rb^+

B. Na^+

C. K^+

D. Li^+

Answer: D

Watch Video Solution

5. Which among the following is the strongest reducing agent?

A. K

B. Na

C. Al

D. Mg

Answer: A

Watch Video Solution

6. Sodium chloride gives a golden yellow colour to the bunsen flame, which is due to

A. Sublimation of metallic sodium to give yellow vapour

B. Photosensitivity of sodium

C. Low ionization potential of sodium

D. Emission of excess of energy absorbed as a radiation in the visible region.

Answer: D

Watch Video Solution

7. Why lithium is kept wrapped in paraffin wax and not stored in kerosene oil ?

A. It reacts with kerosene

B. It floats to the surface of kerosene because of low density

C. It does not react with air and H_2O

D. It is an inert metal

Answer: B

Watch Video Solution

8. Which of the following oxides is the most basic in nature?

A. Na_2O

B. BeO

C. Li_2O

D. H_2O

Answer: A

Watch Video Solution

9. Which among Na, K, Cs and Li forms most stable hydride?

A. LiH

B. KH

C. NaH

D. CsH

Answer: A

Watch Video Solution

10. Lithium and magnesium exhibit diagonal relationship because

A. Both have nearly same size

B. Same reduction potential

C. Both have similar electronic configuration

D. both are found together in nature.

Answer: A

Watch Video Solution

11. Sodium sulphate is soluble in water,whereas barium sulphate is sparingly soluble because

A. the hydration energy of sodium sulphate is less than it lattice energy

B. The hydration energy of sodium sulphate is more than its lattice energy

C. The hydration and lattice energy are same in sodium sulphate

D. The lattice energy has no role to play solublity.

Answer: B

Watch Video Solution

12. Sodium carbonate can be manufactured by Solvay's process but potassium carbonate cannot be prepared because :

A. K_2CO_3 is more soluble

B. K_2CO_3 is less soluble

C. $KHCO_3$ is more soluble than $NaHCO_3$

D. $KHCO_3$ is less soluble than $NaHCO_3$.

Answer: C

Watch Video Solution

13. Which decomposes on heating-

A. NaOH

B. KOH

C. LiOH

D. RbOH

Answer: C

Watch Video Solution

14. Solvay process is used for the manufacture of

A. Sodium metal

B. Washing soda

C. Bleaching powder

D. Quick lime

Answer: B

Watch Video Solution

15. In the manufacture of sodium hydroxide by product obtained is

A. O_2

B. Cl_2

C. Na_2CO_3

D. $NaCl$

Answer: B

Watch Video Solution

16. Sodium cannot be obtained by the electrolysis of aqueous solution of $NaCl$ using Pt electrodes.

A. Sodium liberated reacts with water to produce $NaOH + H_2$

B. Sodium being more electropositive than hydrogen, H_2 is liberated at cathode and not sodium

C. Electrolysis cannot take place with brine solution.

D. Brine is neutral in nature.

Answer: B

Watch Video Solution

17. Which of the following bicarbonate does not exist in solid state?

A. $LiHCO_3$

B. $KHCO_3$

C. $CsHCO_3$

D. $NaHCO_3$

Answer: A

Watch Video Solution

18. Which of the alkali metals has the polarizing power close to that of Magnesium ?

A. Lithium

B. Sodium

C. Potassium

D. Cesium

Answer: A

Watch Video Solution

19. In the preparation of sodium carbonate (Na_2CO_3) which of the following is used as raw material?

A. Slakedlime

B. Lime stone

C. Quick lime

D. Sodium hydroxide

Answer: B

Watch Video Solution

20. Which of the following halides has the highest melting point-

A. NaCl

B. NaBr

C. NaF

D. Nal

Answer: C

Watch Video Solution

21. The first ionization energies of alkaline earth metal are higher than those of the alkali metals. This is because:

A. There is increase in the nuclear charge of the alkaline earth metals

B. There is decrease in the nuclear charge of the alkaline earth metals

C. There is not change is the nuclear charge

D. All of these

Answer: A

Watch Video Solution

22. The most electronegative alkaline earth metal is

A. Be

B. Mg

C. Ca

D. Ba

Answer: D

Watch Video Solution

23. Which of the following electronic configuration in the outermost two shells is characteristic of the alkaline earth metals?

A. $(n-1)s^2p^6, ns^2\underline{(n-1)s^2p^6ns^2}$

B. $(n-1)s^2p^6d^{10}, ns^2\underline{(n-1)s^2p^6dns^2}$

C. $(n-1)s^2p^6, ns^2np^1\underline{(n-1)s^2p^6ns^2np^1}$

D. $(n-1)s^2p^6, ns^2np^2\underline{(n-1)s^2p^6ns^2np^2}.$

Answer: A

Watch Video Solution

24. Why does magnesium from Mg^{2+} and not Mg^{+}?

A. Magnesium (II) is insoluble in water

B. Commonly higher oxidation states are preferred by metals

C. Ionic radius of Mg(II) is smaller tha of Mg(I)

D. High hydration energy as well as high latice energy of divalent magnesium ion

Answer: D

Watch Video Solution

25. Which of the following is an amphoteric oxide?

A. CaO

B. NaOH

C. BeO

D. LiOH

Answer: C

Watch Video Solution

26. Lime water is an aqueous solution of

A. $MgSO_4$

B. $Ca(OH)_2$

C. $CaCO_3$

D. $CaSO_4$

Answer: B

Watch Video Solution

27. Which of the following metals is most commonly used I photochemical cells?

A. Lithium

B. Calcium

C. Caesium

D. Fracium

Answer: C

Watch Video Solution

28. Which substance can be used for purification of sugar?

A. $CaCO_3$

B. Na_2CO_3

C. $CaHCO_3$

D. $Ca(OH)_2^-$

Answer: D

Watch Video Solution

29. Setting of plaster of paris is

A. Oxidation with atmospheric oxygen

B. Combination with atmospheric CO_2

C. Dehydration

D. Hydration to yield another hydrate

Answer: D

Watch Video Solution

30. Dead burnt plaster is

A. $CaCO_3$

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

C. $CaSO_4.2H_2O$

D. $CaSO_4$

Answer: D

Watch Video Solution

31. Identify the unknown product (x) in the following reaction

Milk of lime $+Cl_2 \rightarrow x + CaCl_2 + H_2O$

A. $Ca(OCl)_2$

B. $Ca(OH)_2$

C. CaO

D. $CaCO_3$

Answer: A

Watch Video Solution

32. Formula of gypsum salt is

A. $CaSO_4 \cdot 2H_2O$

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

C. $2CaSO_4 \cdot H_2O$

D. $CaSiO_3$

Answer: A

Watch Video Solution

33. CsOH is

A. Strongly basic

B. Weakly

C. Slightly acidic

D. Amphoteric

Answer: A

Watch Video Solution

Assignment Section B

1. When 1 mole of a substance (X) was treated with an excess of water, 2 moles of readily combustible gas were produced along with solution which when reacted with CO_2 gas produced a white turbidity. The substance (X) could be

A. Ca

B. CaH_2

C. $Ca(OH)_2$

D. $Ca(NO_3)_2$

Answer: B

Watch Video Solution

2. A pair of metals which dissolves in sodium hydroxide solution is

A. Cu, K

B. Fe, Mg

C. Ag, Cu

D. Sn, Zn

Answer: D

Watch Video Solution

3. The oxidation states of the most electronegative elements in the products of the reaction between BaO_2 and H_2SO_4 are

