



## CHEMISTRY

# BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

## ALKALI AND ALKALINE EARTH METALS

Textual Evaluation Solved Choose The Correct  
Answer

1. For alkali metals, which one of the following trends is incorrect?

A. Hydration energy:  $Li > Na > K > Rb$

B. Ionization energy:  $Li > Na > K > Rb$

C. Density:  $Li < Na < K < Rb$

D. Atomic size:  $Li < Na < K < Rb$

**Answer: c**



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2. Which of the following statements are incorrect?

- A.  $Li^+$  has minimum degree of hydration among alkali metal cations.
- B. The oxidation state of K in  $KO_2$  is +1
- C. Sodium is used to make  $Na/Pb$  alloy.
- D.  $MgSO_4$  is readily soluble in water.

**Answer: a**



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3. Which of the following compounds will not evolve  $H_2$  gas on reaction with alkali metals ?

A. ethanoic acid

B. ethanol

C. phenol

D. none of these

**Answer: d**



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4. Which of the following has the highest

tendency to give the reaction  $M_{(g)}^+ \xrightarrow[\text{Medium}]{\text{Aqueous}} M_{(aq)}^+$

A. Na

B. Li

C. Rb

D. K

**Answer: b**



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**5. sodium is stored in**

A. alcohol

B. water

C. kerosene

D. none of these

**Answer: c**



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6.  $RbO_2$  is \_\_\_\_\_

A. superoxide and paramagnetic

B. peroxide and diamagnetic

C. superoxide and diamagnetic

D. peroxide and paramagnetic

**Answer: a**



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**7. Find the wrong statement**

A. sodium metal is used in organic qualitative analysis

B. sodium carbonate is soluble in water and it is used in inorganic qualitative analysis

C. potassium carbonate can be prepared by Solvay process

D. potassium bicarbonate is acidic salt

**Answer: c**



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**8.** Lithium shows diagonal relationship with

A. sodium

B. magnesium

C. calcium

D. aluminium

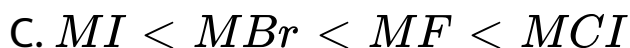
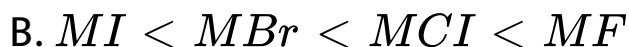
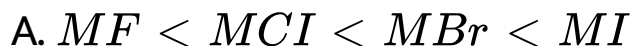


**Answer: b**



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9. In case of alkali metal halides, the ionic character increases in the order \_\_\_\_\_



D. none of these

**Answer: b**



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10. In which process, fused sodium hydroxide is electrolysed for extraction of sodium?

A. Castner's process

B. cyanide process

C. Down process

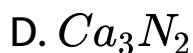
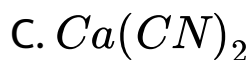
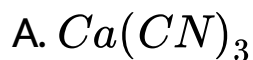
D. All of these

**Answer: a**



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11. The product obtained as a result of a reaction of nitrogen with  $CaC_2$  is \_\_\_\_\_(NEET)

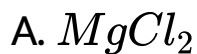


**Answer: c**



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12. Which of the following has highest hydration energy



**Answer: a**



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**13.** Match the flame colours of the alkali and alkaline earth metal salts in the bunsen burner

- |                        |                    |
|------------------------|--------------------|
| ( <i>p</i> ) Sodium    | (1) Brick red      |
| ( <i>q</i> ) Calcium   | (2) Yellow         |
| ( <i>r</i> ) Barium    | (3) Lilac (violet) |
| ( <i>s</i> ) Strontium | (4) Apple green    |
| ( <i>t</i> ) Cesium    | (5) Crimson red    |
| ( <i>u</i> ) Potassium | (6) Blue           |



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**14.** Assertion : Generally alkali and alkaline earth metals form superoxides

Reason : There is a single bond between O and O in superoxides.

A. both assertion and reason are true and reason is the correct explanation of assertion

B. both assertion and reason are true but reason is not the correct explanation of assertion

C. assertion is true but reason is false

D. both assertion and reason are false

**Answer: d**



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15. Assertion :  $BeSO_4$ , is soluble in water while  $BaSO_4$  is not

Reason: Hydration energy decreases down the group from Be to Ba and lattice energy remains almost constant

A. both assertion and reason are true and reason is the correct explanation of assertion

B. both assertion and reason are true but reason is not the correct explanation of assertion

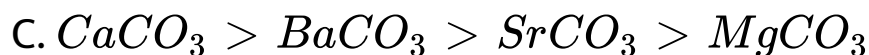
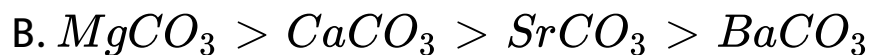
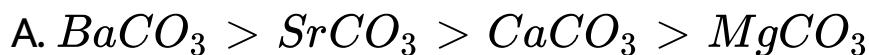
C. assertion is true but reason is false

D. both assertion and reason are false

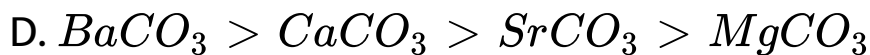
**Answer: a**

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**16.** Which is the correct sequence of solubility of carbonates of alkaline earth metals ?







Answer: b



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

- A. It is rendered passive by nitric acid
- B. It forms  $Be_2C$
- C. Its salts are rarely hydrolyzed

D. Its hydride is electron deficient and polymeric

**Answer: c**

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**18.** The suspension of slaked lime in water is known as

A. lime water

B. quick lime

C. milk of lime

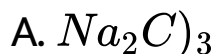
D. aqueous solution of slaked lime

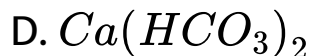
**Answer: c**



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**19.** A colourless solid substance (A) on heating evolved  $CO_2$  and also gave a white residue, soluble in water. Residue also gave  $CO_2$  when treated with dilute HCl.



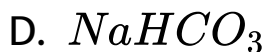
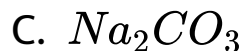
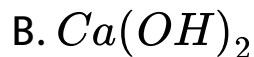


**Answer: b**



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20. The compound (X) on heating gives a colourless gas and a residue that is dissolved in water to obtain (B). Excess of  $CO_2$  is bubbled through aqueous solution of B, C is formed. Solid (C) on heating gives back X. (B) is



**Answer: b**



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**21.** Which of the following statement is false?

A.  $Ca^{2+}$  ions are not important in maintaining  
the regular beating of the heart

- B.  $Mg^{2+}$  ions are important in the green parts of the plants
- C.  $Mg^{2+}$  ions form a complex with ATP
- D.  $Ca^{2+}$  ions are important in blood clotting

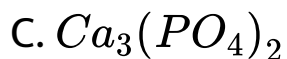
**Answer: a**



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**22.** The name 'Blue John' is given to which of the following compounds ?

A.  $CaH_2$

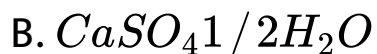


**Answer: b**



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**23.** formula of Gypsum is



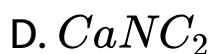
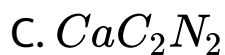
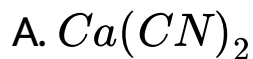


**Answer: a**



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**24.** When  $CaC_2$  is heated in atmospheric nitrogen in an electric furnace the compound formed is



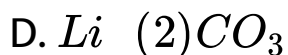
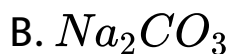
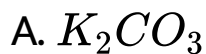


**Answer: b**



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**25.** Among the following the least thermally stable is



**Answer: d**



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26. For alkali metals, which one of the following trends is incorrect?

A. Hydration energy:  $Li > Na > K > Rb$

B. Ionization energy:  $Li > Na > K > Rb$

C. Density:  $Li < Na < K < Rb$

D. Atomic size:  $Li < Na < K < Rb$

Answer: c



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27. Which of the following statements are incorrect?

- A.  $Li^+$  has minimum degree of hydration among alkali metal cations.
- B. The oxidation state of K in  $KO_2$  is +1.
- C. Sodium is used to make  $Na/Pb$  alloy.
- D.  $MgSO_4$  is readily soluble in water.

**Answer: a**



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28. Which of the following compounds will not evolve  $H_2$  gas on reaction with alkali metals ?

