



CHEMISTRY

BOOKS - KUMAR PRAKASHAN KENDRA

CHEMISTRY (GUJRATI ENGLISH)

THE s-BLOCK ELEMENTS

Section A Try Your Self 1

1. Oxidation number of Li in Li_2O ?



View Text Solution

Section A Try Your Self 1

1. Write decreasing order of hydration enthalpy of alkali metal ions.

 [View Text Solution](#)

Section A Try Your Self 2

1. Arrange all elements of group - 1 in increasing order of their ionic radius.

 [View Text Solution](#)

Section A Try Your Self 3

1. Why lithium superoxide is not possible ?

 [View Text Solution](#)

Section A Problem

1. What is the oxidation state of K in KO_2 ?

 [View Text Solution](#)

2. The E^\ominus for Cl_2/Cl^- is +1.36, for I_2/I^- is +0.53, for Ag^+/Ag is +0.79, Na^+/Na is -2.71 and for Li^+/Li is -3.04.

Arrange the following ionic species in decreasing order of reducing strength : I^- , Ag , Cl^- , Li , Na

 [View Text Solution](#)

 [View Text Solution](#)

3. Why is KO_2 paramagnetic ?

 [View Text Solution](#)

4. Why does the solubility of alkaline earth metal hydroxides in water increase down the group ?

 [View Text Solution](#)

5. Why does the solubility of alkaline earth metal carbonates and sulphates in water decrease down the group ?

 [View Text Solution](#)

Section A Questions

1. Give primary details of alkali and alkali earth metals.



[View Text Solution](#)

2. Give brief on abundance of alkali metal and alkaline earth metal in earth crust.



[View Text Solution](#)

3. Which elements of group 1 and 2 are differ from the other elements of same group ? Give brief on diagonal relationship.



[View Text Solution](#)

4. Give general electronic configuration of alkali metals and give electronic configuration of each elements of alkali metals.

 [View Text Solution](#)

5. Give brief information on atomic and ionic radius of alkali metal (Group I).

 [View Text Solution](#)

6. Give brief information on Ionization Enthalpy and Hydration Enthalpy of alkali metal (Group I).

 [View Text Solution](#)

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

(a) Li (b) Na (c) K (d) Cs

 [View Text Solution](#)

8. Why are alkali metals not found in nature ?

 [View Text Solution](#)

9. Which of the alkali metal is having least melting point?

(a) Na (b) K (c) Rb (d) Cs

 [View Text Solution](#)

10. Write a note on physical properties of alkali metal elements (group 1).

 [View Text Solution](#)

11. Explain chemical properties of alkali metal elements (Group I).

 [View Text Solution](#)

12. (a) Describe chemical properties of air, water, dihydrogen and halogen. (b) Explain reduction potential of alkali metal elements. (c) Which type of solutions are formed on reaction of alkali metals with liquid ammonia ?

 [View Text Solution](#)

13. When an alkali metal dissolves in liquid ammonia the solution can acquire different colours. Explain the reasons for this type of colour change.

 [View Text Solution](#)

14. Comment of the following observations :

The mobilities of the alkali metal ions in aqueous solution are



 [View Text Solution](#)

15. Comment of the following observations :

Lithium is the only alkali metal to form a nitride directly.

 [View Text Solution](#)

16. Comment of the following observations :

E^\ominus for $M_{(aq)}^{2+} + 2e^- \rightarrow 2e^- \rightarrow M_{(s)}$ (where, M = Ca, Sr or

Ba) is nearly constant.

 [View Text Solution](#)

17. Give the uses of alkali metal elements (group-I).

 [View Text Solution](#)

18. General Characteristics of the Compounds of the Alkali Metals.

 [View Text Solution](#)

[View Text Solution](#)

19. Give brief explanations on hydroxides of alkali metals.

 [View Text Solution](#)

20. Write a note on halides of alkali metal elements and their physical properties.

 [View Text Solution](#)

21. Give short explanations on salt of oxo - acids of alkali metal elements.

 [View Text Solution](#)

22. Give anomalous properties of lithium. or Why lithium is differ from other alkali metals ?

 [View Text Solution](#)

23. Discuss properties difference observed in lithium and rest alkali metals.

 [View Text Solution](#)

24. Give comparison of properties between lithium and other alkali metals.

 [View Text Solution](#)

25. Write a note on anomalous behavior of lithium from other alkali metals.

 [View Text Solution](#)

26. In what ways lithium shows similarities to magnesium in its chemical behaviour ?

 [View Text Solution](#)

27. Give points of similarities between lithium and magnesium.

 [View Text Solution](#)

28. Discuss diagonal relationship of lithium with magnesium.

 [View Text Solution](#)

29. Why are lithium salts commonly hydrated and those of the other alkali ions usually anhydrous ?

 [View Text Solution](#)

30. Why is LiF almost insoluble in water whereas LiCl soluble not only in water but also in acetone ?

 [View Text Solution](#)

31. Discuss the various reactions that occur in the Solvay process.

 [View Text Solution](#)

32. Explain preparation of sodium carbonate by Solvay process with chemical reactions.

 [View Text Solution](#)

33. Potassium carbonate cannot be prepared by Solvay process. Why?

 [View Text Solution](#)

34. Explain properties of sodium carbonate.

 [View Text Solution](#)

35. Give uses of sodium carbonate ($Na_2CO_3 \cdot 10H_2O$).

 [View Text Solution](#)

36. Why is Li_2CO_3 decomposed at a lower temperature whereas Na_2CO_3 at higher temperature ?

 [View Text Solution](#)

37. How to prepare NaCl from the Brine salt solution (Sea water) ?



[View Text Solution](#)

38. Give preparation, properties and uses of sodium chloride (NaCl - Rock salt).



[View Text Solution](#)

39. Discuss industrial production of sodium hydroxide (NaOH - Caustic Soda) and mention its properties and uses.



[View Text Solution](#)

40. Explain how industrial production of sodium hydroxide is carried out by Castner-Kellner cell ?



[View Text Solution](#)

 [View Text Solution](#)

41. Discuss uses of caustic soda.

 [View Text Solution](#)

42. Give preparation and uses of sodium hydrogen carbonate (Baking soda - $NaHCO_3$).

 [View Text Solution](#)

43. Starting with sodium chloride how would you proceed to prepare (i) sodium metal (ii) sodium hydroxide (iii) sodium peroxide (iv) sodium carbonate?

 [View Text Solution](#)

44. Explain biological importance of sodium and potassium.

 [View Text Solution](#)

45. Write down biological importance of Na and K in human body and give brief note on sodium potassium pump.

 [View Text Solution](#)

46. Explain why is sodium less reactive than potassium ?

 [View Text Solution](#)

47. What happens when sodium metal is dropped in water ?



[View Text Solution](#)

48. What happens when sodium metal is heated in free supply of air ?



[View Text Solution](#)

49. What happens when sodium peroxide dissolves in water?



[View Text Solution](#)

50. State as to why a solution of Na_2CO_3 is alkaline?



[View Text Solution](#)

51. State as to why alkali metals are prepared by electrolysis of their fused chlorides?

 [View Text Solution](#)

52. State as to why sodium is found to be more useful than potassium ?

 [View Text Solution](#)

53. Write balanced equations for reactions between

(a) Na_2O_2 and water (b) KO_2 and water (c)

Na_2O and CO_2

 [View Text Solution](#)

54. Which elements are considered as alkaline earth metals?

Give brief about them.



[View Text Solution](#)

55. Write down the general electronic configuration of alkaline earth metals and give electronic configuration of all elements of this group.



[View Text Solution](#)

56. Give brief explanation on ionisation enthalpy of alkaline earth metals (Group-2) elements.



[View Text Solution](#)

57. Write a note on hydration enthalpy of group 2 elements (Alkaline earth metals).

 [View Text Solution](#)

58. Explain physical properties of alkaline earth metals (Group-2).

 [View Text Solution](#)

59. Explain chemical properties of alkaline earth metals (Group-2) in detail.

 [View Text Solution](#)

60. (a) Give reactivity of alkaline earth metals towards air, water, dihydrogen and acids.

(b) Explain reducing nature of alkaline earth metals.

(c) Give chemical reaction of alkaline earth metals with liquid ammonia.

 [View Text Solution](#)

61. Give uses of alkaline earth metals.

 [View Text Solution](#)

62. Give brief note on oxides of alkaline earth metal elements.

 [View Text Solution](#)

63. Explain how to obtain hydroxides of alkaline earth metal elements ? Also discuss properties of these hydroxides.

 [View Text Solution](#)

64. Write a note on halides of alkaline earth metal elements.

 [View Text Solution](#)

65. Draw the structure of (i) $BeCl_2$ (vapour)

(ii) $BeCl_2$ (solid).

 [View Text Solution](#)

66. Give detail explanation on Oxo acid salts of alkaline earth metal elements.

 [View Text Solution](#)

67. Give brief explanation on carbonates, sulphates and nitrate compounds of alkaline earth metal elements.

 [View Text Solution](#)

68. How beryllium is anomalous from alkaline earth metal elements?

 [View Text Solution](#)

69. Explain anomalous behavior of beryllium.

 [View Text Solution](#)

70. Write a note on : anomalous behavior of beryllium from other alkaline earth metal elements.

 [View Text Solution](#)

71. Give property comparison between beryllium and other alkaline earth metal elements.

 [View Text Solution](#)

72. Discuss diagonal relationship between beryllium and aluminum metal.

 [View Text Solution](#)

73. Give similarities between beryllium and aluminum metal.

 [View Text Solution](#)

74. Give preparation, properties and uses of Calcium oxide or quick lime (CaO).

 [View Text Solution](#)

75. Discuss use of quick lime.

 [View Text Solution](#)

76. Give preparation, properties and uses of Calcium Hydroxide (Slaked lime) $[Ca(OH)_2]$.

 [View Text Solution](#)

77. Write down preparation, properties and uses of Calcium Carbonate ($CaCO_3$).

 [View Text Solution](#)

78. Give uses of Calcium carbonate.

 [View Text Solution](#)

79. Write down preparation, properties and uses of Calcium sulphate $\left(CaSO_4 \cdot \frac{1}{2} H_2O \right)$ (Plaster of paris).

 [View Text Solution](#)

80. Discuss uses (importance) of plaster of paris.

 [View Text Solution](#)

81. What happens when magnesium is burnt in air ?

 [View Text Solution](#)

82. What happens when quick lime is heated with silica?

 [View Text Solution](#)

83. What happens when chlorine reacts with slaked lime

 [View Text Solution](#)

84. What happens when calcium nitrate is heated ?

 [View Text Solution](#)

85. Give basic about cement.



View Text Solution

86. Give information on percentage proportion of element and mixtures present in Portland cement.



View Text Solution

87. Give brief about production of cement and write its properties and uses.



View Text Solution

88. Give uses (importance) of cement.



[View Text Solution](#)

89. Give biological importance of calcium and magnesium.



[View Text Solution](#)

90. Compare the solubility and thermal stability of the following compounds of the alkali metals with those of the alkaline earth metals. (a) Nitrates (b) Carbonates (c) Sulphates.



[View Text Solution](#)

91. The hydroxides and carbonates of sodium and potassium are easily soluble in water while the corresponding salts of magnesium and calcium are sparingly soluble in water. Explain.

 [View Text Solution](#)

92. Explain the significance of sodium, potassium, magnesium and calcium in biological fluids.

 [View Text Solution](#)

93. How would you explain the following observations ?
Beo is almost insoluble but $BeSO_4$ is soluble in water.

 [View Text Solution](#)

94. How would you explain the following observations ?

BaO is soluble but $BaSO_4$ is insoluble in water.

 [View Text Solution](#)

95. How would you explain the following observations ?

LiI is more soluble than KI in ethanol.

 [View Text Solution](#)

96. Which one of the alkaline earth metal carbonates is thermally the most stable ?

(a) $MgCO_3$ (b) $CaCO_3$ (c) $SrCO_3$ (d) $BaCO_3$

 [View Text Solution](#)

97. What are the common physical and chemical features of alkali metals?

 [View Text Solution](#)

98. Find the oxidation state of sodium in Na_2O_2 .

 [View Text Solution](#)

99. Explain why alkali and alkaline earth metals cannot be obtained by chemical reduction methods ?

 [View Text Solution](#)

100. Why are potassium and cesium, rather than lithium used in photoelectric cells ?

 [View Text Solution](#)

101. Beryllium and magnesium do not give colour to flame whereas other alkaline earth metals do so. Why?

 [View Text Solution](#)

102. Compare the alkali metals and alkaline earth metals with respect to (i) ionization enthalpy (ii) basicity of oxides and (iii) solubility of hydroxides.