A. 0 and -1

B. -1 and -2

C. -2 and 0

D. -2 and +1

Answer: B

Watch Video Solution

4. Among KO_2, ALO_2^{Θ},BaO_2 and NO_2^+,unpaired electrons is present in .

A. NO_2^+ and BaO_2

B. KO_2 and AlO_2^-

C. KO_2 only

D. BaO_2 only

Answer: C

Watch Video Solution

5. A solid compound $'X'$ on heating gives CO_2 gas and a residue. The residue mixed with water form $'Y'$. On passing an excess of CO_2 through $'Y'$ in the water, a clear solution $'Z'$ is

obtained. On boiling $'Z'$ compound $'X'$ is reformed. The compound $'X'$ is :

A. $CaCO_3$

B. Na_2CO_3

C. $Na(HCO_3)_2$

D. K_2CO_3

Answer: A

Watch Video Solution

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

A. Absorbs CO_2 and increases O_2 concentration

B. Eliminates moisture

C. Absorb CO_2

D. Produces ozone

Answer: A

Watch Video Solution

7. Which of the following substance can be used for drying neutral or basic gases?

A. Calcium carbonate

B. Sodium carbonate

C. Sodium bicarbonate

D. Calcium oxide

Answer: D

Watch Video Solution

8. Which of the following carbonate decompose on heating to evolve CO_2?

A. Na_2CO_3

B. Li_2CO_3

C. K_2CO_3

D. Rb_2CO_3

Answer: B

Watch Video Solution

9. Which of the following has the highest solubility product?

A. KOH

B. CsOH

C. LiOH

D. RbOH

Answer: B

Watch Video Solution

10. Which ions are produced when anhydrous KF is mixed with conc. HF?

A. K^+, H^+, F^-

B. $\{KF^+(HF^-)\}$

C. KH^+, F^-

D. K^+, HF_2^-

Answer: D

Watch Video Solution

11. Arrange the following in increasing order of basic strength :

$MgO, SrO, K_2O, NiO, Cs_2O$

A. $MgO < SrO < K_2O < NiO < Cs_2O$

B. $Cs_2O < K_2O < MgO < SrO < NiO$

C. $NiO < MgO < SrO < K_2O < Cs_2O$

D. $K_2O < NiO < MgO < SrO < Cs_2O$

Answer: C

Watch Video Solution

12. Which of the following are arranged in correct increasing order of solubilities ?

A. $CaCO_3 < KHCO_3 < NaHCO_3$

B. $NaHCO_3 < KHCO_3 < CaCO_3$

C. $KHCO_3 < NaHCO_3 < CaCO_3$

D. $CaCO_3 < NaHCO_3 < KHCO_3$

Answer: D

Watch Video Solution

13. Which of the following is a hypothetical molecular formula?

A. $CsBr_3$

B. Csl_3

C. $CaCl$

D. CsF_3.

Answer: D

Watch Video Solution

Assignment Section C

1. The sulphide of Na can be prepared by the following reactions

A. $2Na + S \rightarrow Na_2S$

B. $Na_2OSO_4 + 4C \rightarrow Na_2S + 4CO$

C. $Na_2O_2 + SO_2 \rightarrow Na_2S + 2O_2$

D. $Na_2O + S \rightarrow Na_2S + \frac{1}{2}O_2$

Answer: A::B

Watch Video Solution

2. Be_2C on hydrolysis yields

A. $Be(OH)_2$

B. C_2H_2

C. CH_4

D. C_2H_6

Answer: A::C

Watch Video Solution

3. The diagonal relationship exists is between

A. Li and Mg

B. Be and Al

C. Be and Na

D. B and Si

Answer: A::B::D

Watch Video Solution

4. The pair of compounds which cannot exist in solution is:

A. $NaHCO_3$

B. Na_2CO_3

C. $NaOH$

D. $NaCl$

Answer: A::C

Watch Video Solution

5. Which of the following are good conductors of electricity in the molten state?

A. $BeCl_2$

B. $CaCl_2$

C. $SrCl_2$

D. $MgCl_2$

Answer: B::C::D

Watch Video Solution

6. Chlorides of which of the following metals crystallize from an aqueous solution as hydrates?

A. Li

B. Na

C. K

D. Mg

Answer: A::D

Watch Video Solution

7. Potassium iodide act as reducing agent when treated with

A. Acidified $K_2Cr_2O_7$ solution

B. An acidified $KMnO_4$ solution

C. A $CuSO_4$ solution

D. A lead acetate solution

Answer: A::B::C

Watch Video Solution

8. Which of the following statements is/are correct?

A. $NaHCO_3$ is more soluble than Na_2CO_3

B. $NaOH$ is known as caustic soda

C. $NaHCO_3$ is used as an antacid

D. Na_2CO_3 is used in the manufacturing of soap and glass

Answer: B::C::D

Watch Video Solution

9. Which of the following statement is/are correct?

A. KCl is a substitute for NaClfor patients of high blood pressure

B. KOH is a stronger alkali than NaOH

C. KOH is used in the manufacturing of soft soap

D. NaOH is a non-deliquescent white crystalline solid

Answer: A::B::C

Watch Video Solution

10. Which of the following statement(s) is/are correct?

A. KOH is less strong alkali than NaOH

B. Milk of magnesia is an aqueous solution of $Mg(OH)_2$

C. Mg^{+2} ions are not precipitated with the addition of NH_4OH in the presence of NH_4Cl

D. CaO_2 is less stable than MgO_2.

Answer: B::C

Watch Video Solution

11. Which category belongs to electron deficient bridge bonds?

A. Hydrides

B. Carbides

C. Duterides

D. Halides

Answer: A::C

Watch Video Solution

Assignment Section D

1. The elements of group II are known as alkaline earth metals. The electronic configuration of these elements . The electronic configuration of these elements is ns^2 and oxidation state is $+2$. They have higher ionization energy than alkali metals in their respective period due to their small size and completely filled s-orbital. These elements give characteristic colour to bunsen flame. magnesium is used in the preparation of

Grignard agent (RMgX) which is used in organic chemistry for preparation of sevaral organic compounds like alcohols. acids, hydrocarbons.

Q. The correct order of 1st ionization energy is

A. $Na < Mg < Al$

B. $Na < Al < Mg$

C. $Al < Mg < Na$

D. $Ag < Na < Mg$

Answer: B

Watch Video Solution

2. The elements of group II are known as alkaline earth metals. The electronic configuration of these elements . The electronic

configuration of these elements is ns^2 and oxidation state is $+2$. They have higher ionization energy than alkali metals in their respective period due to their small size and completely filled s-orbital. These elements give characteristic colour to bunsen flame. magnesium is used in the preparation of Grignard agent (RMgX) which is used in organic chemistry for preparation of sevaral organic compounds like alcohols. acids, hydrocarbons.

Q. Brick red colour of flame test is gives by

A. Sr

B. Ba

C. Ca

D. Mg

Answer: C

Watch Video Solution

Watch Video Solution

3. The elements of group II are known as alkaline earth metals. The electronic configuration of these elements . The electronic configuration of these elements is ns^2 and oxidation state is $+2$. They have higher ionization energy than alkali metals in their respective period due to their small size and completely filled s-orbital. These elements give characteristic colour to bunsen flame. magnesium is used in the preparation of Grignard agent (RMgX) which is used in organic chemistry for preparation of sevaral organic compounds like alcohols. acids, hydrocarbons.