A. ethanoic acid

B. ethanol

C. phenol

D. none of these

**Answer: d**



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29. Which of the following has the highest

tendency to give the reaction  $M_{(g)}^+ \xrightarrow[\text{Medium}]{\text{Aqueous}} M_{(aq)}^+$

A. Na

B. Li

C. Rb

D. K

**Answer: b**



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30. sodium is stored in

A. alcohol

B. water

C. kerosene

D. none of these

Answer: c



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31.  $RbO_2$  is \_\_\_\_\_

A. superoxide and paramagnetic

B. peroxide and diamagnetic

C. superoxide and diamagnetic

D. peroxide and paramagnetic

**Answer: a**



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**32. Find the wrong statement**

A. sodium metal is used in organic qualitative analysis

B. sodium carbonate is soluble in water and it is used in inorganic qualitative analysis

C. potassium carbonate can be prepared by Solvay process

D. potassium bicarbonate is acidic salt

**Answer: c**



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**33. Lithium shows diagonal relationship with**

A. sodium



B. magnesium

C. calcium

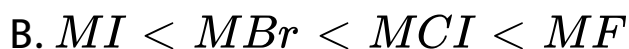
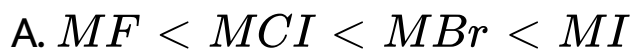
D. aluminium

**Answer: b**



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**34.** In case of alkali metal halides, the ionic character increases in the order \_\_\_\_\_



C.  $MI < MBr < MF < MCl$

D. none of these

**Answer: b**



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**35.** In which process, fused sodium hydroxide is electrolysed for extraction of sodium?

A. Castner's process

B. cyanide process

C. Down process

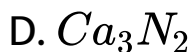
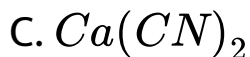
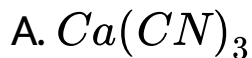
D. All of these

**Answer: a**



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**36.** The product obtained as a result of a reaction of nitrogen with  $CaC_2$  is \_\_\_\_\_ (NEET)

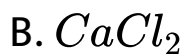
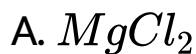


**Answer: c**



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**37.** Which of the following has highest hydration energy



**Answer: a**



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**38.** Match the flame colours of the alkali and alkaline earth metal salts in the bunsen burner

- |                        |                    |
|------------------------|--------------------|
| ( <i>p</i> ) Sodium    | (1) Brick red      |
| ( <i>q</i> ) Calcium   | (2) Yellow         |
| ( <i>r</i> ) Barium    | (3) Lilac (violet) |
| ( <i>s</i> ) Strontium | (4) Apple green    |
| ( <i>t</i> ) Cesium    | (5) Crimson red    |
| ( <i>u</i> ) Potassium | (6) Blue           |



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**39. Assertion :** Generally alkali and alkaline earth metals form superoxides

**Reason :** There is a single bond between O and O in superoxides.

- A. both assertion and reason are true and reason is the correct explanation of assertion
- B. both assertion and reason are true but reason is not the correct explanation of assertion
- C. assertion is true but reason is false

D. both assertion and reason are false

**Answer: d**



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**40.** Assertion :  $BeSO_4$ , is soluble in water while  $BaSO_4$  is not

Reason: Hydration energy decreases down the group from Be to Ba and lattice energy remains almost constant

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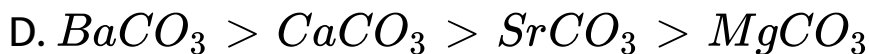
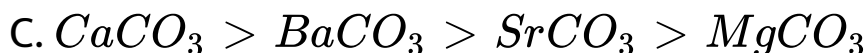
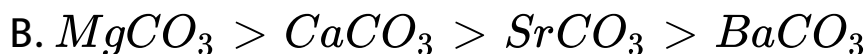
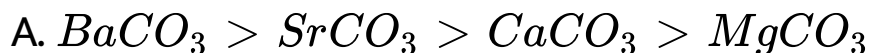
**Answer: a**



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41. Which is the correct sequence of solubility of carbonates of alkaline earth metals ?



Answer: b



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

A. It is rendered passive by nitric acid

B. It forms Be

C. Its salts are rarely hydrolyzed

D. Its hydride is electron deficient and polymeric

**Answer: c**



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43. The suspension of slaked lime in water is known as

A. lime water

B. quick lime

C. milk of lime

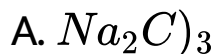
D. aqueous solution of slaked lime

**Answer: c**



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44. A colourless solid substance (A) on heating evolved  $CO_2$  and also gave a white residue, soluble in water. Residue also gave  $CO_2$  when treated with dilute HCl.

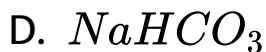
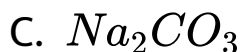
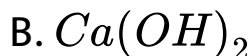


**Answer: b**



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45. The compound (X) on heating gives a colourless gas and a residue that is dissolved in water to obtain (B). Excess of  $CO_2$  is bubbled through aqueous solution of B, C is formed. Solid (C) on heating gives back X. (B) is



**Answer: b**



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46. Which of the following statement is false?

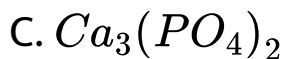
- A.  $Ca^{2+}$  ions are not important in maintaining the regular beating of the heart
- B.  $Mg^{2+}$  ions are important in the green parts of the plants
- C.  $Mg^{2+}$  ions form a complex with ATP
- D.  $Ca^{2+}$  ions are important in blood clotting

**Answer: a**



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47. The name 'Blue John' is given to which of the following compounds ?

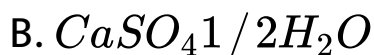


**Answer: b**



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48. formula of Gypsum is



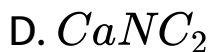
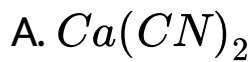
Answer: a



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49. When  $CaC_2$  is heated in atmospheric nitrogen in an electric furnace the compound formed is



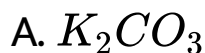


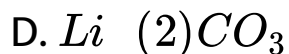
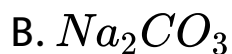
**Answer: b**



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**50.** Among the following the least thermally stable is





**Answer: d**



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**Textual Evaluation Solved li Write Brief Answer To The Following Questions**

1. Why sodium hydroxide is much more water soluble than chloride?



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2. Write the chemical equations for the reactions involved in solvay process of preparation of sodium carbonate



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3. An alkali metal (x) forms a hydrated sulphate,  $X_2SO_{4.10}H_2O$ . Is the metal more likely to be sodium (or) potassium.



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4. Write balanced chemical equation for each of the following chemical reactions

(i) Lithium metal with nitrogen gas

(ii) Heating solid sodium bicarbonate

(iii) Rubidium with oxygen gas

(iv) Solid potassium hydroxide with  $\text{CO}_2$

(v) Heating calcium carbonate

(vi) Heating calcium with oxygen



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5. Discuss briefly the similarities between beryllium and aluminium



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6. Give the systematic names for the following:

(i) milk of magnesia

(ii) lye

(iii) lime

(iv) caustic potash

(v) washing soda

(vi) soda ash and

(v) trona

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7. Substantiate lithium fluoride has the lowest solubility among group one metal fluorides

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8. Mention the uses of plaster of paris

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9. Beryllium halides are covalent whereas magnesium halides are ionic. Why?

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10. Alkaline earth metal (A), belongs to 3rd period reacts with oxygen and nitrogen to form compound (B) and (C) respectively. It undergoes metal displacement reaction with  $AgNO_3$  solution to form compound (D).

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11. Write balanced chemical equation for the following processes:

(a) heating calcium in oxygen

(b) heating calcium carbonate

(c) evaporating a solution of calcium hydrogen carbonate

(d) heating calcium oxide with carbon



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12. Explain the important common features of Group 2 elements



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**13.** Why group 2 elements are harder than alkali metals?



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**14.** How is plaster of paris prepared ?



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**15.** Give the uses of gypsum.



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16. Describe briefly the biological importance of calcium and magnesium.



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17. Which would you expect to have a higher melting point, magnesium oxide or magnesium fluoride? Explain your reasoning.



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**18.** Why sodium hydroxide is much more water soluble than chloride?



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**19.** Write the chemical equations for the reactions involved in solvay process of preparation of sodium carbonate



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20. An alkali metal (x) forms a hydrated sulphate,  $X_2SO_{4.10}H_2O$ . Is the metal more likely to be sodium (or) potassium.



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21. Write balanced chemical equation for each of the following chemical reactions

(i) Lithium metal with nitrogen gas

(ii) Heating solid sodium bicarbonate

(iii) Rubidium with oxygen gas

(iv) Solid potassium hydroxide with  $CO_2$

(v) Heating calcium carbonate

(vi) Heating calcium with oxygen

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**22.** Discuss briefly the similarities between beryllium and aluminium

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**23.** Give the systematic names for the following:

(i) milk of magnesia

(ii) lye

(iii) lime

(iv) caustic potash

(v) washing soda

(vi) soda ash and

(v) trona



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**24.** Substantiate lithium fluoride has the lowest solubility among group one metal fluorides



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25. Mention the uses of plaster of paris

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26. Beryllium halides are covalent whereas magnesium halides are ionic. Why?

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27. Alkaline earth metal (A), belongs to 3rd period reacts with oxygen and nitrogen to form compound (B) and (C) respectively. It undergo

metal displacement reaction with  $AgNO_3$  solution to form compound (D).