 [View Text Solution](#)

Section B Objective Questions Short Questions

1. Why elements of group-2 are known as alkaline earth metals ?

 [View Text Solution](#)

2. Which elements of group-I and group-II are differ from the other elements of same group?

 [View Text Solution](#)

3. Which elements of group-1 have highest hydration enthalpy? Why?

 [View Text Solution](#)

4. Why the alkali metals and their salts impart characteristic colour to an oxidizing flame ?

 [View Text Solution](#)

5. By which method, concentration of alkali metal can be determine ?

 [View Text Solution](#)

6. Which alkali metals are useful as electrodes in photoelectric cell ?

 [View Text Solution](#)

7. Write the chemical reaction to form oxides, peroxide and superoxides of alkali metals elements.

 [View Text Solution](#)

8. Define polarization.

 [View Text Solution](#)

9. Write general chemical reaction, which show the dissolution of alkali metal in liquid ammonia.

 [View Text Solution](#)

10. What is the use of alloy prepared by mixing lithium and lead (white metal) ?

 [View Text Solution](#)

11. Give use of organolead compound ?

 [View Text Solution](#)

12. Give two uses of KOH.

 [View Text Solution](#)

13. Why lithium show anomalous behavior ?



 [View Text Solution](#)

14. Name the industrially important compounds of Sodium ?

 [View Text Solution](#)

15. Potassium carbonate cannot be produced by Solvay process. Why?

 [View Text Solution](#)

16. What is Soda ash ?

 [View Text Solution](#)

17. Give any two uses of washing soda.



[View Text Solution](#)

18. Which compounds are found as impurity in impure sodium chloride ?



[View Text Solution](#)

19. Give two uses of NaCl.



[View Text Solution](#)

20. Give the name of commercial production method for sodium hydroxide.

 [View Text Solution](#)

21. What is sodium amalgam ?

 [View Text Solution](#)

22. How to obtain sodium amalgam ?

 [View Text Solution](#)

23. Give two uses of caustic soda.



 [View Text Solution](#)

24. Give uses of sodium hydrogen carbonate.

 [View Text Solution](#)

25. Give biological importance of sodium ion.

 [View Text Solution](#)

26. What do you mean by Sodium potassium pump?

 [View Text Solution](#)

27. Give name of group-2 elements.



[View Text Solution](#)

28. Give two uses of beryllium.



[View Text Solution](#)

29. Give two uses of magnesium.



[View Text Solution](#)

30. Why beryllium is amphoteric in nature ?



[View Text Solution](#)

31. Give important compounds of calcium.

 [View Text Solution](#)

32. What is slaking of lime ?

 [View Text Solution](#)

33. Give two uses of quick lime.

 [View Text Solution](#)

34. How to prepare calcium hydroxide ?

 [View Text Solution](#)

35. Give two uses of $Ca(OH)_2$.

 [View Text Solution](#)

36. Give two uses of calcium carbonate ?

 [View Text Solution](#)

37. How to obtain Calcium sulphate ?

 [View Text Solution](#)

38. What is dead burnt plaster?

 [View Text Solution](#)

 [View Text Solution](#)

39. Give two uses of Plaster of Paris.

 [View Text Solution](#)

40. Why cement is known as Portland cement ?

 [View Text Solution](#)

41. Give composition of Portland cement.

 [View Text Solution](#)

42. How to obtain cement clinker?



[View Text Solution](#)

43. Which are important ingredients present in Portland cement ?



[View Text Solution](#)

44. Why Gypsum is added to cement ?



[View Text Solution](#)

45. Give uses of cement.



[View Text Solution](#)

46. Why radius of ${}_{11}\text{Na}$ and ${}_{20}\text{Ca}$ are more as compared to ${}_{12}\text{Mg}$?

 [View Text Solution](#)

Section B Objective Questions Fill In The Blanks

1. Among all alkali metals is radioactive element."

 [View Text Solution](#)

2. Half life of ${}^{223}\text{Fr}$ is

 [View Text Solution](#)

3. Among all alkali metal ions having highest ionization enthalpy.

 [View Text Solution](#)

4. Lithium on reaction with nitrogen present in air is denoted by....

 [View Text Solution](#)

5. and metals are use in photoelectric cells.

 [View Text Solution](#)

6. When alkali metal dissolve in ammonia, it produces blue color solution. This color is due to

 [View Text Solution](#)

7. Li - Mg alloy used to prepare

 [View Text Solution](#)

8. Colors of super oxides of alkali metals are or

 [View Text Solution](#)

9. On combustion of lithium in presence of air it produces
and

 [View Text Solution](#)

10. On heating, lithium nitrate converts into

 [View Text Solution](#)

11. method is used to prepare sodium carbonate.

 [View Text Solution](#)

12. Sodium carbonate exist as





[View Text Solution](#)

13. Sodium hydroxide is also known as.....



[View Text Solution](#)

14. On reaction of sodium amalgam with water produce
and air.



[View Text Solution](#)

15. Sodium hydroxide on reaction with CO_2 produces



[View Text Solution](#)

16. Sodium hydrogen carbonate is known as

 [View Text Solution](#)

17. Calcium and beryllium have flame color and respectively.

 [View Text Solution](#)

18. Quantitative analysis of calcium is carried out by

 [View Text Solution](#)

19. Beryllium powder on combustion brightly in air and gives and

 [View Text Solution](#)

20. Beryllium hydroxide on soluble in alkali gives and

 [View Text Solution](#)

21. Calcium oxide commonly known as

 [View Text Solution](#)

22. Solution of calcium hydroxide is known as





[View Text Solution](#)

23. Common name of Calcium hydroxide is.....



[View Text Solution](#)

24. General name of calcium sulphate is



[View Text Solution](#)

25. Cement is also known as.....



[View Text Solution](#)

26. Cement is first introduced by



[View Text Solution](#)

Section B Objective Questions Match The Following

1. Match column-I with column-II:

Column-I	Column-II
(a) Super oxide	(p) Na_2O_2
(b) Peroxide	(q) CO_2
(c) Dioxide	(r) C_3O_2
(d) Sub oxide	(s) CsO_2

A. (a-s), (b-p), (c-q), (d-r)

B. (a-p), (b-q), (c-r), (d-s)

C. (a-q), (b-r), (c-p), (d-s)

D. (a-s), (b-p), (c-q), (d-r)

Answer: A

 [View Text Solution](#)

2. Match column-I with column-II:

Column-I	Column-II
(a) NaOH	(p) Silvine
(b) Na ₂ CO ₃	(q) As cooling agent in nuclear reactor
(c) Liquid Na	(r) Detergent soap
(d) Potassium	(s) In purification of Bauxite

A. (a-s), (b-r), (c-q), (d-p)

B. (a-p), (b-r), (c-q), (d-s)

C. (a-p), (b-q), (c-r), (d-s)

D. (a-s), (b-r), (c-p), (d-q)

Answer: A



View Text Solution

3. Match column-I with column-II:

Column-I (Ores)	Column-II (Chemical formula)
(a) Borex	(p) NaCl
(b) Carnite	(q) KCl
(c) Rock salt	(r) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$
(d) Silvine	(s) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

A. (a-s), (b-r), (c-q), (d-p)

B. (a-s), (b-r), (c-p), (d-q)

C. (a-r), (b-s), (c-p), (d-q)

D. (a-s), (b-q), (c-p), (d-r)

Answer: B



View Text Solution

4. Match column-I with column-II:

Column-I	Column-II
(a) Calcium	(p) Crimsio red
(b) Barium	(q) Brick red color
(c) Strontium	(r) Light green
	(s) Yellow

A. (a-r), (b-p), (c-q)

B. (a-q), (b-p), (c-r)

C. (a-q), (b-r), (c-p)

D. (a-q), (b-r), (c-s)

Answer: C



View Text Solution

5. Match column-I with column-II:

Column-I	Column-II
(a) Ra	(p) Aeroplane industry
(b) K	(q) Down cell
(c) Li	(r) Photo electric cell
(d) Na	(s) Radio active

A. (a-s), (b-r), (c-p), (d-q)

B. (a-s), (b-r), (c-q), (d-p)

C. (a-r), (b-s), (c-p), (d-q)

D. (a-s), (b-p), (c-r), (d-q)

Answer: A

 [View Text Solution](#)

6. Match column-I with column-II:

Column-I	Column-II
(a) Spodumine	(p) K
(b) Borex	(q) Na
(c) Silvine	(r) Li
(d) Chile salt petre	(s) Ca

A. (a-p), (b-q), (c-r), (d-s)

B. (a-r), (b-q), (c-p), (d-q)

C. (a-r), (b-q), (c-p), (d-s)

D. (a-r), (b-p), (c-q), (d-s)

Answer: B



[View Text Solution](#)

7. Match the following with one or more correct option:

Column-A	Column-B
(a) BeO	(p) Soluble in organic solvent
(b) $\text{MgCO}_3 \cdot \text{CaCO}_3$	(q) Amphoteric
(c) BeCl_2	(r) Having covalent characteristic
(d) Al(OH)_3	(s) Ore - Dolomite

A. (a-q,r), (b-s), (c-p,r), (d-q)

B. (a-p,r), (b-s), (c-p,r), (d-p)

C. (a-q), (b-s), (c-q), (d-q)

D. (a-q,r), (b-s), (c-p,r), (d-p)

Answer: A



[View Text Solution](#)

8. Match the following :

Metal	Uses
(1) Be	(a) To prepare Grignard reagent
(2) Ca	(b) In treatment of Cancer
(3) Mg	(c) To prepare windows of X-rays
	(d) To remove air from vaccumized tube

A. 1-d, 2-c, 3-b

B. 1-b, 2-d, 3-a

C. 1-c, 2-d, 3-a

D. 1-c, 2-a, 3-d

Answer: C



[View Text Solution](#)

9. Match the following :

Compound	Uses
(1) Soda ash	(a) In purification of sugar
(2) Calcium oxide	(b) As an antacids
(3) Baking soda	(c) In paper and textile industries
	(d) To prepare pure fats and oils

A. 1-c, 2-a, 3-b

B. 1-b, 2-d, 3-a

C. 1-d, 2-c, 3-b

D. 1-c, 2-d, 3-a

Answer: A



[View Text Solution](#)

10. Match the following :

Compound	Molecular formula
(1) Lime stone	(a) CaO
(2) Quick lime	(b) NaHCO ₃
(3) Washing soda	(c) CaCO ₃
	(d) Na ₂ CO ₃ · 10H ₂ O

A. 1-c, 2-a, 3-d

B. 1-b, 2-c, 3-d

C. 1-c, 2-d, 3-a

D. 1-d, 2-a, 3-b

Answer: A



[View Text Solution](#)

11. Match the average fundamental compounds with their proper percentage present in Portland cement.

Compound	Percentage proportion
(1) CaO	(a) 5 - 10 %
(2) Al ₂ O ₃	(b) 1 - 3 %
(3) SO ₃	(c) 1 - 2 %
	(d) 50 - 60 %

A. 1-d, 2-c, 3-b

B. 1-b, 2-d, 3-a

C. 1-d, 2-a, 3-b

D. 1-c , 2-a, 3-d

Answer: C



View Text Solution

12. Match the following metals with their oxidizing flame color.

Compound	Flame color
(1) Li	(a) Red - violet
(2) K	(b) Blue
(3) Cs	(c) Dark red
	(d) Violet

A. 1-d, 2-c, 3-b

B. 1-b, 2-c, 3-a

C. 1-c, 2-a, 3-b

D. 1-c, 2-d, 3-b

Answer: D



[View Text Solution](#)

13. Match the following:

Metals	Minerals
(1) Lithium	(a) Witherite
(2) Barium	(b) Celestine
(3) Magnesium	(c) Lipidolite
	(d) Crinite

A. 1-c, 2-d, 3-b

B. 1-b, 2-c, 3-d

C. 1-c, 2-a, 3-d

D. 1-d, 2-a, 3-a

Answer: C



[View Text Solution](#)

14. Match the following :

Elements	Ore
(1) Lithium	(a) Beryle oxide
(2) Sodium	(b) Spodumine
(3) Beryllium	(c) Gypsum
(4) Calcium	(d) Carnite

A. 1-d, 2-a, 3-b, 4-c

B. 1-c, 2-d, 3-a, 4-b

C. 1-b, 2-d, 3-a, 4-c

D. 1-b, 2-c, 3-d, 4-a

Answer: C



[View Text Solution](#)

15. Match the following :

Elements	Ore
(1) Barium	(a) Crainite / Carnelite
(2) Magnesium	(b) Silvine
(3) Potassium	(c) Celestine
(4) Strontium	(d) Witherite

A. 1-a, 2-d, 3-c, 4-a

B. 1-d, 2-a, 3-a, 4-c

C. 1-a, 2-c, 3-a, 4-b

D. 1-c, 2-b, 3-d, 4-a

Answer: B



View Text Solution

16. Match the following :

Metals	Flame color
(1) Li	(a) Violet
(2) K	(b) Dark red
(3) Rb	(c) Blue
(4) Cs	(d) Red - violet