Q. The reaction of RMgX with water will produces

A. MgX_2

B. $Mg(OH)_2$

C. $MgXOH$

D. $H - X$

Answer: C

Watch Video Solution

4. The solubility of most salts depends on the lattice energy of the solid and the hydration energy of the ions. On descending the group, the hydration energy decreases more rapidly than the lattice energy, hence the compound become less soluble as the metals gets larger. however, with the fluorides and hydroxides and the lattice energy decreases more rapidly than the hydration energy and so their solubility increases on descending the group.

Q. The most soluble hydroxide will be

A. $Mg(OH)_2$

B. $Ca(OH)_2$

C. $Sr(OH)_2$

D. $Ba(OH)_2$

Answer: D

Watch Video Solution

5. The solubility of most salts depends on the lattice energy of the solid and the hydration energy of the ions. On descending the group, the hydration energy decreases more rapidly than the lattice energy, hence the compound become less soluble as the metals gets larger. however, with the fluorides and hydroxides and the lattice energy decreases more rapidly than the hydration energy and so their solubility increases on descending the group.

Q. Which of the following is correct order of solubility of sulphates of alkaline earth metals?

A. $MgSO_4 > BeSO_4 > CaSO_4 > BaSO_4$

B. $BeSO_4 > MgSO_4 > CaSO_4 > BaSO_4$

C. $BaSO_4 > MgSO_4 > CaSO_4 > BeSO_4$

D. $BaSO_4 > CaSO_4 > MgSO_4 > BeSO_4$.

Answer: B

Watch Video Solution

6. Which of the following compounds are soluble in water?

A. Na_3PO_4

B. AgF

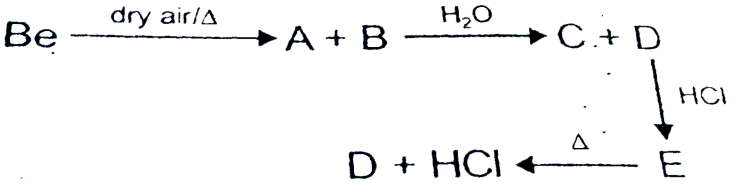
C. KCl

D. All of these

Answer: D

Watch Video Solution

7.



Q. A & B are

A. $BeO \& Be_3N_2$

B. $BeO \& BeO_2$

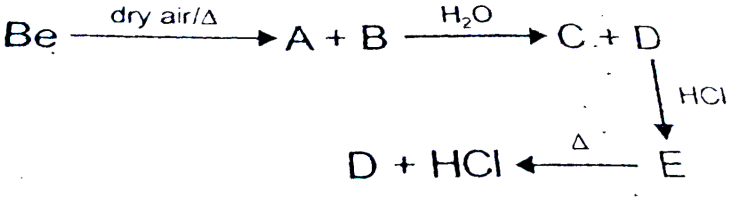
C. $BeO \& Be(OH)_2$

D. $Be_3N_2 \& Be(OH)_2$

Answer: A

Watch Video Solution

8.



Q. C & D are

A. $NH_3 \& Be(OH)_2$

B. $Be(OH)_2 \& NH_3$

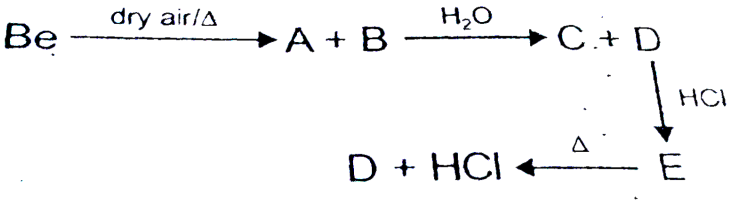
C. $NH_3 \& HNO_3$

D. $Be(OH)_2 \& BeO_2$

Answer: B

Watch Video Solution

9.



Q. 'E' is

A. NH_4OH

B. NH_4Cl

C. $NH_4OH \& NH_4Cl$

D. $BeCl_2$

Answer: B

Watch Video Solution

Assignment Section E

1. Statement-1: 3M solution of alkali metal in liquid ammonia has copper bronze colour.

Statement-2: copper bronze colour is due to the formation of metal cluster.

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: A

Watch Video Solution

2. Statement-1: Lithium is the strongest reducing agent is aqueous solution.

Statement-2: Lithium cannot be obtained by chemical reduction of its ore.

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: B

Watch Video Solution

3. Assertion (A): Aqueous solution of Na_2CO_3 is alkaline in nature.

Reason (R): when dissolved in water, Na_2CO_3 undergoes anionic hydrolysis.

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: A

 Watch Video Solution

4. Statement-1: Lithium has highest hydration energy.

Statement-2: Lithium is the stronger reducing agent.

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: B

 Watch Video Solution

5. Statement-1: Be imparts colour to the bunsen flame.

Statement-2: Be has very high ionisation energy.

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: D

Watch Video Solution

6. Statement-1: Lattice energy of Na_2SO_4 is less than its hydration energy.

Statement-2: lattice energy of $BaSO_4$ is less than its hydration energy

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: C

Watch Video Solution

7. Statement-1: Lattice energy of $BaSO_4$ is less than its hydration energy.

Statement-2: $\left|\Delta_L H^{\Theta}\right| \& \left|\Delta_{hyd} H^{\Theta}\right|$ both are smaller.

A. Statement-1 is true, statement-2 is true, statement-2 is a correct explanation for statement-1

B. Statement-1 is true, statement-2 is true, statement-2 is not correct explanation for statement-1

C. Statement-1 is true, statement-2 is false

D. Statement-1 is false, statement-2 is true

Answer: A

Watch Video Solution

Assignment Section F

1. Match the following

Column-I	Column-II
(A) Na_2CO_3	(p) Soluble in water
(B) $MgSO_4$	(q) Insoluble in water
(C) $CaCO_3$	(r) Covalent bond
(D) CaF_2	(s) Ionic bond

Watch Video Solution

2. Match the following

Column-I	Column-II
(A) $Li + air \xrightarrow{\Delta}$	(p) Oxide
(B) $Na + air \xrightarrow{\Delta}$	(q) Nitride
(C) $K + air \xrightarrow{\Delta}$	(r) Hydroxide
(D) $Mg + air \xrightarrow{\Delta}$	(s) Carbonate

Watch Video Solution

3. Match the following

Column-I	Column-II
(A) $MgCl_2$	(p) Soluble in ethanol
(B) $BeCl_2$	(q) Forms cyclic dimer
(C) BCl_3	(r) Lewis acid
(D) CCl_4	(s) Amphoteric behaviour
	(t) Non-polar

A. A(p), B(q), C(r),D(t)

B. A(p),B(t) ,C(q), D(r)

C. D(t), C(r), B)(s), A(t)

D. D(r), C(p), B(q), A(s)

Answer: D(t), C(r), B)(s), A(t)

Watch Video Solution

Assignment Section G

1. The number of water of crystallisation in hypo are___.

Watch Video Solution

2. How many of the following are amphoteric oxides?

$Li_2O, Na_2O_2, BeO, Al_2O_3, MgO, BaO_2$

Watch Video Solution

3. Be react with air, how many products will form?

Watch Video Solution

4. Which is the weakest base among $NaOH, Ca(OH)_2, KOH$ and $Be(OH)_2$.

Watch Video Solution

Assignment Section H

1. Statement-1: K_2CO_3 cannot be prepared by Le-blanc method.

Statement-2: Sodium nitrate when heated gives NO_2 gas.

Statement-3: NaO_2 is paramagnetic while Na_2O_2 is diamagnetic.