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**28.** Write balanced chemical equation for the following processes:

(a) heating calcium in oxygen

(b) heating calcium carbonate

(c) evaporating a solution of calcium hydrogen carbonate

(d) heating calcium oxide with carbon

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**29.** Explain the important common features of Group 2 elements



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**30.** Why alkaline earth metals are harder than alkali metals.



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**31.** How is plaster of paris prepared ?





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**32.** Give the uses of gypsum.



[Watch Video Solution](#)

**33.** Describe briefly the biological importance of calcium and magnesium.



[Watch Video Solution](#)

34. Which would you expect to have a higher melting point, magnesium oxide or magnesium fluoride? Explain your reasoning.



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## Additional Questions Solved M C Q

1. Among the following pairs, which occurs in large amounts in sea water?

A. Li, Rb

B. Cs, Fr

C. Na, K

D. Be, He

**Answer: C**



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**2. Which of the following are stored under oil?**

A. Alkali metals

B. Coinage metals

C. Noble metals

D. Phosphorous

**Answer: A**



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**3. Which of the following salt is more soluble?**

A.  $NaClO_4$

B.  $LiClO_4$

C.  $CsBr$

D. KI

**Answer: B**



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4. Which one of the following is the smallest atom?

A. Francium

B. Rubidium

C. Lithium

D. Sodium

**Answer: C**



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5. Which one of the following is less soluble in water?

A. LiCl

B. NaCl

C. KCl

D. CsI

**Answer: A**



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6. Which one of the following gives red colour in flame test?

A. Lithium

B. Sodium

C. Potassium

D. Francium

**Answer: A**



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7. Which colour is produced when alkali metals dissolved in liquid ammonia?

A. Red

B. Green

C. Blue

D. Violet

**Answer: C**



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8. Which one of the following alkali metals is highly reactive with water?

A. Li

B. Cs

C. Rb

D. K

**Answer: B**



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9. Which of the following is insoluble in water?

A. LiF

B. NaCl

C. KB

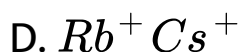
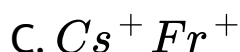
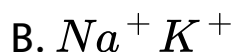
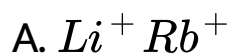
D. NaBr

**Answer: A**



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10. Which of the following ions perform important biological functions in maintenance of the ion balance and nerve impulse conduction?



**Answer: B**



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11. Which is the function of sodium - potassium pump?

- A. Maintenance of ion balance
- B. Used in nerve impulse conduction
- C. Transmitting nerve signals
- D. Regulates the blood level

**Answer: C**



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12. Which of the following ions are more responsible for transmission of nerve signal?



**Answer: A**



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**13.** Which of the following fruits contain maximum of potassium?

A. Grapes

B. Potatoes

C. Bananas

D. Mangoes

**Answer: C**



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**14.** Among the alkaline earth metals, which is radioactive in nature?

A. Beryllium

B. Calcium

C. Radium

D. Barium

**Answer: C**



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15. Among the following, which is the fifth most abundant element?

A. Beryllium

B. Barium

C. Radium

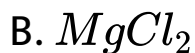
D. Calcium

**Answer: D**



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16. Which one of the following is covalent in character?

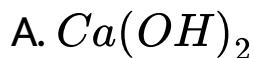


**Answer: A**



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17. Which one of the following is used in purification of sugar and as drying agent?



**Answer: D**



**Watch Video Solution**

**18. Statement-I:** Alkali metals are very soft metals

**Statement-II:** Since the atoms of alkali metals have bigger kernels and smaller number of valence electrons, the metallic bonds in them are very weak and hence they are soft

A. Statements-I and II are correct but statement-II is not the correct explanation of statement-I

B. Statements-I and II are correct and statement-II is the correct explanation of statement-I

C. Statement-I is correct but statement-II is wrong

D. Statement-I is wrong but statement-II is correct.

**Answer: B**



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19. Statement-I:  $BeCl_2$  is soluble in organic solvent.

Statement-II: Since  $BeCl_2$  is a covalent compound, it is soluble in organic solvent.

A. Statements-I and II are correct and statement-II is the correct explanation of statement-I.

B. Statements-I and II are correct but statement-II is not the correct explanation of statement-I.

C. Statement-I is wrong but statement-II is correct

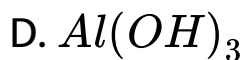
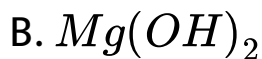
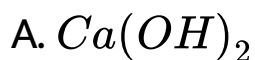
D. Statement-I is correct but statement-II is wrong

**Answer: A**



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**20.** Which one of the following is true?



**Answer: C**



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**21.** Statement-I: Cesium is considered as the most electropositive element

Statement-II: Due to its lowest ionization energy, cesium is considered as the most electropositive element

A. Statements-I and II are correct and statement-II is the correct explanation of statement-I.

B. Statements-I and II are correct but statement-II is not the correct explanation of



statement-I.

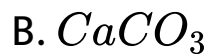
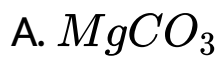
C. Statement-I is correct but statement-II is wrong.

D. Statement-I is wrong but statement-II is correct.

**Answer: A**

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**22.** Which of the following is the least thermally stable?



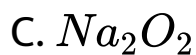
**Answer: D**



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**23.** Which of the following is not a peroxide?





**Answer: A**



**Watch Video Solution**

**24.** Among the following pairs, which occurs in large amounts in sea water?

A. Li, Rb

B. Cs, Fr

C. Na, K

D. Be, He

**Answer: C**



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**25.** Which of the following are stored under oil?

A. Alkali metals

B. Coinage metals

C. Noble metals

D. Phosphorous

**Answer: A**



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**26.** Which of the following salt is more soluble?



**Answer: B**



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27. Which one of the following is the smallest atom?

A. Francium

B. Rubidium

C. Lithium

D. Sodium

**Answer: C**



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28. Which one of the following is less soluble in water?

A. LiCl

B. NaCl

C. KCl

D. CsI

**Answer: A**



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29. Which one of the following gives red colour in flame test?

A. Lithium

B. Sodium

C. Potassium

D. Francium

**Answer: A**



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30. Which colour is produced when alkali metals dissolved in liquid ammonia?

- A. Red
- B. Green
- C. Blue
- D. Violet

**Answer: C**



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31. Which one of the following alkali metals is highly reactive with water?

A. Li

B. Cs

C. Rb

D. K

**Answer: D**



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32. Which of the following is insoluble in water?

A. LiF

B. NaCl

C. KB

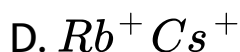
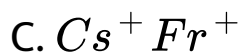
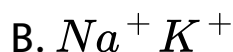
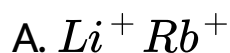
D. NaBr

**Answer: A**



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33. Which of the following ions perform important biological functions in maintenance of the ion balance and nerve impulse conduction?



**Answer: B**



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**34.** Which is the function of sodium - potassium pump?

- A. Maintenance of ion balance
- B. Used in nerve impulse conduction
- C. Transmitting nerve signals
- D. Regulates the blood level

**Answer: C**



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35. Which of the following ions are more responsible for transmission of nerve signal?



**Answer: A**



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**36.** Which of the following fruits contain maximum of potassium?

A. Grapes

B. Potatoes

C. Bananas

D. Mangoes

**Answer: C**



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37. Among the alkaline earth metals, which is radioactive in nature?

A. Beryllium

B. Calcium

C. Radium

D. Barium

**Answer: C**



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38. Among the following, which is the fifth most abundant element?

A. Beryllium

B. Barium

C. Radium

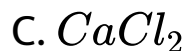
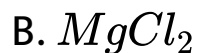
D. Calcium

**Answer: D**



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39. Which one of the following is covalent in character?

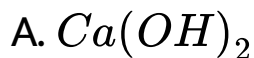


**Answer: A**



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40. Which one of the following is used in purification of sugar and as drying agent?



**Answer: D**



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**41. Statement-I:** Alkali metals are very soft metals

**Statement-II:** Since the atoms of alkali metals have bigger kernels and smaller number of valence electrons, the metallic bonds in them are very weak and hence they are soft

A. Statements-I and II are correct but statement-II is not the correct explanation of statement-I

B. Statements-I and II are correct and statement-II is the correct explanation of statement-I

C. Statement-I is correct but statement-II is wrong

D. Statement-I is wrong but statement-II is correct.

**Answer: B**



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**42.** Statement-I:  $BeCl_2$  is soluble in organic solvent.

Statement-II: Since  $BeCl_2$  is a covalent compound, it is soluble in organic solvent.

A. Statements-I and II are correct and statement-II is the correct explanation of statement-I.

B. Statements-I and II are correct but statement-II is not the correct explanation of statement-I.

C. Statement-I is wrong but statement-II is correct

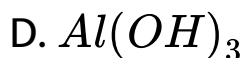
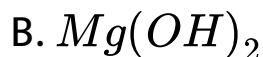
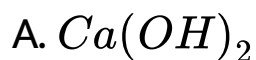
D. Statement-I is correct but statement-II is wrong

**Answer: A**



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**43.** Which one of the following is more basic?