A. 1-b, 2-a, 3-d , 4-c

B. 1-d, 2-c, 3-b, 4-a

C. 1-c, 2-d, 3-b, 4-a

D. 1-d, 2-a, 3-b, 4-c

Answer: A



View Text Solution

17. Match the following :

Compound	Uses
(1) CaCO_3	(a) In preparation of oils and fats
(2) NaOH	(b) As an antiseptic
(3) Ca(OH)_2	(c) As an antacid
(4) NaHCO_3	(d) For making bleaching powder

A. 1-c, 2-d, 3-a, 4-b

B. 1-b, 2-c, 3-b, 4-d

C. 1-d, 2-a, 3-b, 4-c

D. 1-d, 2-c, 3-b, 4-a

Answer: C



[View Text Solution](#)

18. Match the following:

Metal	Ore
(1) Sodium	(a) Barite
(2) Potassium	(b) Carnite
(3) Barium	(c) Oxide beryle
(4) Beryllium	(d) Carnelite

A. 1-d, 2-c, 3-a, 4-b

B. 1-c, 2-d, 3-b, 4-a

C. 1-b, 2-d, 3-a, 4-c

D. 1-b, 2-c, 3-d, 4-a

Answer: C



[View Text Solution](#)

19. Match the following:

Elements	Flame
(1) Li	(a) Yellow
(2) Na	(b) Red - violet
(3) Rb	(c) Blue
(4) Cs	(d) Dark red

A. 1-b, 2-d, 3-a, 4-c

B. 1-d, 2-a, 3-b, 4-c

C. 1-c, 2-d, 3-a, 4-b

D. 1-c, 2-d, 3-b, 4-a

Answer: B



[View Text Solution](#)

20. Match the following:

Metal	Uses
(1) Sodium	(a) For preparing spring
(2) Beryllium-copper	(b) In treatment of cancer
(3) Radium	(c) In preparation of aeroplane
(4) Magnesium - aluminium	(d) In color industries

A. 1-b, 2-a, 3-d, 4-c

B. 1-c, 2-b, 3-a, 4-d

C. 1-c, 2-d, 3-b, 4-a

D. 1-d, 2-a, 3-b, 4-c

Answer: D



[View Text Solution](#)

21. Match the constituents of cements with their percentage proportion :

Constituents	Percentage
(1) CaO	(a) 2 - 3 %
(2) MgO	(b) 50 - 60 %
(3) SiO ₂	(c) 5 - 10 %
(4) Al ₂ O ₃	(d) 20 - 25 %

A. 1-b, 2-a, 3-d, 4-c

B. 1-c, 2-a, 3-b, 4-d

C. 1-d, 2-a, 3-b, 4-c

D. 1-b, 2-c, 3-d, 4-a

Answer: A



[View Text Solution](#)

22. Match the following:

Compound	Uses
(1) CaCO_3	(a) In purification of coal gas
(2) $\text{Ca}(\text{OH})_2$	(b) As an antacid
(3) CaO	(c) In paper and textile industries
(4) $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$	(d) In glass and leather industries

A. 1-d, 2-c, 3-a, 4-b

B. 1-c, 2-a, 3-d, 4-b

C. 1-b, 2-c, 3-d, 4-a

D. 1-b, 2-d, 3-a, 4-c

Answer: D



[View Text Solution](#)

Section B Objective Questions State True Or False For The Following Statements

1. Half-life of ^{223}Fr is 21 seconds.

 [View Text Solution](#)

2. Li^+ have high hydration fraction and therefore its salts are usually hydrated in nature.

 [View Text Solution](#)

3. Among all the alkali metals only Na can react with nitrogen of air and can form nitride.

 [View Text Solution](#)

4. Except LiF, other halides of Li are soluble in water

 [View Text Solution](#)

5. 90g Na and 170g K is present in a person with 70 kg of body weight.

 [View Text Solution](#)

6. Ionization enthalpy of alkaline earth metals increases on moving top to bottom.

 [View Text Solution](#)

7. In vapour phase, BeCl_2 , possess polymer like arrangement.

 [View Text Solution](#)

8. CaCO_3 is used in preparation of mortar.

 [View Text Solution](#)

9. Plaster of Paris is used to joint fracture bones and keeping them immobilize.

 [View Text Solution](#)

10. Calcium carbonate and soil are the raw materials for cement production.

 [View Text Solution](#)

Section B Objective Questions Assertion And Reason Type Questions

1. Assertion (A) : Salt of Li are hydrated.

Reason (R) : Lit have high hydrated fraction.

A. Assertion (A) is true, Reason (R) is true. Reason (R) is a correct explanation for Assertion (A).

B. Assertion (A) is true, Reason (R) is true, Reason - (R) is not a correct explanation for Assertion (A).

C. Assertion (A) is true, Reason (R) is false

D. Assertion (A) is false, Reason (R) is true.

Answer: A

 [View Text Solution](#)

2. Assertion (A) : Cs and K are used as electrode in photoelectrical cell.

Reason (R) : Cs and K formed superoxide.

A. Assertion (A) is true, Reason (R) is true. Reason (R) is a correct explanation for Assertion (A).

B. Assertion (A) is true, Reason (R) is true, Reason - (R) is not a correct explanation for Assertion (A).

C. Assertion (A) is true, Reason (R) is false

D. Assertion (A) is false, Reason (R) is true.

Answer: B

 [View Text Solution](#)

3. Assertion (A) : KO_2 is paramagnetic.

Reason (R) : It has one unpaired electron in its π^*2p orbital.

A. Assertion (A) is true, Reason (R) is true. Reason (R) is a correct explanation for Assertion (A).

B. Assertion (A) is true, Reason (R) is true, Reason - (R) is not a correct explanation for Assertion (A).

C. Assertion (A) is true, Reason (R) is false

D. Assertion (A) is false, Reason (R) is true.

Answer: A



[View Text Solution](#)

Section C Multiple Choice Questions Mcqs

1. Modern periodic table is classified in how many blocks?

- A. Two
- B. Three
- C. Four
- D. Seven

Answer: C



[View Text Solution](#)

2. Elements of group - I-A is known as...

- A. Alkali elements
- B. Alkaline earth elements
- C. Inertelements
- D. Seven

Answer: A



[View Text Solution](#)

3. Which of the following element is not consider in group - I-

A?

A. Li

B. K

C. Rb

D. Sr

Answer: D



View Text Solution

4. Meaning of Alkali word is...

A. Ash of Coal

B. Ash of Herb

C. Ash of wood

D. None of the above

Answer: C



[View Text Solution](#)

5. Which metal carbonates are majorly present in ash of plant herb ?

A. Rb and Cs

B. Fr

C. Sr and Ra

D. Na and K

Answer: D



[View Text Solution](#)

6. Which type of Na and K metal salts are more present in ash of plant ?



Answer: B

 [View Text Solution](#)

7. Elements of group - II are known as...

A. Halogen elements

B. Alkaline elements

C. Inertelements

D. Alkaline earth elements

Answer: D



View Text Solution

8. Which of the following element is not consider as group - II-A ?

A. Mg

B. Sr

C. Ra

D. Fr

Answer: D



View Text Solution

9. Which of the following element is not consider as alkaline earth metal ?

A. Be

B. Mg

C. Ca

D. Ra

Answer: A



View Text Solution

10. Which alkali metal is radioactive element?

A. Cesium

B. Sodium

C. Rubidium

D. Francium

Answer: D



[View Text Solution](#)

11. What is the half life of Fr?

A. 21 minute

B. 21 Seconds

C. 2.1 minute

D. 12 minute

Answer: A



View Text Solution

12. Which alkali metal element having percentage proportion of 4% in earth crust?

A. Na and Rb

B. Li and K

C. Na and K

D. Fr

Answer: C



[View Text Solution](#)

13. Give abundancy of calcium and magnesium in earth crust.

A. 5 and 6

B. 4 and 5

C. 2 and 3

D. 4 and 6

Answer: A



[View Text Solution](#)

14. Which of the following alkaline earth metal is highly inert...

A. Li

B. Fr

C. Ba

D. Ra

Answer: D



[View Text Solution](#)

15. Give general electronic configuration of group - I-A.

A. ns^1

B. ns^2

C. ns^2np^1

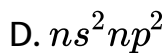
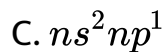
D. ns^2np^2

Answer: A



[View Text Solution](#)

16. Give electronic configuration of group - II-A.



Answer: B



[View Text Solution](#)

17. Which group-I element is differ from other elements of same group ?

A. Be

B. Mg

C. Li

D. Ca

Answer: C



[View Text Solution](#)

18. Which element of every group shows anomalous properties?

A. First

B. Last

C. Second

D. Third

Answer: A



[View Text Solution](#)

19. Which of the following pair of elements shows diagonal relationship?

A. Li and Be

B. Li and Mg

C. Li and Na

D. Li and Ba

Answer: B



[View Text Solution](#)

20. Diagonal relationship of elements can be explain by which of the following properties?

A. Ionic size

B. Boiling point

C. Ionization enthalpy

D. Density

Answer: A



[View Text Solution](#)

21. Which of the following covalent ions are highly present in biological compound ?

A. Na

B. Rb

C. Li

D. Cs

Answer: A



[View Text Solution](#)

22. Which of the following is not ore of sodium metal ?

A. Borex

B. Silvine

C. Rock salt

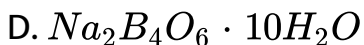
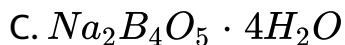
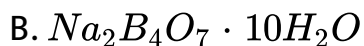
D. Carnite

Answer: B



[View Text Solution](#)

23. Molecular formula of borex is....



Answer: B



[View Text Solution](#)

24. Elements of group - I-A are not found in free state, because...

- A. easily lose electrone.
- B. easily gain electrone.
- C. found in traces amount.
- D. both (B) and (C)

Answer: A



[View Text Solution](#)

25. Which of the following properties of alkali elements shows their weak bond in solid state ?

- A. Low boiling point and high electric conductivity.
- B. Low melting point
- C. High melting point
- D. Low electric conductivity

Answer: A

 [View Text Solution](#)

26. Na shows which type of color flame ?

- A. Yellow

B. Crimson red

C. Blue

D. Red

Answer: A



View Text Solution

27. Ionization enthalpy of alkali elements are low, because....

A. their electronegativity is too high.

B. they have smaller size.

C. weak attraction towards valence electron.

D. nuclear attraction are very high.

Answer: C



View Text Solution

28. Proportion of Na and K like metals are measured by which instrument?

- A. Spectrometer
- B. Microscope
- C. Flame photometer
- D. Electron microscope

Answer: C



View Text Solution

29. Which two metal elements are used in photoelectric cell?

A. Na and K

B. Cs and K

C. Rb and Cs

D. Fr and K

Answer: B



[View Text Solution](#)

30. Na and K have low density, because...

A. they have smaller size.

B. they have bigger size.

C. due to nuclear attraction force.

D. due to high electronegativity.

Answer: B



View Text Solution

31. Alkali metal element have low melting point and boiling point, because...

A. weak metallic bond.

B. strong metallic bond.

C. weak covalent bond.

D. strong attraction towards valence electron.

Answer: A



[View Text Solution](#)

32. Surface of alkali metals get dulled in presence of humid air. Because ...

- A. sulphide layer is formed on their surface.
- B. hydroxide layer is formed on their surface.
- C. oxide layer is formed on their surface.
- D. Both (B) and (C)

Answer: D



[View Text Solution](#)

33. What is the relation of positive ion with their parent atom ?

A. Double

B. Small

C. Half

D. High

Answer: B

 [View Text Solution](#)

34. Which group of element of periodic table has least ionization enthalpy ?

A. I-A

B. II-A

C. III-A

D. V-A

Answer: A



[View Text Solution](#)

35. Electrons of valence orbital have force of attraction is decrease because...

A. smaller atomic size.

B. bigger atomic size.

C. high electronegativity.

D. high ionization enthalpy.

Answer: B



[View Text Solution](#)

36. metals having very high hydration fraction.

A. Li

B. Na

C. K

D. Rb

Answer: A



[View Text Solution](#)

37. Why alkali metals are used as coolant in nuclear reactor ?

- A. Due to conductor of heat
- B. Due to insulator of heat
- C. Due to high electronegativity
- D. Due to smaller atomic size

Answer: A



[View Text Solution](#)

38. Due to high electronegativity of alkali metals react with elements of high electronegative compound and formed Bond.

- A. Metallic bond
- B. Covalent bond
- C. Coordinate covalent bond
- D. Ionic bond

Answer: D



[View Text Solution](#)

39. Hydration enthalpy of alkali metals with increase in ionic size.

- A. Increases
- B. Reman constant
- C. Decreases

D. Can't decided

Answer: C



[View Text Solution](#)

40. Alkali metals are highly reactive due to....

- A. Smaller size and low ionization energy.
- B. Higher size and low ionization energy.
- C. Smaller size and high ionization energy.
- D. Higher size and high ionization energy.