A. FFT

B. FTT

C. TFT

D. TTF

Answer: A

Watch Video Solution

2. Statement-1: Pure NaCl is a diliquescent crystalline solid.

Statement-2: Na_2CO_3 is known as pearl ash.

Statement-3: Sulphur disproportionates in NaOH.

A. FFT

B. TTF

C. TFT

D. FFF

Answer: A

Watch Video Solution

3. Statement-1: Hydroxides of group-2 are less soluble in water than hydroxides of group-1.

Statement-2: CaF_2 is least soluble in among other fluoride of group-2.

Statement-3: Li gives red coloured flame.

A. TTF

B. TTT

C. FFF

D. TFT

Answer: B

Watch Video Solution

4. Statement-1: Conc. Solution of Li in NH_3 is diamagnetic.

Statement-2: Mg/NH_3 works as anti-hydrogenation agent.

Statement-3: LiCl forms $LiCl.2H_2O$.

A. TFT

B. FTF

C. TTT

D. FFF

Answer: A

Watch Video Solution

Assignment Section I

1. Element (A) burns in nitrogen to give an ionic compound, (B) reacts with water to give (C) and (D). A solution of (C) becomes milky on bubbling carbon dioxide. Idendity (A),(B),(C) and (D)

Watch Video Solution

2. What happens when

(i) NaH reacts with water?

(ii) Sodium reacts with excess oxygen?

(iii) Water is dropped over sodium peroxide? Write balanced chemical equation for each.

Watch Video Solution

3. Predict the outcome of the following reactions and write balanced equations.

(i) $BaO_2(s) + H_2SO_{4(aq)} \rightarrow$

(ii) $Ba(NO_3)_{2(aq)} + Na_2SO_{4(aq)} \rightarrow$

(iii) $Ca(s) + H_2(g) + \text{Heat} \rightarrow$

Watch Video Solution

4. Explain why both $BeCO_3$ and $BeSO_4$ are unstable to heat, while $BaCO_3$ and $BaSO_4$ are stable.

Watch Video Solution

5. identify the group 2 element 'X' in each of the following

(i) The chemistry of X is quite different from that of other element in the group.

(ii) 'X' forms organometallic compound RXBr. Which is very widely used?

A.

B.

C.

D. Fe

Answer:

Watch Video Solution

6. identify the group 2 element 'X' in each of the following

(i) The chemistry of X is quite different from that of other element in the group.

(ii) 'X' forms organometallic compound RXBr. Which is very widely used?

Watch Video Solution

7. 1 g of magnesium was burnt in air and the ash produced in extracted with excess of water when $8.96cm^3$ of ammonia is produced at S.T.P. calculate the amount of Mg, which was

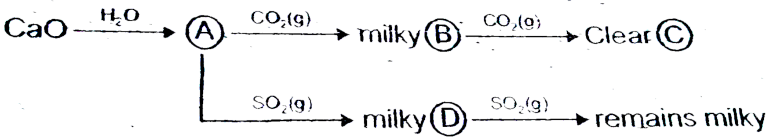
converted into magnesium nitride. Also calculate the amount of MgO present in the ash.

Watch Video Solution

8. Calcium burns in nitrogen to produce a white powder which dissolves in sufficient water to produce a gas (A) and alkaline solution. The solution on exposure to air produce a thin solid layer of (B) on the surface. Indentity the compound (A) and (B)

Watch Video Solution

9. Complete the following reaction.



Watch Video Solution

Assignment Section J

1. Correct among the following

A. Cs is best oxidising agent due to lowest I.E.

B. Li^+ is best reducing agent due to highest $\left|\Delta_{hyd}H^{\Theta}\right|$

C. Li^+ is best reducing agent due to highest $\Delta_{hyd}H^{\Theta}$

D. Cs^+ is best oxidising agent due to low $\left|\Delta_{hyd}H^{\Theta}\right|$

Answer: B

Watch Video Solution

2. In castner-Keliner cell when brine is electrolysed, 23g of sodium is released is released on cathode, volume of $Cl_2(g)$ released at 380 mm Hg at $0^\circ C$ will be

A. 22.4 L

B. 11.2L

C. 5.6 L

D. 44.8L

Answer: A

Watch Video Solution

3. $Na(s) \rightarrow \xrightarrow{\text{air} / \Delta}$ product. Product will be

A. Na_2O

B. Na_2O_2

C. $NaOH$

D. All of these

Answer: D

Watch Video Solution

4. Which of the chloride shows least solubility in water?

A. LiCl

B. NaCl

C. KCl

D. RbCl

Answer: C

Watch Video Solution

5. Order of lattice enthalpy is as

A. $BeF_2 > MgF_2 > CaF_2 > SrF_2$

B. $BeF_2 < MgF_2 < CaF_2 < SrF_2$

C. $LiF < LiCl < LiBr < Lil$

D. $Lil < LiBr < CsBr < Csl$

Answer: A

Watch Video Solution

6. In Solvay ammonia process, sodium bicarbonate is precipitated due to

A. $NaHCO_3$

B. $Na_2CO_3.10H_2O$

C. Na_2CO_3

D. All of these

Answer: D

Watch Video Solution

7. Alkali earth metals in liq. NH_3 produce a blue coloured solution, due to

A. Polarisability of NH_3

B. Charge transfer

C. $dtod$ transition

D. Ammoniated electrons

Answer: D

Watch Video Solution

8. $Mg \xrightarrow{\text{dry. Air } / \Delta} A + B$

A. A & B are MgO & MgO_2

B. A & B are $MgO_2 \& Mg(OH)_2$

C. A+B are $MgO + Mg_3N_2$

D. A & B are $MgO_2 \& Mg_3N_2$

Answer: C

Watch Video Solution

9. s-block contains the element

A. With stable nuclei

B. With unstable nuclei

C. With radio active nuclei

D. With acidic nature

Answer: A::B::C

Watch Video Solution

10. Mg_3P_2 on hydrolysis produces

A. $Mg(OH)_2$

B. MgO

C. PH_3

D. P_2O_3

Answer: A::C

Watch Video Solution

Examples

1. What are $s-$ block elements?

Watch Video Solution

2. Name alkali metals in increasing order of atomic number.

Watch Video Solution

3. Which element of group 2 is not considered as alkaline earth metal?

Watch Video Solution

4. Write the general electronic configuration of alkali metal and alkaline earth metal.

Watch Video Solution

5. Lithium shows diagonal relationship with

Watch Video Solution

6. Why are alkali metals not found in nature?

Watch Video Solution

7. The alkali metals are soft due to-

Watch Video Solution

8. Why does alkali metals impart characteristic colour to the flame?

Watch Video Solution

9. How flame test helps in distinguishing alkali metals?

Watch Video Solution

10. Why do alkali metal tarnishes in air?

Watch Video Solution

11. Name the product formed when alkali metals reacts with water.

Watch Video Solution

12. The alkali metal halides are ionic or covalent?

Watch Video Solution

13. What kind of oxides are formed by lithium?

Watch Video Solution

14. What are oxo-acids?

Watch Video Solution

15. Why does lithium exhibit anomalous properties ?

Watch Video Solution

16. Which process is used for preparation of sodium carbonate ?

Watch Video Solution

17. What impurities are present in brine solution?

Watch Video Solution

18. Which cell is used for manufacture of sodium hydroxide.

Watch Video Solution

Exercise

1. Among the following which element is the rarest of all ?

A. Na

B. Cs

C. Fr

D. K

Answer: C

Watch Video Solution

2. Among the chlorides of alkali metals, what is the decreasing order of hydration ?

A. NaCl > RbCl > LiCl > CsCl

B. LiCl > CsCl >KCl > RbCl >NaCl

C. LiCl > NaCl > KCl > RbCl g>CsCl

D. All are equatlly hydrated as halide is same

Answer: C

Watch Video Solution

3. What is the correct order of density ?

A. Li > Na > K

B. K > Na > Li

C. Na > K > Li

D. Na = K < Li

Answer: C

Watch Video Solution

4. Among the following which metal forms superoxides of type MO_2 ?

A. K

B. Rb

C. Cs

D. All of these

Answer: D

Watch Video Solution

5. The alkali metal halides are ionic or covalent?

A. LiCl

B. Nal

C. Ki

D. Lil

Answer: D

Watch Video Solution

6. the concentrated solution of alkali metals in liquid ammonia becomes blue due to