**Answer: C**



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**44.** Statement-I: Cesium is considered as the most electropositive element

Statement-II: Due to its lowest ionization energy, cesium is considered as the most electropositive element

A. Statements-I and II are correct and statement-II is the correct explanation of statement-I.

B. Statements-I and II are correct but statement-II is not the correct explanation of



statement-I.

C. Statement-I is correct but statement-II is wrong.

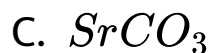
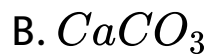
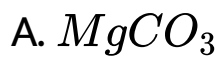
D. Statement-I is wrong but statement-II is correct.

**Answer: A**



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**45.** Which of the following is the least thermally stable?



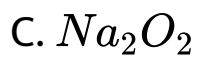
**Answer: D**



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**46.** Which of the following is not a peroxide?





**Answer: A**



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**Additional Questions Solved li Match The Following**

# 1. Match the following columns

List-I

- A. Beryllium
- B. Calcium
- C. Magnesium
- D. Barium

List-II

- 1. Sacrificial anode
- 2. X-ray tube radiation window
- 3. Scavenger to remove oxygen in TV
- 4. Getter in vacuum tubes

Code: A    B    C    D

(a)    4    2    3    1

(b)    2    4    1    3

(c)    3    1    4    2

(d)    1    3    2    4



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## 2. Match the following columns

List-I

- A. Beryllium
- B. Magnesium
- C. Calcium
- D. Strontium

List-II

- 1. Cement
- 2. Dating of rocks
- 3. X-ray detector
- 4. Missile construction

Code:	A	B	C	D
(a)	3	4	1	2
(b)	4	3	2	1
(c)	1	4	3	2
(d)	2	3	4	1



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## 3.

List-I

- A. Radium
- B. Barium
- C. Strontium
- D. Calcium

List-II

- 1. Dehydration of oils
- 2. Aircraft and watches
- 3. Deoxidiser in copper refining
- 4. Radioactive tracer

A.	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
	4	1	2	3

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
2	4	1	3

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
2	3	4	1

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	3	4	1

**Answer: C**



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**4. Match the following columns**

List-I

- A. Quick lime
- B. Calcium hydroxide
- C. Gypsum
- D. Plaster of paris

List-II

- 1. Casts of statues
- 2. Drying agent
- 3. White washing
- 4. Tooth paste



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5. Match the following columns

List-I

- A. CaO
- B.  $\text{Ca(OH)}_2$
- C.  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
- D.  $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$

List-II

- 1. Plaster of Paris
- 2. Quick lime
- 3. Slaked lime
- 4. Gypsum



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6. Match the following columns

List-I

- A. Chlorophyll
- B. Bones
- C. Dentistry
- D. Cement

List-II

- 1. Plaster of paris
- 2. Gypsum
- 3. Magnesium
- 4. Calcium



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7. Match the following columns

List-I

- A. Lithium
- B. Sodium
- C. Potassium
- D. Rubidium

List-II

- 1. Lilac
- 2. Reddish violet
- 3. Crimson red
- 4. Yellow

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8. Match the following columns

List-I

- A.  $\text{Na}_2\text{CO}_3$
- B.  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
- C.  $\text{NaHCO}_3$
- D.  $\text{NaOH}$

List-II

- 1. Caustic soda
- 2. Baking soda
- 3. Soda ash
- 4. Washing soda



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**9. Match the following columns**

List-I

- A. Manufacture of soap
- B. Mild antiseptic
- C. Softening of hard water
- D. Coolant in nuclear reactor

List-II

- 1.  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
- 2. Liquid Na metal
- 3. NaOH
- 4.  $\text{NaHCO}_3$

 **Watch Video Solution**

## 10. Match the following columns

List-I

- A. Beryllium
- B. Calcium
- C. Magnesium
- D. Barium

List-II

- 1. Sacrificial anode
- 2. X-ray tube radiation window
- 3. Scavenger to remove oxygen in TV
- 4. Getter in vacuum tubes

Code: A    B    C    D

(a)    4    2    3    1

(b)    2    4    1    3

(c)    3    1    4    2

(d)    1    3    2    4



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11. Match the following columns

List-I

- A. Beryllium
- B. Magnesium
- C. Calcium
- D. Strontium

List-II

- 1. Cement
- 2. Dating of rocks
- 3. X-ray detector
- 4. Missile construction

Code:	A	B	C	D
(a)	3	4	1	2
(b)	4	3	2	1
(c)	1	4	3	2
(d)	2	3	4	1



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12.

List-I

- A. Radium
- B. Barium
- C. Strontium
- D. Calcium

List-II

- 1. Dehydration of oils
- 2. Aircraft and watches
- 3. Deoxidiser in copper refining
- 4. Radioactive tracer

A.	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
	4	1	2	3

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
2	4	1	3

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
2	3	4	1

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
1	3	4	1

**Answer: C**



**Watch Video Solution**

**13. Match the following columns**

List-I

- A. Quick lime
- B. Calcium hydroxide
- C. Gypsum
- D. Plaster of paris

List-II

- 1. Casts of statues
- 2. Drying agent
- 3. White washing
- 4. Tooth paste



**Watch Video Solution**

14. Match the following columns

List-I

List-II

- |   |                     |
|---|---------------------|
| A. CaO                                  | 1. Plaster of Paris |
| B. Ca(OH) <sub>2</sub>                  | 2. Quick lime       |
| C. CaSO <sub>4</sub> .2H <sub>2</sub> O | 3. Slaked lime      |
| D. CaSO <sub>4</sub> .½H <sub>2</sub> O | 4. Gypsum           |



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15. Match the following columns

List-I

List-II

- |                |                     |
|----------------|---------------------|
| A. Chlorophyll | 1. Plaster of paris |
| B. Bones       | 2. Gypsum           |
| C. Dentistry   | 3. Magnesium        |
| D. Cement      | 4. Calcium          |



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16. Match the following columns

List-I

- A. Lithium
- B. Sodium
- C. Potassium
- D. Rubidium

List-II

- 1. Lilac
- 2. Reddish violet
- 3. Crimson red
- 4. Yellow

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17. Match the following columns

List-I

- A.  $\text{Na}_2\text{CO}_3$
- B.  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
- C.  $\text{NaHCO}_3$
- D.  $\text{NaOH}$

List-II

- 1. Caustic soda
- 2. Baking soda
- 3. Soda ash
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List-I

- A. Manufacture of soap
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- C. Softening of hard water
- D. Coolant in nuclear reactor

List-II

- 1.  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
- 2. Liquid Na metal
- 3. NaOH
- 4.  $\text{NaHCO}_3$

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## Additional Questions Solved | Fill In The Blanks

1. \_\_\_\_\_ is a radioactive in group one elements

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2. The general electronic configuration of alkali metals is \_\_\_\_\_

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3. The half life period of francium is \_\_\_\_\_

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4. The metal present in deposits of nitre is \_\_\_\_\_

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5. The metal present in deposits of nitre is \_\_\_\_\_

 [Watch Video Solution](#)

6. Rock salt is major source of \_\_\_\_\_

 [Watch Video Solution](#)

7. The general molecular formula of rock salt or table salt is \_\_\_\_\_

A. NaI

B. NaCl

C. KCl

D. KBr

**Answer:**



**Watch Video Solution**

8. The oxidation state of alkali metal is \_\_\_\_\_



**Watch Video Solution**

9. The second ionization enthalpy of alkali metals is \_\_\_\_\_

 [Watch Video Solution](#)

10. The colour produced by potassium when burnt in Bunsen flame is \_\_\_\_\_

 [Watch Video Solution](#)

11. Celestite and strontianite are the ores of \_\_\_\_\_

 [Watch Video Solution](#)

12. The eighth most abundant among the alkaline earth metals is \_\_\_\_\_

A. Mg

B. Ca

C. Sr

D. Ba

**Answer:**



**Watch Video Solution**

13. \_\_\_\_\_ gives green spark in fire works

A. Magnesium Chloride

B. Sodium nitrate

C. Copper chloride

D. Strontium carbonate

**Answer:**



**Watch Video Solution**

14. The correct electronic configuration of alkaline earth metal is \_\_\_\_\_

- A. [noble gases]ns1
- B. [noble gases]ns2
- C. [noble gases]ns2np6
- D. ns(n-1)d1-10

**Answer:**



**Watch Video Solution**

15. Copper chloride produces \_\_\_\_\_ colour in fire works



**Watch Video Solution**

16. In fire works, red colour flash is produced by\_\_\_\_\_



**Watch Video Solution**

17. The most common oxidation state of alkaline earth metals is\_\_\_\_\_

 [Watch Video Solution](#)

18. Hydroxides of beryllium are \_\_\_\_\_ in nature

 [Watch Video Solution](#)

19. When beryllium carbide reacts with water, the product mainly formed is \_\_\_\_\_

 [Watch Video Solution](#)



20. \_\_\_\_\_alkaline earth metal is not readily attacked by acids



**Watch Video Solution**

21. \_\_\_\_\_ is used as radiation windows for X-ray tubes



**Watch Video Solution**

22. \_\_\_\_\_ is used to build the beam pipe in accelerators.