Answer: B



[View Text Solution](#)

41. Which element have highest reactivity ?

A. Rb

B. Li

C. Na

D. K

Answer: A



[View Text Solution](#)

42. Which of the following metal can form super oxide ?

A. K

B. Rb

C. Cs

D. All of above

Answer: D



[View Text Solution](#)

43. Which of the following metal form peroxide ?

A. Li

B. Na

C. K

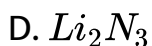
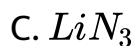
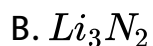
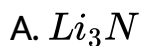
D. Rb

Answer: B



[View Text Solution](#)

44. Lithium on direct reaction with nitrogen formed....



Answer: A



[View Text Solution](#)

45. Alkali metals on reaction with enough amount of oxygen can form...

A. Super oxide

B. Oxide

C. Monoxide

D. Peroxide

Answer: D



[View Text Solution](#)

46. Oxidation number of oxygen in super oxide is...

A. $-\frac{1}{2}$

B. $+\frac{1}{2}$

C. -1

D. $+1$

Answer: A



View Text Solution

47. Alkali metals are stored in...

A. Water

B. Kerosene

C. Alcohol

D. Acid

Answer: B



View Text Solution

48. Which of the following hydroxide is partially soluble in water ?

A. LiOH

B. NaOH

C. KOH

D. RbOH

Answer: A



[View Text Solution](#)

49. Which property does aqueous solution of monoxide or peroxides carries?

A. Acidic

B. Basic

C. Neutral

D. Amphoteric

Answer: B



[View Text Solution](#)

50. Which color does alkali metals produces with ammonia ?

A. Violet

B. Red

C. Blue

D. White

Answer: C



View Text Solution

51. Li is less vigorously react then Na, because its...

- A. Smaller size and high hydration enthalpy.
- B. Larger size and high ionization enthalpy.
- C. High electronegativity.
- D. Larger size and high hydration enthalpy.

Answer: A



View Text Solution

52. Which gas is released on reaction of alkali metal hydride with water ?

A. Oxygen

B. Hydrogen

C. Nitrogen

D. Sulphur dioxide

Answer: B



[View Text Solution](#)

53. Which of the following metal have high reducing power ?

A. Li

B. Na

C. K

D. Cs

Answer: A



View Text Solution

54. Which of the following metal has high hydration enthalpy?

A. Li

B. Na

C. K

D. Cs

Answer: A



[View Text Solution](#)

55. Which of the following compound is more covalent in nature ?

A. LiF

B. LiCl

C. LiBr

D. LiI

Answer: D



[View Text Solution](#)

56. Which of the following halide compound is water in soluble ?

A. LiF

B. LiCl

C. LiBr

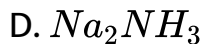
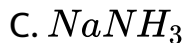
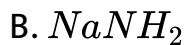
D. LiI

Answer: A

 [View Text Solution](#)

57. obtained on passing of dry ammonia over sodium metal at high temperature.

A. Na_2NH_2



Answer: B



[View Text Solution](#)

58. Blue color of concentrated ammoniated solution of alkali metals get converted into color.

A. Black - blue

B. Black - green

C. Violet

D. Colorless

Answer: A



[View Text Solution](#)

59. Li on reaction with nitrogen form which type of compound?

- A. Lithium-nitrite
- B. Lithium-nitrate
- C. Lithium - nitride
- D. None of above

Answer: C



[View Text Solution](#)

60. Which of the following elements shows diagonal relationship ?

A. Li and Mg

B. Li and Na

C. Li and Al

D. Ba and Li

Answer: A

 [View Text Solution](#)

61. The similarity between lithium and magnesium is observed due to...

A. Size

B. Radius ratio

C. Electricity

D. All of above

Answer: D



View Text Solution

62. Which of the following salt is not obtained from lithium and magnesium ?

A. Oxide

B. Bicarbonate

C. Nitride

D. Hydroxide

Answer: B



View Text Solution

63. Which alkali metal salt is obtained as hydrated crystal ?

A. Li

B. Mg

C. K

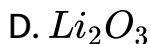
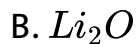
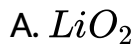
D. Fr

Answer: A



View Text Solution

64. On heating of lithium nitrate it produce...



Answer: B



[View Text Solution](#)

65. Which of the following halide is less soluble in water ?



C. CsF

D. KF

Answer: A

 [View Text Solution](#)

66. Ionic radius of Be^{+2} is approximately

A. 76 pm

B. 160 pm

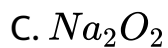
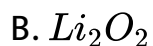
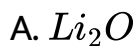
C. 72 pm

D. 31 pm

Answer: D

 [View Text Solution](#)

67. Which of the following oxide is unstable

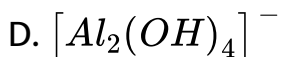
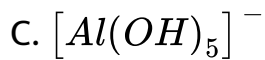
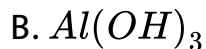
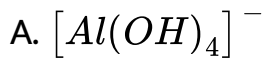


Answer: B



[View Text Solution](#)

68. On dissolving Aluminum hydroxide in excess of alkali produces ions.

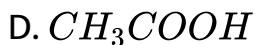
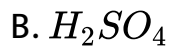


Answer: A



[View Text Solution](#)

69. Like aluminum Beryllium is inert towards acid.



Answer: C



View Text Solution

70. Like Al_4C_3 , Be_2C is produce gas.

A. Oxygen

B. Hydrogen

C. Ethane

D. Methane

Answer: D



View Text Solution

71. How many coordination number can shown by beryllium ?

A. Four

B. Six

C. Two

D. Eight

Answer: A



[View Text Solution](#)

72. Both Be and Al metals shows properties.

A. Acidic

B. Basic

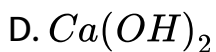
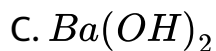
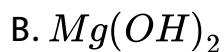
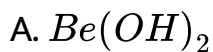
C. Neutral

D. Amphoteric

Answer: D

 [View Text Solution](#)

73. Which of the following hydroxide does not shows basic properties?



Answer: A



[View Text Solution](#)

74. Which of the following is not an ore of lithium ?

- A. Spodumine
- B. Lipidolite
- C. Amblygonite
- D. Carnite

Answer: D



[View Text Solution](#)

75. Which of the following metal is softer than Pb but harder than Na ?

A. Li

B. Al

C. Sr

D. Cs

Answer: A



[View Text Solution](#)

76. Which of the following alkali metal shows high melting point ?

A. Li

B. Al

C. Sr

D. Cs

Answer: A



View Text Solution

77. Which metal is used in formation of armor plate ?

A. Cs

B. Rb

C. K

D. Li and Ba

Answer: D



View Text Solution

78. is corrosion resistant alloy.

A. 14% Li + 1% Mg

B. 11% Mg + 14% Li

C. 14.1% Mg + 1% Li

D. 41% Mg + 1.4% Li

Answer: A



[View Text Solution](#)

79. Li is not used in

A. aero plane industries.

B. nuclear reactor.

C. alloy formation.

D. as reducing agent.

Answer: B



[View Text Solution](#)

80. Molecular formula of chili salt peter is.....

A. $NaNO_3$

B. $NaNO_2$

C. NaCl

D. Na_2NO_3

Answer: A



[View Text Solution](#)

81. Which of the following metals are use in down cell as positive electrode and negative electrode respectively?

- A. Graphite and steel
- B. Steel and iron
- C. Steel and graphite
- D. Graphite and iron

Answer: A



View Text Solution

82. Sodium metal is stored in to avoid contact with air and water.

A. Alcohol

B. Kerosene

C. Ether

D. Water

Answer: B



[View Text Solution](#)

83. In presence of excess of oxygen, sodium metal on immediate reaction produces

A. Na_2O

B. Na_2O

C. NaO_2

D. NaO

Answer: B



[View Text Solution](#)

84. On very immediate reaction of sodium metal with water, it produces gas.

A. Oxygen

B. Hydrogen

C. Nitrogen

D. Carbon dioxide

Answer: B

 [View Text Solution](#)

85. Uses of sodium metal is....

A. as a reducing agent

B. in nuclear reactor

C. in lesion test

D. All of above

Answer: D

 [View Text Solution](#)

86. element is distinct from its group elements.

A. Be

B. Ca

C. Sr

D. Ra

Answer: A



[View Text Solution](#)

87. In alkaline earth metals is radio active.

A. Beryllium

B. Calcium

C. Barium

D. Radium

Answer: D



[View Text Solution](#)

88. Which group-2 elements are found abundantly?

A. Ca and Mg

B. Sr and Ba

C. Ca and Be

D. Mg and Sr

Answer: A



[View Text Solution](#)

89. Which of the following have least ionization enthalpy?

A. Be

B. Mg

C. Ca

D. Sr

Answer: D



[View Text Solution](#)

90. Barium and magnesium are of colour.

A. Ash like

B. White

C. Red

D. Faint green

Answer: A



[View Text Solution](#)

91. Flame color of calcium is....

A. light green

B. brick red

C. crimson

D. crimson red

Answer: B



View Text Solution

92. Which of the following metal have crimson red color ?

A. Ca

B. Ba

C. Sr

D. Mg

Answer: C



View Text Solution

93. Which of the following metals are not detected by flame test?

A. Be and Mg

B. Ba and Ca

C. Sr and Ca

D. Mg and Ca

Answer: A



View Text Solution

94. Qualitative analysis of calcium can be done by using

A. Microscope

- B. Flame photometer
- C. Electron microscope
- D. Spectro photometer

Answer: B



View Text Solution

95. Be and Mg are inert because layer is formed on their surface.

- A. Sulphide
- B. Nitrite
- C. Hydroxide
- D. Oxide

Answer: D



View Text Solution

96. Oxides of beryllium and magnesium are in water.

- A. Insoluble
- B. Partially soluble
- C. Soluble
- D. Both (B) and (C)

Answer: B



View Text Solution

97. Beryllium oxide is.....

- A. Acidic
- B. Basic
- C. Neutral
- D. Amphoteric

Answer: D



[View Text Solution](#)

98. Which of the following oxide does not form hydroxide on reaction with water?

- A. MgO

B. CaO

C. BeO

D. All

Answer: C



[View Text Solution](#)

99. In physical state of $BeCl_2$ possess porous structure with chloride bridge.

A. Solid

B. Liquid

C. Vapor

D. Semi solid

Answer: C



View Text Solution

100. Which bond is responsible for solubility of beryllium halide in organic solvent ?

- A. Ionic
- B. Covalent
- C. Metallic
- D. Coordinate covalent

Answer: B



View Text Solution

101. On condensation of $BeCl_2$ vapor it forms $BeCl_6$ dimeric with coordination number of....

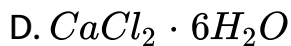
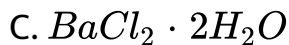
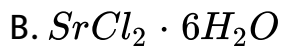
- A. Two
- B. Four
- C. Three
- D. Six

Answer: B

 [View Text Solution](#)

102. Which hydrated halide compound shows hydrolysis?

- A. $MgCl_2 \cdot 8H_2O$

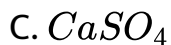
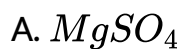


Answer: A



View Text Solution

103. Which of the following sulphate salt have least solubility in water?



Answer: D



[View Text Solution](#)

104. Metal carbonate on reaction with acid gives nitrate.

A. Nitrous acid

B. Nitric acid

C. Picric acid

D. Sulphuric acid

Answer: B



[View Text Solution](#)

105. Barium nitrate is crystallize as salt.

- A. Complex salt
- B. Anhydrous salt
- C. Hydrous salt
- D. Ionic salt

Answer: B



View Text Solution

106. Carbonates of alkaline earth metals are in water.

- A. Soluble
- B. Insoluble

C. Partially soluble

D. Fairly soluble

Answer: B



View Text Solution

107. is added to get precipitation of alkaline earth metals from their solution of soluble salts.

A. Na_2CO_3

B. Li_2CO_3

C. H_2CO_3

D. K_2CO_3

Answer: A



[View Text Solution](#)

108. Like alkali metals, alkaline earth metals are also soluble in

.....

- A. Ether
- B. Ammonia
- C. Alcohol
- D. Water

Answer: B



[View Text Solution](#)

109. Alkaline earth metals produce color on solubilizing in ammonia solution.

A. Brown

B. Light green

C. Dark blue

D. Light red

Answer: C



View Text Solution

110. alloys are used to form springs with high strength.

A. Cu - Be

B. Cu - Ba

C. Cu - Sr

D. Ba - Sr

Answer: A



View Text Solution

111. metals are used to form windows of X-ray tubes.

A. Mg

B. Ba

C. Cu

D. Be

Answer: D



[View Text Solution](#)

112. alloy is used to prepare aeroplane, as they are light in weight.

A. Ba - Li

B. Be - Li

C. Li - Al

D. Mg - Al

Answer: D



[View Text Solution](#)

113. metal is used to form Grignard reagent.