A. Ammoniated electron

B. Ammoniated metal cations

C. Diamagetic nature of solution

D. Alkaline nature of metal

Answer: A

Watch Video Solution

7. What is correct statement ?

A. Iodides of alkali metals have highest ionic character among halides

B. LiF is highly soluble in H_2O

C. Low solubility of CsI is due to smaller hydration enthalpy of its two ions

D. All of these

Answer: C

View Text Solution

8. The hybridisation fo $BeCl_2$ in solid state and above 1200 K is respectively

A. sp^3, sp^3

B. sp^3, sp^2

C. sp^2, sp^2

D. sp^3, sp

Answer: D

Watch Video Solution

9. On heating alkali metal nitrated product formed are (except $LiNO_3$)

A. NO_2 and O_2 only

B. NO_2 only

C. NO_2 and MO only

D. MNO_2 and O_2

Answer: D

Watch Video Solution

10. Paramagnetic behaviour of KO_2 is due to the fact that unpaired electron is present in

A. $\pi 2p$ molecular orbital

B. $\pi \cdot 2p$ molecular orbital

C. $\sigma 2p$ molecular orbital

D. $\sigma \cdot 2p$ molecular orbital

Answer: B

Watch Video Solution

11. Aqueous soultion of soda lime is

A. Acidic

B. Alkaline

C. Neutral

D. Initially acidic changes to alkaline after some time

Answer: B

Watch Video Solution

12. On heating gypsum above 393 K, the product formed is

A. $2(CaSO_4)H_2O$

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

C. $CaSO_4H_2O$

D. Dead bumt plaster

Answer: D

Watch Video Solution

13. In which process $Ca(OH)_2$ is used to produce NH_3?

A. Solvany process

B. Bosch process

C. Lane's process

D. Castner - Kellner process

Answer: A

Watch Video Solution

14. Which of the following carbonate is thermally most unstable?

A. $BeCO_3$

B. $CaCO_3$

C. K_2CO_3

D. Rb_2CO_3

Answer: A

Watch Video Solution

15. Given two reaction, describe them

(i) $Na_2CO_3 + 2H_2O \rightarrow 2NaOH + H_2CO_3$

(ii) $CuSO_4 + 5H_2O \rightarrow CuSO_4.5H_2O$

A. Both are hydration reactions

B. Both are hydrolysis reactions

C. Both are crystallisation reactions

D. Reaction (i) is hydrolysis and reaction (ii) is hydration to from hydrated sait

Answer: D

Watch Video Solution

16. The aqueous solution of baking soda is

A. Acidic

B. Alkaline

C. Neutral

D. Amphoteric

Answer: B

Watch Video Solution

17. Halides of Be dissolve in organic solvent while of Ba do not

A. High hydracation energy of Be halides

B. High lattice energy of barium halides

C. Large size of Ba^{2+}

D. Halides of Be are covvalent but that of Ba are ionic

Answer: D

Watch Video Solution

18. $M + 2H_2O \rightarrow M(OH)_2 + H_2$

Which metal among the following cannot undergo this reacton at high temperatures ?