 [Watch Video Solution](#)

23. \_\_\_\_\_ is used as a desulphurising agent for iron and steel

 [Watch Video Solution](#)

24. \_\_\_\_\_s used in photoengrave plates in printing industry

 [Watch Video Solution](#)

25. \_\_\_\_\_ is used in controlling galvanic corrosion



**Watch Video Solution**

26. \_\_\_\_\_ is used in dehydrating oils



**Watch Video Solution**

27. \_\_\_\_\_ is the formula of limestone



**Watch Video Solution**

28. How is bleaching powder prepared ?



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29. Which is known as a natural insulator?



[Watch Video Solution](#)

30. \_\_\_\_\_ is called animal starch



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31. \_\_\_\_\_ is used in toothpaste, shampoo and hair products.



**Watch Video Solution**

32. \_\_\_\_\_ plays an important role in agriculture as a soil additive, conditioner and fertilizer.



**Watch Video Solution**

33. \_\_\_\_\_ is used to treat upset stomach and eczema

 [Watch Video Solution](#)

34. About 393K, when Plaster of Paris is heated, it forms \_\_\_\_\_

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35. \_\_\_\_\_ is used in dentistry, ornamental works and making casts of statues

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36. \_\_\_\_\_ metal act as co-factor in phosphate transfer of ATP by enzymes.



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37. The main pigment in plants is chlorophyll which contains \_\_\_\_\_



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38. The most common alkaline earth metal found in the human body is \_\_\_\_\_

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39. \_\_\_\_\_ alkaline earth metal do not impart colour to a non-luminous flame.

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40. The reducing property of alkali metals Na, K, Rb, Cs, Li follows the order \_\_\_\_\_

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41. \_\_\_\_\_ is used in photoelectric cells?



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42. When caesium salt is subjected to flame test, the colour produced is \_\_\_\_\_



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43. \_\_\_\_\_ is used in making electrochemical cells



[Watch Video Solution](#)

44. Duralumin is an alloy of



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45. Exudate form \_\_\_\_\_ is used in making palm sugar



[Watch Video Solution](#)

46. \_\_\_\_\_ is used in making electrochemical cells



[Watch Video Solution](#)

47. \_\_\_\_\_ is used as a coolant in fast breeder nuclear reactor



[Watch Video Solution](#)

48. Give the uses of carbon dioxide.



[Watch Video Solution](#)

49. \_\_\_\_\_ is used in photoelectric cells?



[Watch Video Solution](#)

50. The formula of washing soda is \_\_\_\_\_



[Watch Video Solution](#)

51. \_\_\_\_\_ is used for mercerising cotton fabrics.



[Watch Video Solution](#)

52. \_\_\_\_\_ is used in fire extinguishers



[Watch Video Solution](#)

53. \_\_\_\_\_ is a radioactive in group one elements



[Watch Video Solution](#)

54. The general electronic configuration of alkali metals is \_\_\_\_\_



[Watch Video Solution](#)

55. The half life period of francium is \_\_\_\_\_



[Watch Video Solution](#)

56. The metal present in deposits of nitre is \_\_\_\_\_



[Watch Video Solution](#)

57. The metal present in deposits of nitre is \_\_\_\_\_



[Watch Video Solution](#)

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[Watch Video Solution](#)

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 [Watch Video Solution](#)

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 [Watch Video Solution](#)

61. The second ionization enthalpy of alkali metals is \_\_\_\_\_

 [Watch Video Solution](#)

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[Watch Video Solution](#)

63. Celestite and strontianite are the ores of \_\_\_\_\_



[Watch Video Solution](#)

64. The eighth most abundant among the alkaline earth metals is \_\_\_\_\_





[Watch Video Solution](#)

65. \_\_\_\_\_ gives green spark in fire works



[Watch Video Solution](#)

66. The correct electronic configuration of alkaline earth metal is \_\_\_\_\_



[Watch Video Solution](#)

67. Copper chloride produces \_\_\_\_\_ colour in fire works

 [Watch Video Solution](#)

68. In fire works, red colour flash is produced by\_\_\_\_\_

 [Watch Video Solution](#)

69. The most common oxidation state of alkaline earth metals is\_\_\_\_\_

 [Watch Video Solution](#)

70. Hydroxides of beryllium are \_\_\_\_\_ in nature

 [Watch Video Solution](#)

71. When beryllium carbide reacts with water, the product mainly formed is \_\_\_\_\_

 [Watch Video Solution](#)

72. \_\_\_\_\_alkaline earth metal is not readily attacked by acids



**Watch Video Solution**

73. \_\_\_\_\_ is used as radiation windows for X-ray tubes



**Watch Video Solution**

74. \_\_\_\_\_ is used to build the beam pipe in accelerators.

 [Watch Video Solution](#)

75. \_\_\_\_\_ is used as a desulphurising agent for iron and steel

 [Watch Video Solution](#)

76. \_\_\_\_\_s used in photoengrave plates in printing industry

 [Watch Video Solution](#)

77. \_\_\_\_\_ is used in controlling galvanic corrosion



[Watch Video Solution](#)

78. \_\_\_\_\_ is used in dehydrating oils



[Watch Video Solution](#)

79. \_\_\_\_\_ is the formula of limestone



[Watch Video Solution](#)

80. \_\_\_\_\_ is named as bleaching powder.



[Watch Video Solution](#)

81. Which is known as a natural insulator?



[Watch Video Solution](#)

82. \_\_\_\_\_ is called ornamental stone



[Watch Video Solution](#)

83. \_\_\_\_\_ is used in toothpaste, shampoo and hair products.



**Watch Video Solution**

84. \_\_\_\_\_ plays an important role in agriculture as a soil additive, conditioner and fertilizer.



**Watch Video Solution**

85. \_\_\_\_\_ is used to treat upset stomach and eczema



 [Watch Video Solution](#)

86. About 393K, when Plaster of Paris is heated, it forms \_\_\_\_\_

 [Watch Video Solution](#)

87. \_\_\_\_\_ is used in dentistry, ornamental works and making casts of statues

 [Watch Video Solution](#)

88. \_\_\_\_\_ metal act as co-factor in phosphate transfer of ATP by enzymes.

 [Watch Video Solution](#)

89. The main pigment in plants is chlorophyll which contains \_\_\_\_\_

 [Watch Video Solution](#)

90. The most common alkaline earth metal found in the human body is \_\_\_\_\_

 [Watch Video Solution](#)

91. \_\_\_\_\_ alkaline earth metal do not impart colour to a non-luminous flame.

 [Watch Video Solution](#)

92. The reducing property of alkali metals Na, K, Rb, Cs, Li follows the order \_\_\_\_\_

 [Watch Video Solution](#)

93. \_\_\_\_\_ is used in photoelectric cells?



[Watch Video Solution](#)

94. When caesium salt is subjected to flame test, the colour produced is \_\_\_\_\_



[Watch Video Solution](#)

95. \_\_\_\_\_ alloy is used in making white metal bearings for motor engines?



[Watch Video Solution](#)

96. Lithium aluminium alloy is used in making

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[Watch Video Solution](#)

97. \_\_\_\_\_ is used in making armour plates.



[Watch Video Solution](#)

98. \_\_\_\_\_ is used in making electrochemical cells



[Watch Video Solution](#)

99. \_\_\_\_\_ is used as a coolant in fast breeder nuclear reactor



[Watch Video Solution](#)

100. \_\_\_\_\_ is an excellent absorbent of carbon dioxide



[Watch Video Solution](#)

101. \_\_\_\_\_ is used in making electrochemical cells



[Watch Video Solution](#)

102. The formula of washing soda is \_\_\_\_\_



[Watch Video Solution](#)

103. \_\_\_\_\_ is used for mercerising cotton fabrics.