A. Mg

B. Li

C. Cu

D. Be

Answer: A

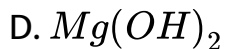
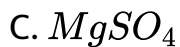


[View Text Solution](#)

114. Suspension of in water is known as milk of magnesia.

A. $MgCl_2$

B. $MgCO_3$

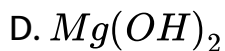
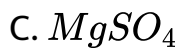
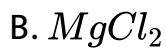
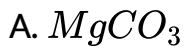


Answer: D



View Text Solution

115. is a component of toothpaste.



Answer: A



View Text Solution

116. In treatment of cancer salts are used.

A. Mg

B. Ca

C. Ra

D. Sr

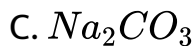
Answer: C



[View Text Solution](#)

117. Give molecular formula for washing soda.

A. $Na_2CO_3 \cdot 10H_2O$



Answer: A



View Text Solution

118. Use of sodium carbonate is....

A. in preparation of borex.

B. to convert hard water into soft water.

C. in laundry.

D. All of above

Answer: D



[View Text Solution](#)

119. Industrial production of NaOH is carried out in cell by electrolysis of NaCl.

A. Down cell

B. Castner Kellner

C. Dry cell

D. Fuel cell

Answer: B



[View Text Solution](#)

120. On electrolysis of sodium chloride gas is produce on anode.

A. O_2

B. Cl_2

C. H_2

D. N_2

Answer: B

 [View Text Solution](#)

121. On reaction of Na/Hg with water, it produces NaOH and gas.

A. Dihydrogen

B. Oxygen

C. Chlorine

D. None of above

Answer: A



View Text Solution

122. Which of the following is not use of NaOH ?

A. In purification of petroleum.

B. As a reagent in laboratory.

C. In preparation of soap.

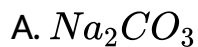
D. To convert hard water to soft water.

Answer: D



[View Text Solution](#)

123. Give formula for baking soda.

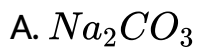


Answer: B



[View Text Solution](#)

124. is used as fire extinguisher.



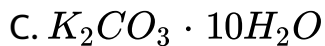
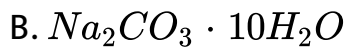
Answer: B



View Text Solution

125. Solvay ammonia soda process is used to prepare
industrially.





Answer: B



View Text Solution

126. Which gas is produced when washing soda is reacted with acid ?



Answer: D



View Text Solution

127. Hydrolysis of sodium carbonate produce solution.

A. Acidic

B. Basic

C. Amphoteric

D. Neutral

Answer: B



View Text Solution

128. Sodium hydrogen carbonate is produced on passing of which gas through the washing soda?

A. O_2

B. H_2

C. CO

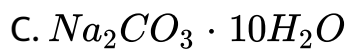
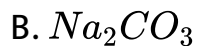
D. CO_2

Answer: D



[View Text Solution](#)

129. To make pastries like edible food light and porous is added to it.



Answer: A



View Text Solution

130. Which of the following is antacid ?

A. Baking soda

B. Washing soda

C. NaOH

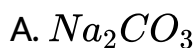
D. K_2CO_3

Answer: A



[View Text Solution](#)

131. Which of the following salt is not produce from the solvey ammonia soda process ?



D. None

Answer: C



[View Text Solution](#)

132.ion plays an important role as neuronal messenger.

A. Na^+

B. K^+

C. Cl^-

D. Mg^+

Answer: A



View Text Solution

133. Sodium and potassium ions are chemically differ in which matter ?

A. For transportation of amino acid

B. In capacity to activation of enzyme

C. For messenger purpose

D. For transportation of sugar in cell.

Answer: B



View Text Solution

134. In blood plasma, sodium ion is approximately
milimole/liter.

A. 134

B. 143

C. 105

D. 5

Answer: B



[View Text Solution](#)

135. ion concentration increases blood pressure.

A. Lithium

B. Sodium

C. Potassium

D. Magnesium

Answer: B



[View Text Solution](#)

136. Which biological pump is important for biochemical reaction in human body?

A. Ca-Mg

B. Na-K

C. Fe-Cu

D. Ca-Fe

Answer: B



[View Text Solution](#)

137. Lime stone is heated at elevated temperature furnace to convert it in quick lime.

A. Rotary

B. Reverberatory

C. Blast

D. All

Answer: A



View Text Solution

138. Give name of Cao.

A. Calcium Oxide

B. Quick lime

C. Both (A) and (B)

D. None

Answer: C



[View Text Solution](#)

139. Calcium oxide on mixing with caustic soda formed

A. Sodalime

B. Lime stone

C. Slaked lime

D. All

Answer: A



[View Text Solution](#)

140. Which of the following is not use of CaO ?

- A. As bleaching powder
- B. In purification of sugar
- C. To convert hard water to soft water
- D. As an antiseptic

Answer: D



View Text Solution

141. Mixture of calcium carbonate and magnesium carbonate are used as flux in isolation of metals.

- A. Steel

B. Copper

C. Iron

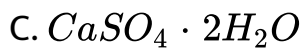
D. Zinc

Answer: C



[View Text Solution](#)

142. Formula for Plaster of Paris....



Answer: B



View Text Solution

143. Setting time can be reduced by addition of in plaster of Paris.

- A. Borex
- B. Salt
- C. Potash alum
- D. Both (A) and (C)

Answer: D



View Text Solution

144. Setting time can be increase by addition of in plaster of Paris.

A. NaCl

B. Na_2CO_3

C. $CaCO_3$

D. $CaSO_4$

Answer: A



[View Text Solution](#)

145. Mixture of and plaster of paris, which on setting become hard and known as kiln cement.

A. Borex

B. Potash alum

C. Sodalime

D. Gypsum

Answer: B



View Text Solution

146. Raw material in production of cement is.....

A. Soil

B. Lime stone

C. Potash alum

D. Both (A) and (B)

Answer: D



View Text Solution

147. What can be formed on heating gypsum at $120^{\circ}C$?

- A. Plaster of Paris
- B. Calcium bicarbonate
- C. Calcium carbide
- D. Quick lime

Answer: A



View Text Solution

148. On passing CO_2 gas for a certain period of time through lime water, it gives color.

A. Blue

B. Brown

C. Milky

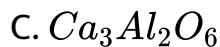
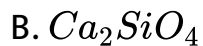
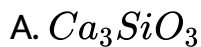
D. Colorless

Answer: C



[View Text Solution](#)

149. Which of the following is a component of Portland cement?



D. All

Answer: D



[View Text Solution](#)

150. Due to presence of Portland cement has ash color.

A. Fe

B. Mg

C. Ca

D. Na

Answer: A



[View Text Solution](#)

151. Setting time for di calcium and tricalcium silicate are.....days respectively.

- A. 28 and 1
- B. 28 and 365
- C. 365 and 28
- D. 28 and 360

Answer: B



[View Text Solution](#)

152. Which metal is present in chlorophyll which is present in leaves of plants?

A. Mg

B. Co

C. Cu

D. Fe

Answer: A

 [View Text Solution](#)

153. When CO_2 is passed through the solution of slaked lime it forms....

A. Partially soluble $CaCO_3$

B. Soluble $CaCO_3$

C. Insoluble CaO

D. Partially soluble CaO

Answer: A

 [View Text Solution](#)

154. Which of the following oxide react with quick lime and produce $Ca(PO_4)_2$?

A. P_4O_6

B. SiO_2

C. P_2O_4

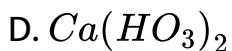
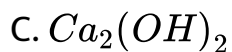
D. P_4O_{10}

Answer: D



[View Text Solution](#)

155. When CO_2 is pass through the solution of $Ca(OH)_2$, it produce.....



Answer: A



[View Text Solution](#)

156. An adult human body contain approximately ... Mg.

A. 25 gram

B. 25 miligram

C. 2.5 miligram

D. 2.5 gram

Answer: A



[View Text Solution](#)

157. Which of the following does not shows any effect on cement strength ?

A. Carbondioxide water

B. Simple water

C. Sodium

D. Acid

Answer: B



[View Text Solution](#)

158. Which of the following metal is present in 100 miligram / liter concentration in plasma ?

A. Co

B. Mg

C. Fe

D. Ca

Answer: D



View Text Solution

Section C Multiple Choice Questions Mcqs Asked In Competitive Exams

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

- A. sodium atoms
- B. sodium hydride
- C. sodium amide
- D. solvated electrons

Answer: B



[View Text Solution](#)

2. Sodium reacts more vigorously than lithium because, it.....

A. has higher atomic weight.

B. is a metal.

C. is more electropositive.

D. more electronegative.

Answer: C



[View Text Solution](#)

3. The hydration energy of Mg^{2+} is greater than that of.....



Answer: B



View Text Solution

4. The compound insoluble in acetic acid is.....

A. calcium oxide

B. calcium carbonate

C. calcium oxalate

D. calcium hydroxide

Answer: C



[View Text Solution](#)

5. Among KO_2 , AlO_2^- , BaO_2 and NO_2^+ , unpaired electron 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



[View Text Solution](#)

6. The metallic luster exhibited by sodium is explained by....

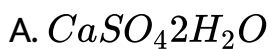
- A. diffusion of sodium ions
- B. oscillation of loose electrons
- C. excitation of free electrons
- D. existence of body centered cubic lattice

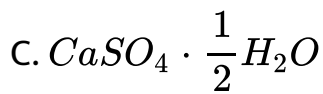
Answer: C



[View Text Solution](#)

7. Gypsum on heating to 390 K gives.....





Answer: C



[View Text Solution](#)

8. The by-product of solvay's ammonia process is.....

A. carbon dioxide

B. ammonia

C. calcium chloride

D. calcium carbonate

Answer: B



[View Text Solution](#)

9. The drying agent which absorbs carbon dioxide and reacts violently with water is.....

A. sodium carbonate

B. alcohol

C. conc. H_2SO_4

D. calcium oxide

Answer: D



[View Text Solution](#)

10. Metallic calcium is prepared by.....

A. displacement of calcium by iron from calcium sulphate solution.

B. electrolysis of molten calcium chloride.

C. reduction of lime by coke.

D. electrolysis of aqueous solution of calcium nitrate.

Answer: C



[View Text Solution](#)

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

A. ionization energy

B. solubility of their hydroxides

C. solubility of their sulphates

D. electropositivity

Answer: D



View Text Solution

12. The compounds of alkaline earth metals have the following magnetic nature.

A. Diamagnetic

B. Paramagnetic

C. Ferromagnetic

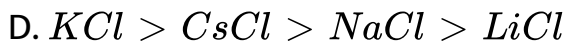
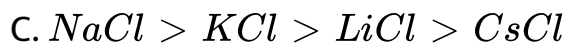
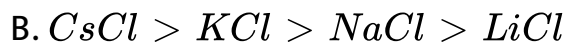
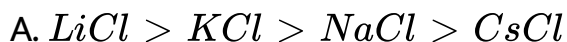
D. Anti ferromagnetic

Answer: A



[View Text Solution](#)

13. The stability of the following alkali metal chlorides follows the order



Answer: D



[View Text Solution](#)

14. Which of the following substances can be used for drying gases ?

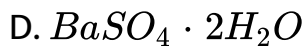
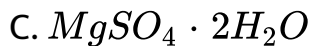
- A. Calcium carbonate
- B. Sodium carbonate
- C. Sodium bicarbonate
- D. Calcium oxide

Answer: D

 [View Text Solution](#)

15. Epsom salt is.....

- A. $MgSO_4 \cdot 7H_2O$



Answer: A



View Text Solution

16. Among the alkaline earth metals, the element forming predominantly covalent compound is.....

A. Barium

B. Strontium

C. Calcium

D. Beryllium

Answer: D



[View Text Solution](#)

17. The solubility in water of sulphates down the Be group is :

$Be > Mg > Ca > Sr > Ba$. This is due to

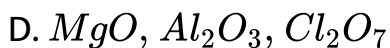
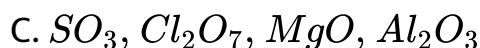
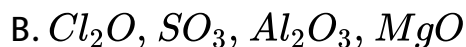
- A. Increase in melting point
- B. High ionization energy
- C. Higher coordination number
- D. All of these

Answer: C



[View Text Solution](#)

18. Which of the following is the correct order of gradually decreasing basic nature of the oxides?



Answer: D

 [View Text Solution](#)

19. Which one is used as a purifier in space craft?

A. Quick lime

B. Slaked lime

C. Potassium super oxide

D. Anhydrous $CaCl_2$

Answer: C



[View Text Solution](#)

20. The active constituent of bleaching powder is.....

A. $Ca(OCl)_2$

B. $Ca(OCl)Cl$

C. $Ca(ClO_2)_2$

D. $Ca(ClO_2)Cl$

Answer: B



View Text Solution

21. Bleaching powder loses its power on keeping for a long time because...

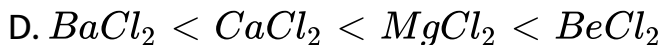
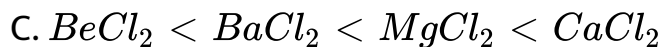
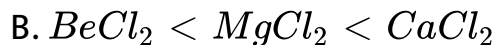
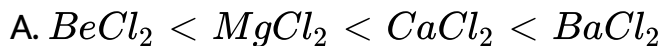
- A. it changes into calcium hypochlorite.
- B. it changes into calcium chloride and calcium hydroxide.
- C. it absorbs moisture.
- D. it changes into calcium chloride.