A. Mg

B. Ba

C. Be

D. Ca

Answer: C

Watch Video Solution

19. The ratio of moles of water as water of crystallisation in LiCl and $BaCl_2$ is

A. $1:1$

B. $1:2$

C. $1:4$

D. $1:3$

Answer: A

Watch Video Solution

20. Ca is the good reducing agent, because

A. It has small size

B. It is the first member of group 2

C. It has one electron in outermost shell

D. It has the negative reduction potential

Answer: D

Watch Video Solution

Assignment Section A

1. The increasing order of the density of the alkali metal is

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

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

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

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

Answer: C

Watch Video Solution

2. Which one of the following alkali metals is the most metallic?

A. Li

B. Na

C. K

D. Cs

Answer: D

Watch Video Solution

3. The metallic lustre exhibited by sodium is explained by

A. Diffusion of Na^+ ions

B. Oscillation of loose electrons

C. Excitation of free protons

D. Existence of body centred cubic lattice

Answer: B

Watch Video Solution

4. Which one of the following ions has the largest size in aqueous solution?

A. Rb^+

B. Na^+

C. K^+

D. Li^+

Answer: D

Watch Video Solution

5. Which among the following is the strongest reducing agent?

A. K

B. Na

C. Ai

D. Mg

Answer: A

Watch Video Solution

6. Sodium chloride imparts a yellow colour to the Bunsen flame .This can be interpreted due to the

A. Sublimation of metallic sodium to give yellow vapur

B. Photosenitinity of sodium

C. Low ionization potential of sodium

D. Emission of excess of energy absorbed as a radiation in the visible region

Answer: D

Watch Video Solution

7. Which of the following oxides is the most basic in nature?

A. Na_2O

B. BeO

C. Li_2O

D. H_2O

Answer: A

Watch Video Solution

8. Which among Na, K, Cs and Li forms most stable hydride?

A. Lii l

B. KH

C. NaH

D. CsH

Answer: A

Watch Video Solution

9. Na_2CO_3 can be manufactured by Solva's process but K_2CO_3 cannot be prepared because

A. K_2CO_3 is more soluble

B. K_2CO_3 is less soluble

C. $KHCO_3$ is more soluble than $NaHCO_3$

D. $KHCO_3$ is less solubie than $NaHCO_3$

Answer: C

Watch Video Solution

10. Which decomposes on heating-

A. NaOH

B. KOH

C. LiOH

D. RbOH

Answer: C

Watch Video Solution

11. Solvay process is used for the manufacture of

A. Sodium metal

B. Washing soda

C. Bleaching powder

D. Quick lime

Answer: B

Watch Video Solution

12. In the manufacture of sodium hydroxide by product obtained is

A. O_2

B. Cl_2

C. Na_2CO_3

D. $NaCl$

Answer: B

Watch Video Solution

13. Which of the following alkali metal bicarbonates readily decomposes?

A. $LiHCO_3$

B. $KHCO_3$

C. $CsHCO_3$

D. $NaHCO_3$

Answer: A

Watch Video Solution

14. Which of the alkali metals has the polarizing power close to that of Magnesium ?

A. Lithium

B. Sodium

C. Potassium

D. Caesium

Answer: A

Watch Video Solution

15. In the preparation of sodium carbonate (Na_2CO_3) which of the following is used as raw material?

A. Slaked lime

B. Brine

C. Quick lime

D. Sodium hydroxide

Answer: B

Watch Video Solution

16. Which of the following halides has the highest meting point ?

A. NaCl

B. NaBr

C. NaF

D. Nal

Answer: C

Watch Video Solution

17. The first ionization energies of alkaline earth metal are higher than those of the alkali metals. This is because:

A. Thoro is increase in the nuclear charge of the alkaline earth metals

B. There is decrease in the nuclear charge of the alkaline earth metals

C. There is no change is the nuclear charge

D. All of these

Answer: A

Watch Video Solution

18. Why does magnesium from Mg^{2+} and not Mg^{+}?

A. Be

B. Mg

C. Ca

D. Ba

Answer: D

Watch Video Solution

19. Why does magnesium from Mg^{2+} and not Mg^{+}?

A. Magnesium (II) is insoluble in water

B. Commonly higher oxidation states are preferred by metals

C. Ionic radius of Mg(II) is samller than that of Mg(I)

D. High hydration energy as well as high latice

Answer: D

Watch Video Solution

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

A. Be

B. Mg

C. Ca

D. Sr

Answer: B

Watch Video Solution

21. Lime water is an aqueous solution of

A. $MgSO_4$

B. $Ca(OH)_2$

C. $CaCO_3$

D. $CaSO_4$

Answer: B

Watch Video Solution

22. Which one of the following chlorides has maximum tendency to from hydrate ?

A. $BaCl_2$

B. NaCl

C. $MgCl_2$

D. LiCl

Answer: C

Watch Video Solution

23. Setting of plaster of paris is

A. Oxidation with atmospheric oxygen

B. Combination with atmospheric CO_2

C. Dehydration

D. Hydration

Answer: D

Watch Video Solution

24. Which of the following is dead. Burnt plaster?

A. $CaCO_3$

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

C. $CaSO_4 2H_2O$

D. $CaSO_4$

Answer: D

Watch Video Solution

25. Identify the unknown product (X) in the folowing reaction

milk of lime $+Cl_2 \rightarrow X + CaCl_2 + H_2O$

A. $Ca(Ocl)_2$

B. $Ca(OH)_2$

C. CaO

D. $CaCO_3$

Answer: A

Watch Video Solution

26. Formula of gypsum salt is

A. $CaSO_4 2H_2O$

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

C. $2CaSO_4 H_2O$

D. $CaSiO_3$

Answer: A

Watch Video Solution

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

A. $Mg(OH)_2$

B. $Sr(OH)_2$

C. $Ca(OH)_2$

D. $Ba(OH)_2$

Answer: D

Watch Video Solution

28. Which of the following metals is most commonly used I photochemical cells?

A. Lithium

B. Calcium

C. Caesium

D. Francium

Answer: C

Watch Video Solution

29. Which of the following is an amphoteric oxide?

A. CaO

B. NaOH

C. BeO

D. LiOh

Answer: C

Watch Video Solution

30. Which of the following statements is/are true for all the alkali metals ?

A. Their nitrates decomose on heating to give NO_2 and O_2

B. Their carbonates decompose on heating to give CO_2 and metal oxide

C. Their react with oxygen to give mainly the oxide MO_2

D. They react with halogens to give haildes M^+X^-

Answer: D

Watch Video Solution

Assignment Section B

1. Among the nitrate of alkali metals which one can be decomposed to its oxide on strong heating?

A. $LiNO_3$

B. $NaNO_3$

C. KNO_3

D. $RbNO_3$

Answer: A

Watch Video Solution

2. which among the following does not at all show the tendency to form peroxides?

A. Li

B. Mg

C. Be

D. Ba

Answer: D

Watch Video Solution

3. Which one of the following statements is correct?

The chlorides of grup II metals

A. All hygroscopic in nature

B. Increase in littice enthalpy from $BeCl_2 \rightarrow BaCl_2$

C. Decrease in m.p. from $BeCl_2 \rightarrow BaCl_2$

D. All insouble except $BaCi_2$

Answer: A

View Text Solution

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

A. $NaCl > KCl > RbCl > CsCl$

B. $CsCl > RbCl > KCl > NaCl$

C. $KCl > NaCl > RbCl > CsCl$

D. $CsCl > RbCl > NaCl > KCl$

Answer: D

Watch Video Solution

5. The thermal stability order of the carbonates is

A. $Na_2CO_3 > K_2CO_3 > BeCO_3 > BaCO_3$

B. $K_2CO_3 > Na_2CO_3 > BaCO_3 > BeCO_3$

C. $BaCO_3 > BeCO_3 > K_2CO_3 > Na_2CO_3$

D. $BeCO_3 > Na_2CO_3 > BaCO_3 > K_2CO_3$

Answer: B

Watch Video Solution

6. The thermal stability of alkaline earth metal carbonates increases from Be to Ba. This is because

A. Covalent nature decreases and Ionic nature increases

B. Lattice energy increases

C. Electropositive nature decreases

D. None of these

Answer: A

Watch Video Solution

7. The solubility of sulphates in water decreases from $MgSO_4 \rightarrow BaSO_4$ It is due to the fact that

A. Ionic nature increases

B. Size of M^{2+} ion increases

C. Lattice energy decreases

D. Hydraction enthalpy of M^{2+} ions decreases

Answer: D

Watch Video Solution

8. Which of the following order is correct for thermal stability?

A. $MgCO_3 < CaCO_3 < BeCO_3$

B. $BeCO_3 < MgCO_3 < CaCO_3$

C. $CACO_3 < BeCO_3 < MgCO_3$

D. $CACO_3 < MgCO_3 < BeCO_3$

Answer: B

Watch Video Solution

9. Which one of the following statements concerning the compounds of Lithium is false?

A. The hydroxide, Carbonate, nitrate, decompose to give the oxide on heating

B. It is the most electronegative among alkali

C. The hydrogen carbonate cannot be isolated as a stable solid

D. It forms a peroxide but not superoxide

Answer: D

Watch Video Solution

10. Which of the following statements is incorrect for Be?

A. Most of its compounds are largely covalent

B. $BeCl_2$ has bridged covalent structure and is a linear molecule above 1200 K

C. It has distintive group properties due to samller size and high electronegativity

D. It from Be^{2+} ions because of the lower value the sum of Ist and 2nd L.E.

Answer: D

Watch Video Solution

11. Which of the following is not an acidic salt ?

A. NaH_2PO_2

B. NaH_2PO_3

C. NaH_2PO_4

D. Na_2HPO_4

Answer: A

Watch Video Solution

12. Baking soda is

A. NaCl

B. $NaHCO_3$

C. Na_2SO_4

D. Na_2CO_3

Answer: B

Watch Video Solution

13. Sodium metal is kept under

A. Alcohol

B. Kerosene oil

C. Water

D. Petrol

Answer: B

Watch Video Solution

14. Metallic magnesium is prepared by-

A. Displacement of Mg by iron from $MgSO_4$ solution

B. Electrolysis of an aqueous solution os $Mg(NO_3)_2$

C. Electrolysis of molten $MgCl_2$

D. Reduction of MgO by almunium

Answer: C

Watch Video Solution

15. Chemical A is used for water softening to remove temporary hardness. A reacts with sodium carbonate to generate caustic soda. When CO_2 is bubbled through a solution of A, it turns cloudy. What is the chemical formula of A ?