[Watch Video Solution](#)

104. \_\_\_\_\_ is used in fire extinguishers



[Watch Video Solution](#)

## Additional Questions Solved | Choose The Odd Out

1. Choose the odd one out

A. Lithium

B. Sodium

C. Magnesium

D. Potassium

**Answer:**



[Watch Video Solution](#)



2. Choose the odd one out

A. Beryllium

B. Caesium

C. Magnesium

D. Calcium

**Answer:**



**Watch Video Solution**

3. Choose the odd one out

- A. Calcium
- B. Strontium
- C. Barium
- D. Potassium

**Answer:**



**Watch Video Solution**

**4. Choose the odd one out**

- A. Rubidium
- B. Potassium

C. Barium

D. Caesium

**Answer:**



**Watch Video Solution**

**5. Choose the odd one out**

A. Lithium

B. Sodium

C. Magnesium

D. Potassium

**Answer:**



**Watch Video Solution**

**6. Choose the odd one out**

A. Beryllium

B. Caesium

C. Magnesium

D. Calcium

**Answer:**



**Watch Video Solution**

7. Choose the odd one out

A. Calcium

B. Strontium

C. Barium

D. Potassium

**Answer:**



**Watch Video Solution**

8. Choose the odd one out

A. Rubidium

B. Potassium

C. Barium

D. Caesium

**Answer:**



**Watch Video Solution**

**Additional Questions Solved V Choose The Correct Pair**

1. Choose the correct pair

A. Lithium : Lilac

B. Potassium : Crimson red

C. Caesium : Blue

D. Rubidium : Yellow

**Answer: C**



**Watch Video Solution**

2. Choose the correct pair

A. Sodium : Sylvite

B. Potassium : Rock salt

C. Lithium : Kaoline

D. Sodium : Rock salt

**Answer: D**



**Watch Video Solution**

**3. Choose the correct pair**

A. Liquid sodium metal : Coolant in fast nuclear reactor



B. Caesium : fertilizer

C. Potassium chloride : devising photo electric  
ccils

D. Lithium carbonate : electro chemical cells

**Answer: A**



**Watch Video Solution**

**4. Choose the correct pair**

A. Sodium carbonate :  $NaHCO_3$

B. Sodium bicarbonate :  $NaHCO_3$

C. Cooking salt :  $\text{NaCl}$

D. Baking soda :  $\text{Na}_2\text{CO}_3$

**Answer: B**



**Watch Video Solution**

5. Choose the correct pair

A. Washing soda :  $\text{NaCl}$

B. Baking soda:  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$

C. Table salt:  $\text{NaHCO}_3$

D. Baking soda :  $\text{NaHCO}_3$

**Answer: D**



**Watch Video Solution**

**6. Choose the correct pair**

A. Beryllium

B. Calcium: Fluorapatite

C. Barium: Beryl

D. Strontium: Dolomite

**Answer: B**



**View Text Solution**

7. Choose the correct pair

A. Lime water:  $\text{CaO}$

B. Quick lime:  $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$

C. Gypsum:  $\text{Ca}(\text{OH})_2$

D. Plaster of paris :  $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$

**Answer: D**



**Watch Video Solution**

8. Choose the correct pair

A. Lithium : Lilac

B. Potassium : Crimson red

C. Caesium : Blue

D. Rubidium : Yellow

**Answer: C**



**Watch Video Solution**

9. Choose the correct pair

- A. Sodium : Sylvite
- B. Potassium : Rock salt
- C. Lithium : Kaoline
- D. Sodium : Rock salt

**Answer: D**



**Watch Video Solution**

**10. Choose the correct pair**

- A. Liquid sodium metal : Coolant in fast nuclear reactor

B. Caesium : fertilizer

C. Potassium chloride : devising photo electric  
ccils

D. Lithium carbonate : electro chemical cells

**Answer: A**



**Watch Video Solution**

**11. Choose the incorrect pair**

A. Sodium carbonate :  $Na_2CO_3$

B. Sodium bicarbonate :  $NaHCO_3$

C. Cooking salt : NaCl

D. Baking soda :  $Na_2CO_3$

**Answer: B**



**Watch Video Solution**

**12. Choose the correct pair**

A. Washing soda : NaCl

B. Caustic soda:  $Na_2CO_3 \cdot 10H_2O$

C. Table salt:  $NaHCO_3$

D. Baking soda :  $NaHCO_3$



**Answer: D**



**Watch Video Solution**

**13. Choose the correct pair**

A. Beryllium

B. Calcium: Fluorapatite

C. Barium: Beryl

D. Strontium: Dolomite

**Answer: B**



**View Text Solution**

14. Choose the correct pair

A. Lime water:  $\text{CaO}$

B. Quick lime:  $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$

C. Gypsum:  $\text{Ca}(\text{OH})_2$

D. Plaster of paris :  $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$

**Answer: D**



**Watch Video Solution**

1. Choose the incorrect pair

A. Lithium: Crimson red

B. Sodium : Yellow

C. Potassium : Blue

D. Rubidium : Reddish violet

**Answer: C**



**Watch Video Solution**

2. Choose the incorrect pair

A. Lithium

B. Lithium carbonate : Medicines

C. Liquid sodium : Fertilizers

D. Caesium:Photo electric cells

**Answer: C**



**Watch Video Solution**

3. Choose the incorrect pair

A.  $Na_2CO_3 \cdot 10H_2O$ :Washing soda

B.  $NaHCO_3$ :Baking soda

C. NaCl:Cooking salt

D. NaOH :Soda lime

**Answer: D**



**Watch Video Solution**

**4. Choose the incorrect pair**

A. Calcium: Brick red

B. Strontium: Crimson

C. Sodium: Blue

D. Barium: Apple green

**Answer: C**



**Watch Video Solution**

**5. Choose the incorrect pair**

A. Calcium: Deoxidiser

B. Strontium: Cancer therapy

C. Radium: Aircraft switches

D. Beryllium: desiccant

**Answer: D**



**Watch Video Solution**

**6. Choose the incorrect pair**

A. Lithium: Crimson red

B. Sodium : Yellow

C. Potassium : Blue

D. Rubidium : Reddish violet

**Answer: C**



**Watch Video Solution**

7. Choose the incorrect pair

A. Lithium : Electrochemical cell

B. Lithium carbonate : Medicines

C. Liquid sodium : Fertilizers

D. Caesium:Photo electric cells

**Answer: C**



**Watch Video Solution**



8. Choose the incorrect pair

A.  $Na_2CO_3 \cdot 10H_2O$ :Washing soda

B.  $NaHCO_3$ :Baking soda

C. NaCl:Cooking salt

D. NaOH :Soda lime

**Answer: D**



**Watch Video Solution**

9. Choose the incorrect pair

- A. Calcium: Brick red
- B. Strontium: Crimson
- C. Sodium: Blue
- D. Barium: Apple green

**Answer: C**



**Watch Video Solution**

**10. Choose the incorrect pair**

- A. Calcium: Deoxidiser
- B. Strontium: Cancer therapy

C. Radium: Aircraft switches

D. Beryllium: desiccant

**Answer: D**



**Watch Video Solution**

## Additional Questions Solved VII Assertion Reason

1. Assertion (A): Lithium salts are more soluble than salts of other metals of group-I

Reason (R): The high solubility of Li salts is due to strong solvation of small size of Li ion.

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. (A) is correct but (R) is wrong

D. (A) is wrong but (R) is correct

**Answer: D**



**Watch Video Solution**

2. Assertion (A): Alkali metal salts with conc.HCl on heating gives characteristic coloured flame.

Reason (R): The heat in the flame excited the valence electron to higher energy level and when it drops back, the excess energy emitted as light in the visible region gives colour

A. Both (A) and (R) are correct but (R) is not the correct explanation of (A)

B. Both (A) and (R) are correct and (R) is the correct explanation of (A)

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct

**Answer: B**



**Watch Video Solution**

**3. Assertion (A):** LiF is less soluble in water. Reason

**(R):** LiF has high lattice enthalpy and small size of

$Li^+$  and  $F^{(-)}$

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. (A) is correct but (R) is wrong
- D. (A) is wrong but (R) is correct

**Answer: A**



**Watch Video Solution**

**4. Assertion (A):** Sodium hydrogen carbonate is used in baking cakes and pastries

**Reason (R):** On heating sodium hydrogen

carbonate, liberates bubbles of  $CO_2$  leaving holes in cakes and making them light and fluffy.

- 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. (A) is correct but (R) is wrong
- D. (A) is wrong but (R) is correct

**Answer: A**



**Watch Video Solution**



5. Assertion (A): Lithium salt are more soluble than salts of other metals of group-I

Reason (R): The high solubility of Li salts is due to strong solvation of small size of Li ion.

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. (A) is correct but (R) is wrong

D. (A) is wrong but (R) is correct

**Answer: D**



**Watch Video Solution**

**6. Assertion (A):** Alkali metal salts with conc.HCl on heating gives characteristic coloured flame.

**Reason (R):** The heat in the flame excited the valence electron to higher energy level and when it drops back, the excess energy emitted as light in the visible region gives colour

A. Both (A) and (R) are correct but (R) is not the correct explanation of (A)

- B. Both (A) and (R) are correct and (R) is the correct explanation of (A)
- C. (A) is correct but (R) is wrong.
- D. (A) is wrong but (R) is correct

**Answer: B**



**Watch Video Solution**

7. Assertion (A): LiF is less soluble in water. Reason (R): LiF has high lattice enthalpy and small size of  $Li^+$  and  $F^{(-)}$

- 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. (A) is correct but (R) is wrong
- D. (A) is wrong but (R) is correct

**Answer: A**



**Watch Video Solution**

8. Assertion (A): Sodium hydrogen carbonate is used in baking cakes and pastries

Reason (R): On heating sodium hydrogen carbonate, liberates bubbles of  $CO_2$  leaving holes in cakes and making them light and fluffy.