Answer: D



View Text Solution

22. The correct order of increasing ionic character is.....

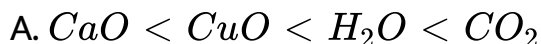


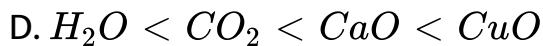
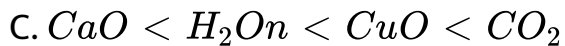
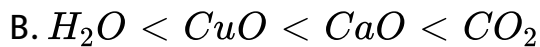
Answer: A



[View Text Solution](#)

23. Identify the correct order of acidic strengths of CO_2 , CuO , CaO , H_2O .



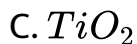
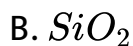


Answer: A



View Text Solution

24. The paramagnetic species is...



Answer: A



View Text Solution

25. Which of the following has smaller size?

A. H

B. He^+

C. ${}_1H^2$

D. Li^{2+}

Answer: D



View Text Solution

26. On dissolving moderate amount of sodium metal in liquid NH_3 at low temperature, which one of the following does not occur

- A. Blue coloured solution is obtained.
- B. Nations are formed in the solution.
- C. Liquid NH_3 becomes good conductor of clectricity
- D. Liquid ammonia remains diamagnetic.

Answer: D



[View Text Solution](#)

27. Mg and Li are similar in their properties due to.....

- A. same e/m and ratio.
- B. same electron affinity.
- C. same group.
- D. same ionic potential.

Answer: D



[View Text Solution](#)

28. Photoelectric effect is maximum in....

- A. Na
- B. Mg
- C. Cs
- D. Si

Answer: C



[View Text Solution](#)

29. A sodium salt of unknown anion when treated with $MgCl_2$ gives white precipitate only on boiling. The anion is



Answer: B



[View Text Solution](#)

30. Which of the following is not an ore of Mg?

A. Gypsum

B. Magnesite

C. Dolomite

D. Carnalite

Answer: A

 [View Text Solution](#)

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

A. $BaCO_3$

B. CaO

C. $Ba(OH)_2$

D. $BaHSO_4$

Answer: A



View Text Solution

32. Bleaching powder is a compound having the molecular formula

A. $CaOCl_3$

B. $CaOCl_2$

C. $CaClO$

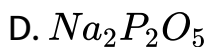
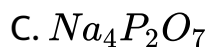
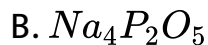
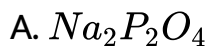
D. $CaClO_3$

Answer: B



[View Text Solution](#)

33. Sodium pyrophosphate is represented by which of the following formula

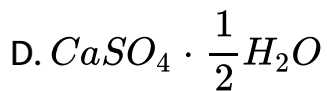
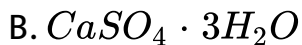
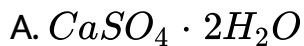


Answer: C



[View Text Solution](#)

34. Plaster of Paris is

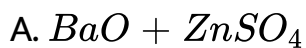


Answer: D



[View Text Solution](#)

35. Lithopone is

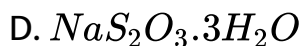
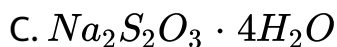
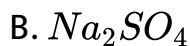
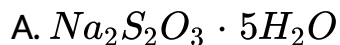




Answer: D

 [View Text Solution](#)

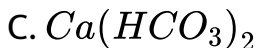
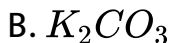
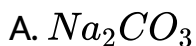
36. The correct formula of hypo is



Answer: A

 [View Text Solution](#)

37. A solid compound 'X' on heating gives CO_2 gas and a residue. The residue mixed with water forms 'Y'. On passing an excess of CO_2 through Y' in water, a clear solution 'Z' is obtained. On boiling 'Z', compound 'X' is reformed. The compound 'X' is....

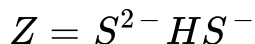
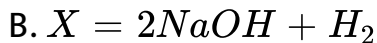
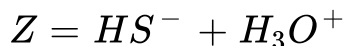
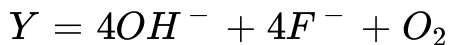
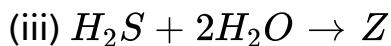
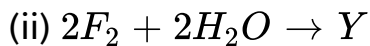
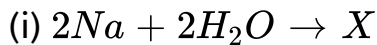


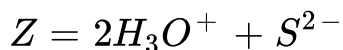
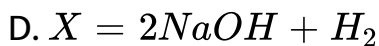
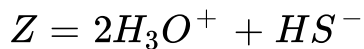
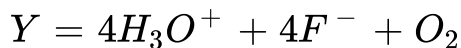
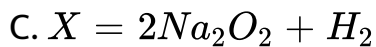
Answer: D

[View Text Solution](#)

Section C Multiple Choice Questions Mcqs Asked In Board Exam

1. Select the correct choice for given reactions:



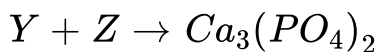
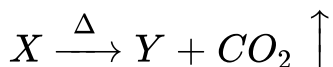


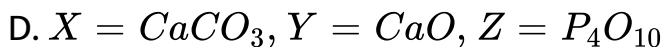
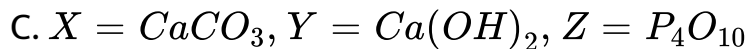
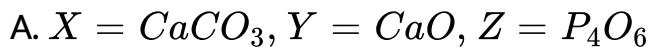
Answer: D



[View Text Solution](#)

2. Choose correct option by identifying X, Y and Z in the following reactions:



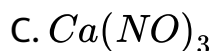
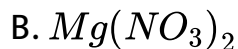
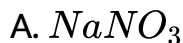


Answer: D



[View Text Solution](#)

3. Which of the following metal nitrate on heating does not give its metal Oxide?



D. $LiNO_3$

Answer: A



[View Text Solution](#)

4. The correct use of lime stone is....

- A. to mectrize cotton cloth.
- B. in purification of coal gas.
- C. as abrasive in tooth paste.
- D. in glass and leather industries.

Answer: C



[View Text Solution](#)

5. Beryllium can be used to store nitric acid. It is due to

- A. it is passive toward nitric acid.
- B. it has two electrons in valence shell.
- C. it has diagonal relationship with Mg.
- D. it is an alkaline earth metal.

Answer: A



[View Text Solution](#)

6. Which statement is false for biological importance of K^+ ions?

- A. They produce ATP by oxidation of glucose

- B. They transports the nerve signals with sodium
- C. They transport amino acids
- D. They activate the enzymes

Answer: C

 [View Text Solution](#)

7. Which statement is true about BeCl_2 , in its vapour state ?

- A. Each Be is linked with two Cl
- B. Each Be-Cl bond strength is equal
- C. There are three Be-Cl - Be type of linkage
- D. Each Be is linked with three Cl

Answer: D



[View Text Solution](#)

8. The correct proportion of Ca_3SiO_3 in portland cement is

..... .

A. 0.26

B. 0.11

C. 0.4

D. 0.51

Answer: D



[View Text Solution](#)

9. Statement-I Be and Mg elements do not give a coloured flame in flame test.

Statement-II Be is not a true element of Group 11 and Mg shows metallic character.

Select the correct options :

- A. Statement-I and II both are correct and Statement-II gives the correct understanding of Statement-I.
- B. Statement-I is false while Statement-II is true.
- C. Both Statements-I and II are false.
- D. Statement-I is true and Statement-II is true, but it does not give a correct understanding of Statement-I.

Answer: D



View Text Solution

10. Identify true statements from following statements. Select the right option assigning T for true and F for false statement.

(i) Ca - metal is liberated and CO_2 - gas is produced while quick lime reacts with carbon at high temperature.

(ii) Hydroxide of Be reacts with NaOH and HCl

(iii) Products $BeCl_2$ and CO_2 are obtained when Berilium oxide reacts with Carbon and Chlorine at high temp.

(iv) Li and Na form stable super oxides

A. FFFT

B. TFFF

C. FTFF

D. FFTF

Answer: C



View Text Solution

11. Match List-I, II and III. Find the correct answer from the code given below:

List - I	List - II	List - III
(1) Solvay process	(P) Production of Na-metal	(T) Setting
(2) Down's cell	(Q) Production of NaHCO_3	(U) Refining of petroleum
(3) Castner Kellner process	(R) Production of NaOH	(V) Reducing agent
	(S) Production of Cement	(W) Antacid

A. 1-S-T, 2-P-U, 3-Q-W

B. 1-Q-U, 2-S-T, 3-R-W

C. 1-Q-W, 2-P-V, 3-R-U

D. 1-Q-W, 2-S-T, 3-R-U

Answer: C

 [View Text Solution](#)

12. Which of the following ions of element given violet colour in flame test?

A. Ba

B. K

C. Rb

D. Na

Answer: B

 [View Text Solution](#)

13. Which of the following metal chloride gives hydrated salt ?

A. Cs

B. Na

C. K

D. Li

Answer: D



[View Text Solution](#)

14. Which mineral is known as baryte ?

A. Barium sulphide

B. Barium carbonate

C. Barium oxide

D. Barium sulphate

Answer: D



View Text Solution

15. Which metal is used in photoelectric cell ?

A. Cd

B. K

C. Rb

D. Na

Answer: B



View Text Solution

16. Which pump is important in biological reaction in human body?

A. Ca - Be pump

B. Na - K pump

C. Fe - Ca pump

D. Ca - Mg pump

Answer: B



[View Text Solution](#)

17. Which bicarbonate does not exist in solid state?

A. $Ca(HCO_3)_2$

B. $KHCO_3$

C. $LiHCO_3$

D. $NaHCO_3$

Answer: C



View Text Solution

18. Which alkali metal forms nitride by direct reaction with nitrogen of air ?

A. Cs, B

B. Na, Li

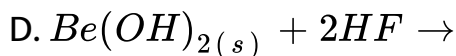
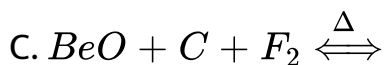
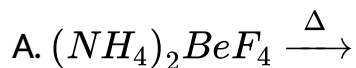
C. K, Cs

D. Li, Mg

Answer: D

 [View Text Solution](#)

19. Which among the following method is the best for the preparation of BeF_2 ?



Answer: A

 [View Text Solution](#)

20. Settling of cement is which types of reaction ?

- A. Exothermic reaction
- B. Endothermic reaction
- C. Ionic reaction
- D. Neutralization reaction

Answer: B



[View Text Solution](#)

21. Which substance is used as a Fire Extenguisher ?

- A. Sodium oxide
- B. Sodium carbonate

C. Sodium hydrogen carbonate

D. Sodium peroxide

Answer: C



View Text Solution

22. In Na and K metals, which salts are high proportion in the ash of shrubs ?



Answer: B



[View Text Solution](#)

23. In Bio-chemical reaction of human body, which pump is important ?

- A. Na-K
- B. Ca-Mg
- C. Ca-Fe
- D. Fe-Cu

Answer: A



[View Text Solution](#)

24. For best quality cement the ratio between Silica and Alumina and the ratio of total other oxide is near as -

A. 5.2 to 6 and 3

B. 2.4 to 7 and 4

C. 4.2 to 7 and 4

D. 2.5 to 4 and 2

Answer: D



[View Text Solution](#)

25. Select correct option for true statement using symbol T and false statement using symbol F for following statements.

(1) Epsom salt is chief minerals of Magnesium.

(2) Gypsum is a name of minerals of Magnesium.

(3) Apatite are phosphate compound.

(4) Witherite is a sulphate salts of Barium.