A. $CaCO_3$

B. CaO

C. $Ca(OH)_2$

D. $Ca(HCO_3)_2$

Answer: C

Watch Video Solution

16. Alums are not formed by which alkali metal ?

A. Li

B. K

C. Na

D. Cs

Answer: A

Watch Video Solution

17. Epsom salt is

A. $MgSO_4 \quad 7H_2O$

B. $Mg(OH)_2$

C. $2CaSO_4 \quad H_2O$

D. $BaSO_4$

Answer: A

Watch Video Solution

18. The molecular formula of Glauber's salt is

A. $MgSO_4 \quad 7H_2O$

B. $CuSO_4 \quad 5H_2O$

C. $FeSO_4 \quad 7H_2O$

D. $Na_2SO_4 \quad 10H_2O$

Answer: D

Watch Video Solution

19. The electrolysis of molten KCl. $MgCl_2.\ 6H_2O$ gives

A. Mg only

B. K only

C. K and Mg only

D. Mg, K and Cl_2

Answer: D

Watch Video Solution

20. Halides of alkaline earth metals form hydrates such as $MgCl_2.6H_2O, CaCl_2.6H_2O, BaCl_2.2H_2O$ and $SrCl_2.2H_2O$. This shows that halides of group 2 elements :

A. Smaller ionic size

B. Increased charge on ions

C. Highher hydration enthapaies

D. High oxidation potential

Answer: C

Watch Video Solution

21. Compared with the alkaline earth metals, the alkali metals exhibit

A. Geater hardness

B. Higher m.p.

C. Smaller lonic radil

D. Lower ionization energy

Answer: D

Watch Video Solution

22. Which is not the compound of sodium?

A. Chlle salt petre

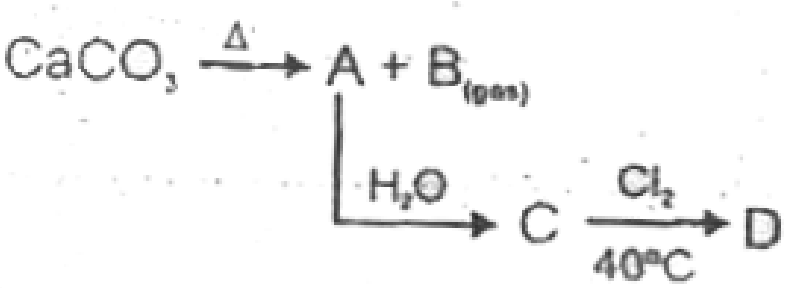
B. Salt petre

C. Glauber's salt

D. Soda ash

Answer: B

Watch Video Solution



23.

Product D is

A. $CaCl_2$

B. $Ca(OH)_2$

C. $CaCl_2HH_2O$

D. $CaOCl_2$

Answer: D

Watch Video Solution

24. Correct order of solubility

A.

$$Be(oH)_2 < Mg(oH)_2 < Ca(oH)_2 < Sr(oH)_2 < Ba(oH)_2$$

B.

$$Mg(oH)_2 < Be(oH)_2 < Ca(oH)_2 < Sr(oH)_2 < Ba(oH)_2$$

C.

$$Be(oH)_2 < Sr(oH)_2 < Ca(oH)_2 < Mg(oH)_2 < Ba(oH)_2$$

D.

$$Ba(oH)_2 < Mg(oH)_2 < Ca(oH)_2 < Sr(oH)_2 < Be(oH)_2$$

Answer: A

Watch Video Solution

25. Among the oxides of group 2, least basic is

A. MgO

B. CaO

C. SrO

D. BaO

Answer: A

Watch Video Solution

26. Beryllium on ignition in air gives

A. BeO

B. Be_3N_2

C. Both (1) & (2)

D. BeC

Answer: C

Watch Video Solution

27. $Na_2CO_3 + H_2O + CO_2 \rightarrow (A)$. White crystalline powder (A) on reaction with phenolphthalein gives

A. Pink colour

B. Yellow colour

C. Orange colour

D. No colour

Answer: A

Watch Video Solution

28. Write the chemical equation of preparation of baking soda.

What are the uses of baking soda ?

A. Starch

B. $Ca(H_2PO_4)_2$

C. $NaHCO_3$

D. All of these

Answer: C

Watch Video Solution

29. Which of the following statements is true?

A. $NaHCO_3$ is strongly basic in nature

B. Pure NaCl is hygroscopic

C. On increasing temperature increase in solubility of NaCl in water occurs

D. All of these

Answer: C

Watch Video Solution

30. On heating sodium hydrogen carbonate, the products formed are

A. $Na_2O + CO_2 + H_2O$

B. $Na_2CO_3 + CO_2$

C. $Na_2CO_3 + H_2O + CO_2$

D. $Na_2CO_3 + H_2O$

Answer: C

Watch Video Solution

Assignment Section C

1. Ionic mobility of which of the following alkali metal ions is lowest when aqueous solution of their salts are put under an

electric field ?

A. Na

B. K

C. Rb

D. Li

Answer: D

Watch Video Solution

2. Suspension of slaked lime in water is known as

A. Limewater

B. Quicklime

C. Milk of time

D. Aqueous solution of siaked lime

Answer: C

Watch Video Solution

3. In context with beryllium, which one of the following statements is incorrect ?

A. It is rendered passive by nitric acid

B. It form Be_2C

C. Its salts rarely hydrolyze

D. Its hydride is electron-deficient and polymeric

Answer: C

Watch Video Solution

4. Which of the following statement is true?

A. Mg^{2+} ions are important in the green parts of plants

B. Mg^{2+} ions from a complex with ATP

C. Ca^{2+} ions are important in blood clotting

D. Ca^{2+} ions are not important in maintainning the regular beating of the heart

Answer: D

View Text Solution

5. On heating which of the following release CO_2 most easily ?

A. $MgCO_3$

B. $CaCO_3$

C. K_2CO_3

D. Na_2CO_3

Answer: A

Watch Video Solution

6. The function of Sodium pump is a biological process operating in each and every cell of all animals. Which of the following biologicaly important ions is also constant f this pump ?

A. Fe^{2+}

B. Ca^{2+}

C. Mg^{2+}

D. K^+

Answer: D

Watch Video Solution

7. Solubility of the alkaline earth's metal sulphates in water decreases in the sequence

A. $Ba > Mg > Sr > Ca$

B. $Mg > Ca > Sr > Ba$

C. $Ca > Sr > Ba > Mg$

D. $Sr > Ca > Mg > Ba$

Answer: B

Watch Video Solution

8. Which one of the alkali metals forms only the normal oxide, M_2O, on heating in air ?

A. Li

B. Na

C. Rb

D. K

Answer: A

Watch Video Solution

9. Equimolar solutions of the following substances were prepared separately. Which one of these will record the highest pH value?

A. LiCl

B. $BeCl_2$

C. $BaCl_2$

D. $AlCl_3$

Answer: C

Watch Video Solution

10. Which of the following compounds has the lowest melting point ?

A. CaF_2

B. $CaCl_2$

C. $CaBr_2$

D. CaI_2

Answer: D

Watch Video Solution

11. Which one of the following is present as an active ingredient in bleaching powder for bleaching action?

A. $CaCl_2$

B. $CaOCl_2$

C. $Ca(Ocl)_2$

D. CaO_2Cl

Answer: C

Watch Video Solution

12. Which of the following statement is incorrect ?

A. Almunium reacts with excess NaOH to give $Al(OH)_3$

B. $NaHCO_3$ on heating gives Na_2CO_3

C. Pure sodium metal dissolves in liquid ammonia to give blue solution

D. NaOH reacts with glass to give sodium silicate

Answer: A

Watch Video Solution

13. Match list-I with list-ii for the composition of substances and select the correct answer using the code given below the lists

List-I (Substances)	List-II (Composition)
(A) Plaster of paris	(i) $CaSO_4.2H_2O$
(B) Epsomite	(ii) $CaSO_4.\frac{1}{2}H_2O$
(C) Kieserite	(iii) $MgSO_4.7H_2O$
(D) Gypsum	(iv) $MgSO_4.H_2O$

(1) A(i), B(ii), C(iii), D(iv)

A. A(i), B(ii), C(iii), D(iv)

B. A(iv), B(iii), C(ii),D(i)

C. A(iii), B(iv), C(i), D(ii)

D. A(ii), B(iii), C(iv), D(i)

Answer: D

Watch Video Solution

14. Which one of the following alkaline earth metal sulphates has its hydration enthalpy greater than its lattice enthalpy?