- 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. (A) is correct but (R) is wrong
- D. (A) is wrong but (R) is correct

**Answer: A**



**Watch Video Solution**

## **Additional Questions Solved Viii Choose The Correct Statement**

**1. Choose the correct statement**

- A. Rubidium is a radioactive element.
- B. Francium is highly radioactive
- C. Alkali metals are less reactive
- D. Alkali metals belong to 2s group

**Answer: B**



**Watch Video Solution**

**2. Choose the correct statement**

A. Alkali metals act as good oxidising agent.

B. Alkali metals act as good reducing agent

C. Alkaline earth metals act as dehydrating agents

D. Alkaline earth metals act as decarboxylating agents

**Answer: B**



**Watch Video Solution**

**3. Choose the correct statement**

- A. Sodium carbonate  $Na_2CO_3 \cdot 10H_2O$  above 373K called soda ash
- B. Sodium-calcium pump play an important role in transmitting nerve signals.
- C. Radium is the most abundant alkaline earth metal.



D. Common oxidation state of alkali metal is +2

**Answer: A**



**Watch Video Solution**

**4. Choose the correct statement**

A. Rubidium is a radioactive element.

B. Francium is highly radioactive

C. Alkali metals are less reactive

D. Alkali metals belong to 2s group

**Answer: B**



**Watch Video Solution**

**5. Choose the correct statement**

A. Alkali metals act as good oxidising agent.

B. Alkali metals act as good reducing agent

C. Alkaline earth metals act as dehydrating  
agents

D. Alkaline earth metals act as decarboxylating  
agents

**Answer: B**



**Watch Video Solution**

**6. Choose the correct statement**

- A. Sodium carbonate  $Na_2CO_3 \cdot 10H_2O$  above 373K called soda ash
- B. Sodium-calcium pump play an important role in transmitting nerve signals.
- C. Radium is the most abundant alkaline earth metal.

D. Common oxidation state of alkali metal is +2

**Answer: A**



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## Additional Questions Solved

1. Why alkali metals and alkaline earth metals are called s-block elements?



**Watch Video Solution**

2. Why group 1 elements are called alkali metals?



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3. Which is the radioactive element in group 1 element? What is its half-life period?



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4. Alkali metals are stored under oil. Give reason.



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5. Name the list of elements present in alkali metal group. What is the configuration of them?

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6. Alkali metals never found in free state in nature. Why?

 [Watch Video Solution](#)

7. The second ionization enthalpy of alkali metals are very high. Give reason

 [Watch Video Solution](#)

8.  $LiClO_4$  is more soluble than  $NaClO_4$ . Why?

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9. Why does lithium exhibit anomalous properties  
?

 [Watch Video Solution](#)

10. Why alkali metals have high chemical reactivity? How this changes along the group?

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11. Lithium forms monoxide with oxygen whereas sodium forms peroxide with oxygen. Why?

 [Watch Video Solution](#)

12. Explain the action of hydrogen with alkali metals



 [Watch Video Solution](#)

**13.** Alkali metal hydrides are strong reducing agents. Prove this statement.

 [Watch Video Solution](#)

**14.** Explain the action of halogen with alkali metals

 [Watch Video Solution](#)

**15.** Explain the action of sodium with water.



[Watch Video Solution](#)

**16.** What happens when potassium is treated with water?



[Watch Video Solution](#)

**17.** LiCl is soluble in water whereas LiBr and LiI are soluble in organic solvent. Give reason



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18.  $Li_2CO_3$  decomposes readily whereas other carbonates are not. Why?

 [Watch Video Solution](#)

19. What are the elements present in group 2? Give their general electronic configuration.

 [Watch Video Solution](#)

20. Why group 2 elements are called alkaline earth metals?

 [Watch Video Solution](#)

**21.** Atomic radii of alkaline earth metals are smaller than the corresponding members of alkali metals.

Why?

 [Watch Video Solution](#)

**22.** Why beryllium has distinctive character?

 [Watch Video Solution](#)

23. Explain the action of halogen with alkaline earth metals.

 [Watch Video Solution](#)

24. How beryllium chloride is prepared from beryllium oxide?

 [Watch Video Solution](#)

25. How would you prepare beryllium hydride from beryllium chloride?

 [Watch Video Solution](#)

26. Mention the uses of beryllium.

 [Watch Video Solution](#)

27. Write about the uses of strontium

 [Watch Video Solution](#)

28. Mention the uses of radium.

 [Watch Video Solution](#)

29. BeO is covalent where as MgO is ionic. Give reason.



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30. How is barium peroxide prepared?



[Watch Video Solution](#)

31. How would you prepare quick lime ?



[Watch Video Solution](#)

**32.** What is slaking of lime?



**Watch Video Solution**

**33.** What happens when quick lime reacts with

(i)  $H_2O$  and

(ii)  $CO_2$



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**34.** Prove that calcium oxide is a basic oxide





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**35.** Mention the uses of quick lime.



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**36.** What is milk of lime? How  $CO_2$  reacts with it?



[Watch Video Solution](#)

**37.** What happens when excess of  $CO_2$  reacts with calcium carbonate?



[Watch Video Solution](#)

**38.** How is bleaching powder prepared ?



[Watch Video Solution](#)

**39.** Write the uses of calcium hydroxide.



[Watch Video Solution](#)

**40.** How gypsum occurs in nature?



[Watch Video Solution](#)

**41.** How is gypsum synthesized?



**Watch Video Solution**

**42.** What is retrograde solubility ?



**Watch Video Solution**

**43.** Write a note about physical appearance of gypsum.



**Watch Video Solution**

**44.** Prove that gypsum is a natural insulator



**Watch Video Solution**

**45.** Write a note about alabaster.



**Watch Video Solution**

**46.** What is dead burnt plaster ?



**Watch Video Solution**

47. What is meant by setting of cement?



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48. Which is the most abundant metal found in the human body? Explain how it Works inside the human body?



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

 [Watch Video Solution](#)

**50.** Explain why can alkali and alkaline earth metals not be obtained by chemical reduction method

 [Watch Video Solution](#)

**51.** Why are potassium and caesium, rather than lithium used in photochemical cells ?

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



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



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55. What is the following compounds (Give equations for the reactions)? What is the effect of heat on the following compounds (Give equations for the reactions)?





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**56.** Explain the following:

(a) Lithium iodide is more covalent than lithium fluoride

(b) Lattice enthalpy of LiF is maximum among all the alkali metal halides.

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**57.** Why alkali metals are soft and have low melting points?

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



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59. Give reasons for the following. Sodium and potassium are stored in kerosene.



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60. What is the structure of  $BeCl_2$  ?



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61. Why is  $Li_2CO_3$  decomposed at a lower temperature whereas  $Na_2CO_3$  at higher temperature:



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62. . Alkali metals give colouration when heated in Bunsen flame. Give reason.



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**63.** How Sodium metal reacts with

(i) ethanol and

(ii) acetylene.



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**64.** Mention the uses of lithium and its compounds.



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65. What are the uses of sodium and its compounds?

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 [Watch Video Solution](#)

67. What is soda ash ? How it obtained ?

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**68.** List down the uses of washing soda.



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**69.** How would you prepare pure sodium chloride from crude salt?



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**70.** Mention the uses of sodium chloride.



**Watch Video Solution**

**71.** List the uses of sodium hydroxide.



**Watch Video Solution**

**72.** Give reason why sodium bicarbonate is used in bakeries.



**Watch Video Solution**

**73.** Write about the uses of sodium bicarbonate.



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74. Explain the action of soda lime with

(i)  $SiO_2$

and (ii)  $P_4O_{10}$



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75. Explain the periodic nature of ionization enthalpy in the alkali group.



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**76.** Explain the various periodic trends in the alkali metals down the group



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**77.** Explain about the anomalous behaviour of lithium among the alkali metals



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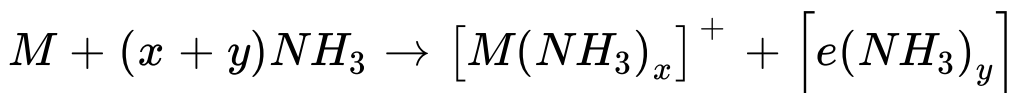
**78.** How alkali metals react with oxygen? Explain with equation.

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79. How alkali metals react with liquid ammonia?

 [Watch Video Solution](#)

80. What is the reason behind the blue colouration of alkali metals with liquid ammonia?



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**81.** Explain how alkali metal oxide reacts with water?