A. F T T F

B. T F T F

C. T T F F

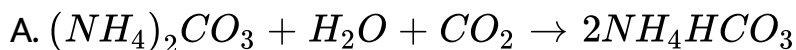
D. T F F T

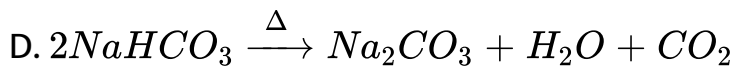
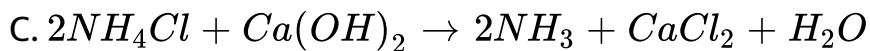
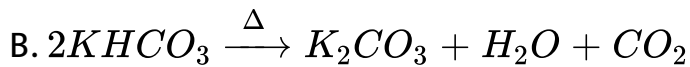
Answer: B



[View Text Solution](#)

26. Which reaction is not occurring in Solvay process ?





Answer: B

 [View Text Solution](#)

27. Match Section - I with Section - II and select proper option

:

Section - I	Section - II (uses)
(1) Quick lime	(P) For milk of magnesia
(2) Slaked lime	(Q) Antacid
(3) Limestone	(R) Purification of sugar
(4) Baking soda	(S) To make hard water soft
	(T) In tooth paste

A. 1R, 2S, 3P, 4T

B. 1R, 2S, 3T, 4P

C. 1R, 2S, 3T, 4Q

D. 1R, 2T, 3S, 4P

Answer: C



[View Text Solution](#)

28. In which of the following NaOH is not used ?

A. Refining of petroleum

B. Reagent in laboratory

C. Hardwater into soft

D. Manufacturing of soap

Answer: C



View Text Solution

29. Which metal is used in photo electric cell?

A. Na

B. K

C. Cd

D. Rb

Answer: B



View Text Solution

30. Which of the following pair of element and ore is incorrect?

A. K - Sylvine

B. Ba - Baryte

C. Mg - Cranite

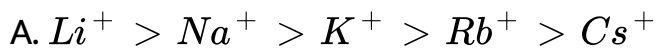
D. Be - Oxide bromalite

Answer: C



[View Text Solution](#)

31. Which is the correct order of hydration enthalpy of alkali metals?



Answer: A



[View Text Solution](#)

32. Which colour is shown by Calcium salts in flame test?

A. Light Green

B. Crimson red

C. Brick red

D. Violet

Answer: C



View Text Solution

33. Which metal is used in the window of X-ray tubes ?

A. Zn

B. Mg

C. Be

D. Ca

Answer: C



View Text Solution

34. Which of the following element do not form hydrated metal chloride ?

A. Mg

B. Ca

C. Li

D. Na

Answer: D



[View Text Solution](#)

35. Which among the following is used as cathode in Castner Kellner cell ?

A. Hg

B. Graphite

C. Pt

D. Ni

Answer: A



[View Text Solution](#)

36. Gypsum on heating at higher than 473 K gives anhydrous

$CaSO_4$, which is known as ...

A. Keen cement

B. Cement clinker

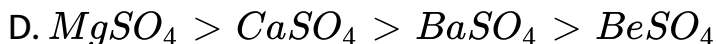
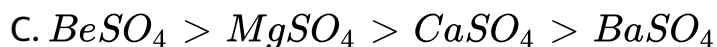
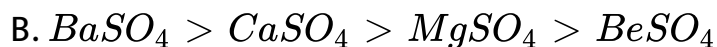
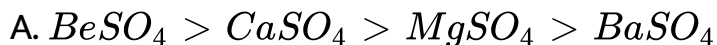
C. Portland cement

D. Dead burnt plaster

Answer: D

 [View Text Solution](#)

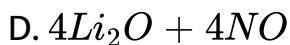
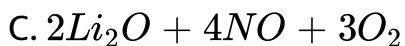
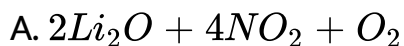
37. The correct descending order of solubility of sulphate salts of alkaline earth metals in water is...



Answer: C

 [View Text Solution](#)

38. Complete the reaction : $4LiNO_3 \xrightarrow{\Delta} \dots\dots\dots$.



Answer: A



[View Text Solution](#)

39. Chloride of which metal possess - Cl bridge in vapour state?

A. Mg

B. Sr

C. Rb

D. Al

Answer: D



View Text Solution

40. What is added to increase the setting velocity of plaster of paris?

A. Alum

B. Limestone

C. Borax

D. Common salt

Answer: C



[View Text Solution](#)

41. Which is more basic Na_2CO_3 or $NaHCO_3$?

A. $NaHCO_3$

B. Both Na_2CO_3 and $NaHCO_3$

C. Neither Na_2CO_3 nor $NaHCO_3$

D. Na_2CO_3

Answer: D



[View Text Solution](#)

42. Which metal is used in the preparation of Grignard reagent?

A. Na

B. Mg

C. Li

D. Ca

Answer: B



[View Text Solution](#)

43. Which metals are present in Crinite Ore ?

A. K, Ba

B. Be, Al

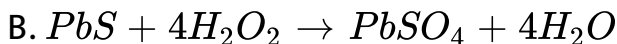
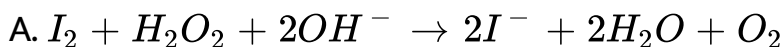
C. K, Mg

D. Mg, Ca

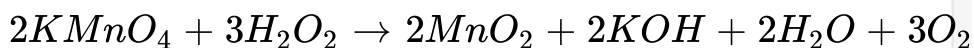
Answer: C

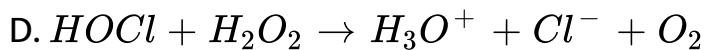
 [View Text Solution](#)

44. In which of the following reactions H_2O_2 does not act as an reducing agent ?



C.





Answer: B



[View Text Solution](#)

45. Which colour is shown by Rubidium salts on flame test?

A. Red violet

B. Violet

C. Blue violet

D. Dark red

Answer: A



[View Text Solution](#)

46. Which instrument is used to determine amount of K?

- A. Potentiometer
- B. pH meter
- C. Spectrometer
- D. Flame photometer

Answer: D



[View Text Solution](#)

47. Match compounds of column-I with their uses given in column-II, and select the correct option.

Column - I	Column - II
(i) CaCO_3	(p) In the preparation of fat and oil
(ii) NaOH	(q) In the purification of sugar
(iii) Ca(OH)_2	(r) as a fire extinguisher
(iv) NaHCO_3	(s) as a filler in cosmetics

A. (i) \rightarrow s, (ii) \rightarrow p, (iii) \rightarrow q, (iv) \rightarrow r

B. (i) \rightarrow q, (ii) \rightarrow s, (iii) \rightarrow p, (iv) \rightarrow r

C. (i) \rightarrow r, (ii) \rightarrow s, (iii) \rightarrow p, (iv) \rightarrow q

D. (i) \rightarrow r, (ii) \rightarrow s, (iii) \rightarrow q, (iv) \rightarrow p

Answer: A



View Text Solution

Section C Multiple Choice Questions Mcqs Asked In Jee Neet Aieee

1. Calcium oxide is obtained by the.....

- A. Roasting of limestone.
- B. Electrolysis of a solution of calcium chloride in H_2O .
- C. Reduction of calcium chloride with carbon.
- D. Electrolysis of molten anhydrous calcium chloride.

Answer: A



[View Text Solution](#)

2. KO_2 (potassium super oxide) is used in oxygen cylinders in space and submarines because it.....

- A. absorbs CO_2 and increases O_2 content
- B. eliminates moisture
- C. absorbs CO_2
- D. produces ozone

Answer: A



View Text Solution

3. A metal M readily forms water soluble sulphate MSO_4 , water insoluble hydroxide $M(OH)_2$ and oxide MO which becomes inert on the hydrogen is soluble in NaOH. The metal M is...

A. Be

B. Mg

C. Ca

D. Sr

Answer: A



View Text Solution

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

A. dolomite

B. a marble statue

C. calcined gypsum

D. sea shells

Answer: C



[View Text Solution](#)

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

- A. converting sand into silica acid.
- B. keeping it cool.
- C. developing interlocking needle like crystals of hydrated silicates.
- D. hydrating sand and gravel mixed with cement.

Answer: C



[View Text Solution](#)

6. The solubilities of carbonates decrease down the magnesium group due to decrease in....

A. lattice energies of solids.

B. hydration energies of cations.

C. inter-ionic attractions.

D. entropy of solution formation.

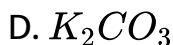
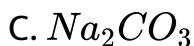
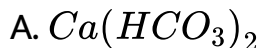
Answer: B



[View Text Solution](#)

7. A solid compound 'X' on heating gives CO_2 gas and a residue. The residue when mixed with water forms 'Y'. On

passing an excess of CO_2 through 'Y' in water a clear solution 'Z' is obtained. On boiling 'Z' compound 'X' is reformed. The compound 'X' is.....



Answer: B



[View Text Solution](#)

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

- A. One mole of ammonia
- B. One mole nitric acid
- C. Two moles of ammonia
- D. Two moles of nitric acid

Answer: C



View Text Solution

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

- A. exhibiting maximum covalency in compound.
- B. exhibiting amphoteric nature in their compounds.
- C. forming covalent halides.

D. forming polymeric hydrides.

Answer: A



[View Text Solution](#)

10. The commercial production of sodium carbonate is done by...

A. Lead-chamber process

B. Haber's process

C. Solvay's process

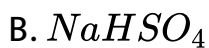
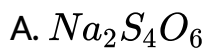
D. Castner's process

Answer: C



[View Text Solution](#)

11. Aqueous solution of $Na_2S_2O_3$ on reaction with Cl_2 with Cl_2 gives



Answer: B



[View Text Solution](#)

12. Calcium is obtained by...

- A. Rosting of lime stone
- B. Reduction of $CaCl_2$ with carbon
- C. Electrolysis of a solution of $CaCl_2$ in water
- D. Electrolysis of molten $CaCl_2$

Answer: D



[View Text Solution](#)

13. Which one of the following is the correct statement ?

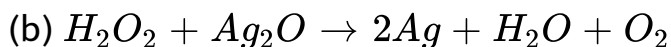
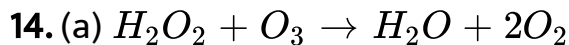
- A. Beryllium exhibits coordination number of six.
- B. Both Beryllium and Aluminium chloride in solid state form complex having bridge structure.
- C. $B_2H_6 \cdot 2NH_3$ is known as 'inorganic benzene'.

D. Boric acid is a protic acid.

Answer: B



[View Text Solution](#)



Role of hydrogen peroxide in the above reactions is respectively :

A. oxidizing in (a) and reducing in (b)

B. reducing in (a) and oxidizing in (b)

C. reducing in (a) and (b)

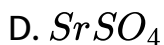
D. oxidizing in (a) and (b)

Answer: C



[View Text Solution](#)

15. Which of the following alkaline earth metal sulphate has higher hydration enthalpy than lattice enthalpy



Answer: B



[View Text Solution](#)

16. Both lithium and magnesium display several similar properties due to the diagonal relationship, however the one which is incorrect is

A. both form basic carbonates.

B. both form soluble bicarbonates.

C. both form nitrides.

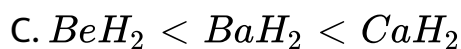
D. nitrates of both Li and Mg yield NO_2 and O_2 on heating.

Answer: A



[View Text Solution](#)

17. Among CaH_2 , BeH_2 , BaH_2 the order of ionic character is :



Answer: B

 [View Text Solution](#)

18. Which of the following oxides is most acidic in nature?



B. MgO

C. BaO

D. BeO

Answer: D



[View Text Solution](#)

19. Which of the following is an amphoteric hydroxide ?

A. $Be(OH)_2$

B. $Sr(OH)_2$

C. $Ca(OH)_2$

D. $Mg(OH)_2$

Answer: A



[View Text Solution](#)

20. Sodium metal on dissolution in liquid ammonia gives a deep blue solution due to the formation of

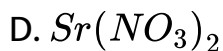
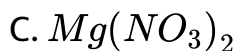
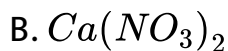
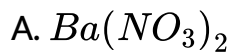
- A. sodamide
- B. ammoniated electrons
- C. sodium ion-ammonia complex
- D. sodium-ammonia complex

Answer: B



[View Text Solution](#)

21. The alkaline earth metal nitrate that does not crystallise with water molecules, is....



Answer: A

 [View Text Solution](#)

22. Magnesium powder burns in air to give:

A. MgO only

B. MgO and $Mg(NO_3)_2$

C. MgO and Mg_3N_2

D. $Mg(NO_3)_2$ and Mg_3N_2

Answer: C



[View Text Solution](#)

23. When gypsum is heated to 393K, it forms:

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

B. Dead burnt plaster

C. $CaSO_4 \cdot 5H_2O$

D. Anhydrous $CaSO_4$

Answer: A



View Text Solution

Section D Ncert Exemplar Solution Multiple Questions Mcqs

1. The alkali metals are low melting. Which of the following alkali metals is expected to melt if the room temperature rises to $30^{\circ}C$?

A. Na

B. K

C. Rb

D. Cs

Answer: D



View Text Solution

2. Alkali metals react with water vigorously to form hydroxides and dihydrogen. Which of the following alkali metals reacts with water least vigorously?

A. Li

B. Na

C. K

D. Cs

Answer: A



View Text Solution

3. The reducing power of a metal depends on various factors. Suggest the factor which makes Li, the strongest reducing agent in aqueous solution.

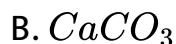
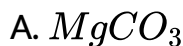
- A. Sublimation enthalpy
- B. Ionisation enthalpy
- C. Hydration enthalpy
- D. Electron-gain enthalpy

Answer: C



View Text Solution

4. Metal carbonates decompose on heating to give metal oxide and carbon dioxide. Which of the metal carbonates is most stable thermally?