A. $CaSO_4$

B. $BeSO_4$

C. $BaSO_4$

D. $SrSO_4$

Answer: B

Watch Video Solution

15. Property of the alkaline earth metals that increases with their atomic number is

A. Solubility of their hydroxides in water

B. Solubility of their sulphates in water

C. Ionization energy

D. Electronegativity

Answer: A

Watch Video Solution

16. Which one of the following compounds is a peroxide?

A. KO_2

B. BaO_2

C. MnO_2

D. NO_2

Answer: B

Watch Video Solution

17. The compound A on heating gives a colourless gas and a residue that is dissolved in water to obtain B. Excess of CO_2 is bubbled through aqueous solution of B,C is formed which is recoved in the soid form.Solid C on gentle heating gives back A. The compound is

A. $CaCO_3$

B. Na_2CO_3

C. K_2CO_3

D. $CaSO_42H_2O$

Answer: A

Watch Video Solution

18. Which of the following oxides is not expected to react with sodium hydroxide ?

A. CaO

B. SiO_2

C. BeO

D. B_2O_3

Answer: A

Watch Video Solution

19. The alkali metals form salt like hydrides by the direct synthesis at elevated temperature. The termal stability of these hydrides decreases in which of the following orders ?

A. $LiH > NaH > KH > RbH > CsH$

B. $CsH > RbH > KH > NaH > LiH$

C. $KH > NaH > LiH > CsH > RbH$

D. $NaH > LiH > KH > RbH > CsH$

Answer: A

Watch Video Solution

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

A. $SrSO_4$

B. $BaSO_4$

C. $MgSO_4$

D. $RaSO_4$

Answer: C

Watch Video Solution

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

A. $K_2CO_3 < MgCO_3 < CaCO_3 < BeCO_3$

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

22. The correct order of mobility of alkali metal ions in aqueous solution is

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

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

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

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

Answer: D

Watch Video Solution

23. In Castner-Kellner cell for production of sodium hydroxide :

A. Brine is electrolyzed with Pt electrodes

B. Brine is electrolyzed using graphite electrodes

C. Molten magnesium chloride is electrolysed

D. Sodium amalgam is formed at mercury cathode

Answer: D

Watch Video Solution

24. In the replacement reaction

The reaction will be most favourable if M happens to be

A. Na

B. K

C. Rb

D. Li

Answer: C

Watch Video Solution

25. The solubility in water of sulphate down the Be group is $Be > Mg > Ca > Sr > Ba.$

A. Decreasing lattice energy

B. High heat-of solvation for smallier ions like Be^{2+}

C. Increase in melting points

D. Increasing molecular weight

Answer: B

Watch Video Solution

26. Sodium metal is made by the electrolysis of a molten mixture of about $40\,\%\,NaCI$ and $67\,\%\,CaCI_2$ in a

A. Ca^{++} can displace Na from NaCl

B. This mixture has a lower meting point than NaCl

C. $CaCl_2$ helps in conduction of electricity

D. Ca^{++} can reduce NaCl to Na

Answer: B

Watch Video Solution

27. Identify the correct statement.

A. Plaster of Paris can be obtained by hydeation of gypsum

B. Plaster of Paris is obtained by partial oxidation of gypsum

C. Gypsum contains a lower percentage of calcium than Plaster of Paris

D. Gypsum is obtained by heating Plaster of Paris

Answer: C

Watch Video Solution

28. Calcium is obtained by the

A. Reductin of calcium chloride with carbon

B. Electrolysis of molten anydrous calcium chloride

C. Roasting of limestone

D. Electrolysis of solution of calcium chloride in H_2O

Answer: B

Watch Video Solution

29. When a substance A reacts with water it produces a combustible gas B and a solution of substance C in water. When another substance D reacts with this solution of C, it also produces the same gas B on warming but D can produce gas B on reaction with dilute sulphuric acid at room temperature. A imparts a deep golden yellow colour a smokeless flame to Bunsen burner. A,B,C, and D respectively are :

A. $Ca, H_2, Ca(OH)_2, Sn$

B. K, H_2, KOH, Al

C. $Na, H_2, NaOH, Zn$

D. $CaC_2, C_2H_2, Ca(OH)_2, Fe$

Answer: C

Watch Video Solution

Assignment Section D

1. A : NaN_3 and Na_3 N both are stable.

R : Na when reacted with atmospheric nitrogen at different temperature forms. Stable NaN_3 and Na_3N

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: D

Watch Video Solution

2. A : Magnesium sulphate is heptahydrate where as calcium sulphate is dihydrate.

R : Mg and Ca belongs to Group II.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is not the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: B

Watch Video Solution

3. A : LiF and Csl both are less soluble in water .

R : LiF is with high lattice energy and Csi is with smaller

hydration energy.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: A

Watch Video Solution

4. A : Lithium is less reactive but the strogest reducing agent in aqueous solution.

R : Lithium shows positive reduction potential.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: C

 Watch Video Solution

5. A : Na and Li are stored under kerosene.

R : Na and Li are soluble in kerosene.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: D

Watch Video Solution

6. A : $CaCO_3$ requires more temperature than $MgCO_3$ for decomposition.

R : Group II metal carbonates on decomposition gives respective oxide and CO_2

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: B

Watch Video Solution

7. A : Magnesium and Cesium gives blue colour in flame colouration.

R : Mg and Cs are of comparable size.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is not the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: D

Watch Video Solution

8. Statement-1: Lithium has highest hydration energy.

Statement-2: Lithium is the stronger reducing agent.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: B

Watch Video Solution

9. A : On reaction with liquid ammonia, alkali metals give conducing solution.

R : Ammoniated e^- and ammoniated cations are formed when alkali metals is present in liquid ammonia.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: A

Watch Video Solution

10. Statement-1: Lithium's reaction with water is less vigorous than that of sodium.

Statement-2: : Lithium has small size and very high hydration energy.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: C

Watch Video Solution

11. A : Solubility of alkaline earth metal carbonates decreases down the group.

R : Hydration enthalpy decreases down the group whereas lattice enthalpy remain almost constant

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is not the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: A

Watch Video Solution

12. A : Magnesium do not impact flame colourtion.

R : The e^- in magnesium are too strongly bound to get excited by flame.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is not the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: A

Watch Video Solution

13. A : Baryllium hydroxide is basic in nature only

R : It reacts with acid only and not with base.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: D

Watch Video Solution

14. A : Aq solution of washing soda is alkaline in nature

R : It is salt of weak acid and strong base.

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is not the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: A

Watch Video Solution

15. (a). What is the hybrid state of Be in $BeCl_2$ in vapour state. What will be the change in the hybrid state of $BeCl_2$ in the solid state?

(b). Draw the structure of $(i) BeCl_2$ (vapour state) and (ii) $BeCl_2$ (solid state).

(c). Why do halides and hydrides of beryllium polymerise?

A. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (1).

B. If both Assertion & Reason are true and the reason is the correct explanantion of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false. Them mark (3).

D. If both Assertion and reason are false statement, then mark (4).

Answer: D

 Watch Video Solution