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**82.** Describe about the fire works of alkaline earth metals.

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**83.** Copper and chlorine compounds makes blue fire work. Why?

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84.  $IE_2$  values of alkaline earth metals are much smaller than those of alkali metals. Explain.

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85.  $MgCl_2$  and  $CaCl_2$  are easily hydrated, while NaCl and KCl are not hydrated. Why?

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**86.** What are the distinctive behaviour of beryllium?

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**87.** Write about the important uses of calcium

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**88.** Mention about the uses of barium.

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89.  $Be(OH)_2$  is amphoteric in nature. Prove it.



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90. Write a note about the structure of beryllium chloride



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91. Draw the structure of  $BeCl_2$  in different physical states.



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**92.** Write about the sulphates of alkaline earth metals.



**Watch Video Solution**

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



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94. Compare the alkali metals and alkaline earth metals with respect to

ionization enthalpy

(ii) basicity of oxides and

(iii) solubility of hydroxides.



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95. Why is  $Li_2CO_3$  decomposed at a lower temperature whereas  $Na_2CO_3$  at higher temperature:



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96. What happens when

(i) Sodium metal is dropped in water?

(ii) Sodium metal is heated in free supply of air?

(iii) Sodium peroxide dissolves in water?



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97. Write balanced equations for reactions

between (i)  $Na_2O_2$  and water

(i)  $KO_2$  and water

(ii)  $Na_2O$  and  $CO_2$



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98. How would you explain the following observations?

(i) BeO is almost insoluble but  $BeSO_4$  is soluble in water

(ii) BaO is soluble but  $BaSO_4$ , is insoluble in water

(iii) LiI is more soluble than KI in ethanol.



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99. Why Cs is considered as the most electropositive element?

Lithium cannot be used in making photoelectric cells.

Lithium does not form alums



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**100.** Give the important uses of the following compounds.

i)  $NaHCO_3$

(ii)  $NaOH$



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

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

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**103.** Which out of the following can be used to store an alkali metal? i)  $H_2O$

(ii)  $C_2H_5OH$  and

(iii) benzene



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**104.** Explain in what respects lithium is different from other metals of the same group.



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**105.** Describe about the biological important of sodium and potassium.

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**106.** Compare the properties of beryllium with other elements of the same group.

 [Watch Video Solution](#)

**107.** List out the uses of magnesium

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**108.** Distinguish between alkali metals and alkaline earth metals.



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**109.** State as to why

(a) Alkali metals show only +1 oxidation state

(b) Na and K impart colour to the flame but Mg does not. It

(c) Lithium on being heated in air mainly forms the monoxide and not the peroxide

(d) Li is the best reducing agent in aqueous solution



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**110.** An alkali metal (A) belongs to period number II and group number I react with oxygen to form (B). (A) reacts with water to form (C) with liberation of hydrogen compound Identify A, B, C.



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**111.** Describe solvay process (or) how is washing soda ( or) sodium carbonate prepared in industries?



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**112.** How is sodium hydroxide prepared commercially from brine solution?



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**113.** Why alkali metals and alkaline earth metals are called s-block elements?



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**114.** Why group 1 elements are called alkali metals?



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**115.** Which is the radioactive element in group 1 element? What is its half-life period?



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**116.** Alkali metals are stored under oil. Give reason.



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**117.** Name the list of elements present in alkali metal group. What is the configuration of them?



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**118.** Alkali metals never found in free state in nature. Why?



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**119.** The second ionization enthalpy of alkali metals are very high. Give reason



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**120.**  $LiClO_4$  is more soluble than  $NaClO_4$  Why?



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**121.** Why does lithium exhibit anomalous properties ?

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**122.** Why alkali metals have high chemical reactivity? How this changes along the group?

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**123.** Lithium forms monoxide with oxygen whereas sodium forms peroxide with oxygen. Why?

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**124.** Explain the action of hydrogen with alkali metals

 [Watch Video Solution](#)

**125.** Alkali metal hydrides are strong reducing agents. Prove this statement.

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**126.** Explain the action of halogen with alkali metals



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**127.** Explain the action of sodium with water.



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**128.** What happens when potassium is treated with water?



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**129.** LiCl is soluble in water whereas LiBr and LiI are soluble in organic solvent. Give reason



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**130.**  $Li_2CO_3$  decomposes readily whereas other carbonates are not. Why?



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**131.** What are the elements present in group 2?

Give their general electronic configuration.



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**132.** Why group 2 elements are called alkaline earth metals?



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**133.** Atomic radii of alkaline earth metals are smaller than the corresponding members of alkali

metals. Why?



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**134.** Why beryllium has distinctive character?



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**135.** Explain the action of halogen with alkaline earth metals.



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**136.** How beryllium chloride is prepared from beryllium oxide?



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**137.** How would you prepare beryllium hydride from beryllium chloride?



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**138.** Mention the uses of beryllium.



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**139.** Write about the uses of strontium



**Watch Video Solution**

**140.** Mention the uses of radium.



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**141.** BeO is covalent where as MgO is ionic. Give reason.



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**142.** How is barium peroxide prepared?



**Watch Video Solution**

**143.** How would you prepare quick lime ?



**Watch Video Solution**

**144.** What is slaking of lime?



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**145.** What happens when quick lime reacts with

(i)  $H_2O$  and

(ii)  $CO_2$



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**146.** Prove that calcium oxide is a basic oxide



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**147.** Mention the uses of quick lime.



**Watch Video Solution**

**148.** What is milk of lime? How  $CO_2$  reacts with it?

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**149.** What happens when excess of  $CO_2$  reacts with calcium carbonate?

 [Watch Video Solution](#)

**150.** What is bleaching powder? How is it prepared?



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**151.** What are the uses of Calcium ?



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**152.** How gypsum occurs in nature?



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**153.** How is gypsum synthesized?



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**154.** What is retrograde solubility ?



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**155.** Write a note about physical appearance of gypsum.



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**156.** Prove that gypsum is a natural insulator



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**157.** Write a note about alabaster.



**Watch Video Solution**

**158.** What is dead burnt plaster ?



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**159.** What is meant by setting of cement?



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**160.** Which is the most abundant metal found in the human body? Explain how it Works inside the human body?



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**161.** In what ways lithium snows similarities to magnesium in its chemical behaviour



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**162.** Explain why can alkali and alkaline earth metals not be obtained by chemical reduction method



**Watch Video Solution**

**163.** Why are potassium and caesium, rather than lithium used in photochemical cells ?



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



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**169.** Why alkali metals are soft and have low melting points?

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

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

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172. Draw the structure of  $BeCl_2$  in different physical states.



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173. Why is  $Li_2CO_3$  decomposed at a lower temperature whereas  $Na_2CO_3$  at higher temperature:



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**174.** Alkali metals give colouration when heated in Bunsen flame. Give reason.



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**175.** How Sodium metal reacts with

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**176.** Mention the uses of lithium and its compounds.

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**177.** What are the uses of sodium and its compounds?

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**178.** What are the uses of potassium and its compounds?



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**179.** What is soda ash ? How it obtained ?

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**188.** Explain the various periodic trends in the alkali metals down the group

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**189.** Explain about the anomalous behaviour of lithium among the alkali metals

 [Watch Video Solution](#)

**190.** How alkali metals react with oxygen? Explain with equation.

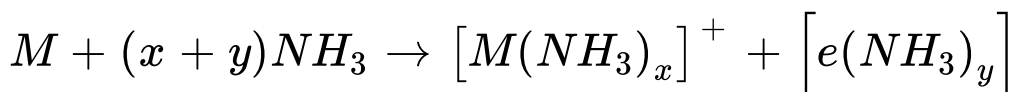
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**195.** Copper and chlorine compounds makes blue fire work. Why?

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**196.**  $IE_1$  of alkaline earth metals are higher than that of alkali metals, but  $IE_2$  of alkaline metals are

smaller than that of alkali metals. Give reason.



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**197.**  $MgCl_2$  and  $CaCl_2$  are easily hydrated, while  $NaCl$  and  $KCl$  are not hydrated. Why?



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**198.** What are the distinctive behaviour of beryllium?



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**207.** Why is  $Li_2CO_3$ , decomposed at a lower temperature, whereas  $Na_2CO_3$ , at higher temperature?



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**208.** What happens when

(i) Sodium metal is dropped in water?

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**209.** Write balanced equations for reactions between (i)  $Na_2O_2$  and water

(i)  $KO_2$  and water

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**210.** How would you explain the following observations?

(i)  $BeO$  is almost insoluble but  $BeSO_4$  is soluble in water



(ii) BaO is soluble but BaSo, is insoluble in water

(iii) Lil is more soluble than KI in ethanol.

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**211.** Why Cs is considered as the most electropositive element?

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**212.** Give the important uses of the following compounds



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