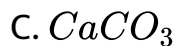
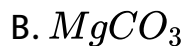


Answer: D



[View Text Solution](#)

5. Which of the carbonates given below is unstable in air and is kept in CO_2 atmosphere to avoid decomposition ?

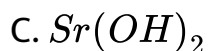
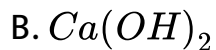
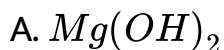


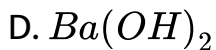
Answer: A



View Text Solution

6. Metals form basic hydroxides. Which of the following metal hydroxides is the least basic?



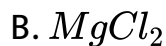


Answer: A



View Text Solution

7. Some of the Group-2 metal halides are covalent and soluble in organic solvents. Among the following metal halides, the one which is soluble in ethanol is...

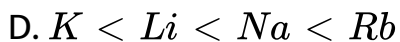
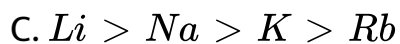
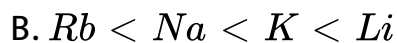
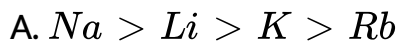


Answer: B



[View Text Solution](#)

8. The order of decreasing ionisation enthalpy in alkali metals is



Answer: C



[View Text Solution](#)

9. The solubility of metal halides depends on their nature, lattice enthalpy and hydration enthalpy of the individual ions. Amongst fluorides of alkali metals, the lowest solubility of LiF in water is due to

- A. ionic nature of lithium fluoride.
- B. high lattice enthalpy.
- C. high hydration enthalpy for lithium ion.
- D. low ionisation enthalpy of lithium atom.

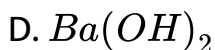
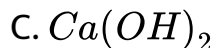
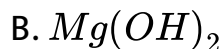
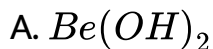
Answer: B



[View Text Solution](#)

10. Amphoteric hydroxides react with both alkalies and acids.

Which of the following Group-2 metal hydroxides is soluble in sodium hydroxide ?



Answer: A



[View Text Solution](#)

11. In the synthesis of sodium carbonate, the recovery of ammonia is done by treating NH_4Cl with $Ca(OH)_2$. The by-

product obtained in this process is



Answer: A



[View Text Solution](#)

12. When sodium is dissolved in liquid ammonia, a solution of deep blue colour is obtained. The colour of the solution is due to...

A. ammoniated electron.

B. sodium ion.

C. sodium amide.

D. ammoniated sodium ion.

Answer: A



View Text Solution

13. By adding gypsum to cement...

A. setting time of cement becomes less.

B. setting time of cement increases.

C. colour of cement becomes light.

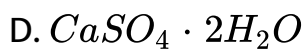
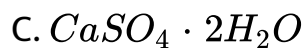
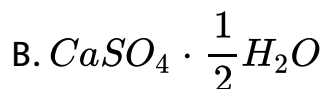
D. shining surface is obtained.

Answer: B



[View Text Solution](#)

14. Dead burnt plaster is



Answer: A



[View Text Solution](#)

15. Suspension of slaked lime in water is known as

A. lime water

B. quick lime

C. milk of lime

D. aqueous solution of slaked lime

Answer: C



[View Text Solution](#)

16. Which of the following elements does not form hydride by direct heating with dihydrogen ?

A. Be

B. Mg

C. Sr

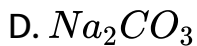
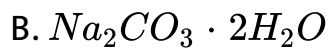
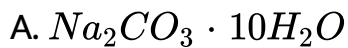
D. Ba

Answer: A



View Text Solution

17. The formula of soda ash is



Answer: D



View Text Solution

18. A substance which gives brick red flame and breaks down on heating to give oxygen and a brown gas is....

A. magnesium nitrate

B. calcium nitrate

C. barium nitrate

D. strontium nitrate

Answer: B



View Text Solution

19. Which of the following statements is true about $Ca(OH)_2$?

- A. It is used in the preparation of bleaching powder.
- B. It is a light blue solid.
- C. It does not possess disinfectant property.
- D. It is used in the manufacture of cement.

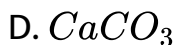
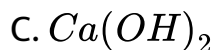
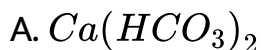
Answer: A



[View Text Solution](#)

20. A chemical A is used for the preparation of washing soda to recover ammonia. When CO_2 is bubbled through an aqueous solution of A, the solution turns milky. It is used in

white washing due to disinfectant nature. What is the chemical formula of A?



Answer: C



View Text Solution

21. Dehydration of hydrates of halides of calcium, barium and strontium i.e., $CaCl_2 \cdot 6H_2O$, $BaCl_2 \cdot 2H_2O$, $SrCl_2 \cdot 2H_2O$ can be achieved by heating. These become wet on keeping in

air. Which of the following statements is correct about these halides?

- A. Act as dehydrating agent
- B. Can absorb moisture from air
- C. Tendency to form hydrate decreases from calcium to barium
- D. All of the above

Answer: D

 [View Text Solution](#)

**Section D Ncert Exemplar Solution Multiple Questions Mcqs
More Than One Correct Answer**

1. Metallic elements are described by their standard electrode potential, fusion enthalpy, atomic size, etc. The alkali metals are characterised by which of the following properties?

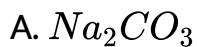
- A. High boiling point
- B. High negative standard electrode potential
- C. High density
- D. Large atomic size

Answer: B::D



[View Text Solution](#)

2. Several sodium compounds find use in industries. Which of the following compounds are used for textile industry ?

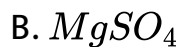


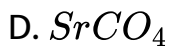
Answer: A::C



View Text Solution

3. Which of the following compounds are readily soluble in water ?





Answer: A::B



View Text Solution

4. When Zeolite, which is hydrated sodium aluminium silicate is treated with hard water, the sodium ions are exchanged with which of the following ion(s) ?

A. H^+ ions

B. Mg^{2+} ions

C. Ca^{2+} ions

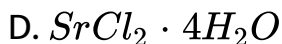
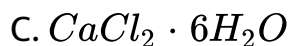
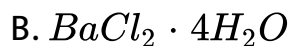
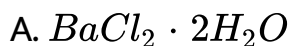
D. SO_4^{2-} ions

Answer: B::C



[View Text Solution](#)

5. Identify the correct formula of halides of alkaline earth metals from the following:



Answer: A::C



[View Text Solution](#)

6. Choose the correct statements from the following:

- A. Beryllium is not readily attacked by acids because of the presence of an oxide film on the surface of the metal.
- B. Beryllium sulphate is readily soluble in water as the greater hydration enthalpy of Be^{2+} overcomes the lattice enthalpy factor.
- C. Beryllium exhibits coordination number more than four.
- D. Beryllium oxide is purely acidic in nature.

Answer: A:B



View Text Solution

7. Which of the following are the correct reasons for anomalous behavior of lithium ?

- A. Exceptionally small size of its atom
- B. Its high polarising power
- C. It has high degree of hydration
- D. Exceptionally low ionisation enthalpy

Answer: A::B



[View Text Solution](#)

Section D Ncert Exemplar Solution Short Answer Type

1. How do you account for the strong reducing power of lithium in aqueous solution ?



[View Text Solution](#)

2. When heated in air, the alkali metals form various oxides.

Mention the oxides formed by Li, Na and K.

 [View Text Solution](#)

3. Complete the following reactions:



 [View Text Solution](#)

4. Lithium resembles magnesium in some of its properties.

Mention two such properties and give reasons for this resemblance.

 [View Text Solution](#)

5. Name an element from Group-2 which forms an amphoteric oxide and a water soluble sulphate.

 [View Text Solution](#)

6. Discuss the trend of the following:

Thermal stability of carbonates of Group-2 elements.

 [View Text Solution](#)

7. Discuss the trend of the following:

The solubility and the nature of oxides of Group-2 elements.

 [View Text Solution](#)

8. Why are $BeSO_4$ and $MgSO_4$ readily soluble in water while $CaSO_4$, $SrSO_4$ and $BaSO_4$ are insoluble?

 [View Text Solution](#)

9. All compounds of alkali metals are easily soluble in water but lithium compounds are more soluble in organic solvents. Explain.

 [View Text Solution](#)

10. In the Solvay process, can we obtain sodium carbonate directly by treating the solution containing $(NH_4)_2CO_3$ with sodium chloride? Explain.

 [View Text Solution](#)

11. Write Lewis structure of O_2^- ion and find out oxidation state of each oxygen atom? What is the average oxidation state of oxygen in this ion?

 [View Text Solution](#)

12. Why do beryllium and magnesium not impart colour to the flame in the flame test?

 [View Text Solution](#)

13. What is the structure of $BeCl_2$ molecule in gaseous and solid state ?

 [View Text Solution](#)

Section D Ncert Exemplar Solution Match The Following

1. Match the elements given in Column-I with the properties mentioned in Column-II :

Column-I	Column-II
(A) Li	(1) Insoluble sulphate
(B) Na	(2) Strongest monoacidic base
(C) Ca	(3) Most negative E^\ominus cell value among alkali metals
(D) Ba	(4) Insoluble oxalate
	(5) $6s^2$ outer electronic configuration



[View Text Solution](#)

2. Match the compounds given in Column-I with their uses mentioned in Column-II:

Column-I	Column-II
(A) CaCO_3	(1) Dentistry, ornamental work
(B) Ca(OH)_2	(2) Manufacture of sodium carbonate from caustic soda
(C) CaO	(3) Manufacture of high quality paper
(D) CaSO_4	(4) Used in white washing

 [View Text Solution](#)

3. Match the elements given in Column-I with the colour they impart to the flame given in Column-II.

Column-I	Column-II
(A) Cs	(1) Apple green
(B) Na	(2) Violet
(C) K	(3) Brick red
(D) Ca	(4) Yellow
(E) Sr	(5) Crimson red
(F) Ba	(6) Blue

 [View Text Solution](#)

Section D Ncert Exemplar Solution Assertion And Reason Type

1. Assertion (A) : The carbonate of lithium decomposes easily on heating to form lithium oxide and CO_2

Reason (R) : Lithium being very small in size polarises large carbonate ion leading to the formation of more stable Li_2O and CO_2 .

- A. Both A and R are correct and R is the correct explanation of A.
- B. Both A and R are correct but R is not the correct explanation of A.
- C. Both A and R are not correct.
- D. A is not correct but R is correct

Answer: A

 [View Text Solution](#)

2. Assertion (A) : Beryllium carbonate is kept in the atmosphere of carbon dioxide.

Reason (R) : Beryllium carbonate is unstable and decomposes to give beryllium oxide and carbon dioxide.

- A. Both A and R are correct and R is the correct explanation of A.
- B. Both A and R are correct but R is not the correct explanation of A.
- C. Both A and R are not correct.
- D. A is not correct but R is correct

Answer: A

 [View Text Solution](#)

Section D Ncert Exemplar Solution Long Answer Type

1. The s-block elements are characterised by their larger atomic sizes, lower ionisation enthalpies, invariable +1

oxidation state and solubilities of their oxosalts. In the light of these features describe the nature of their oxides, halides and oxosalts.

 [View Text Solution](#)

2. Present a comparative account of the alkali and alkaline earth metals with respect to the following characteristics :

(a) Tendency to form ionic/covalent compounds.

(b) Nature of oxides and their solubility in water.

(c) Formation of oxosalts

(d) Solubility of oxosalts

(e) Thermal stability of oxosalts

 [View Text Solution](#)

3. When a metal of group-1 was dissolved in liquid ammonia, the following observations were obtained:

(a) Blue solution was obtained initially.

(b) On concentrating the solution, blue colour changed to bronze colour.

How do you account for the blue colour of the solution ? Give the name of the product formed on keeping the solution for some time.



[View Text Solution](#)

4. The stability of peroxide and superoxide of alkali metals increase as we go down the group. Explain giving reason.



[View Text Solution](#)

5. When water is added to compound (A) of calcium, solution of compound (B) is formed. When carbon dioxide is passed into the solution, it turns milky due to the formation of compound (C). If excess of carbon dioxide is passed into the solution milkiness disappears due to the formation of compound (D). Identify the compounds A, B, C and D. Explain why the milkiness disappears in the last step.



[View Text Solution](#)

6. Lithium hydride can be used to prepare other useful hydrides. Beryllium hydride is one of them. Suggest a route for the preparation of beryllium hydride starting from lithium hydride. Write chemical equations involved in the process.



[View Text Solution](#)

7. An element of group-2 forms covalent oxide which is amphoteric in nature and dissolves in water to give an amphoteric hydroxide. Identify the element and write chemical reactions of the hydroxide of the element with an alkali and an acid.



[View Text Solution](#)

8. Ions of an element of group 1 participate in the transmission of nerve signals and transport of sugars and amino acids into cells. This element imparts yellow colour to the flame in flame test and forms an oxide and a peroxide with oxygen. Identify the element and write chemical reaction

to show the formation of its peroxide. Why does the element impart colour to the flame ?



[View Text Solution](#)