

QB365 Question Bank Software Study Materials

Alkali and Alkaline Earth Metals 50 Important 1 Marks Questions With Answers (Book Back and Creative)

11th Standard

Chemistry

Total Marks : 50

Multiple Choice Question

50 x 1 = 50

- 1) For alkali metals, which one of the following trends is incorrect ?
(a) Hydration energy: $\text{Li} > \text{Na} > \text{K} > \text{Rb}$ (b) Ionisation energy: $\text{Li} > \text{Na} > \text{K} > \text{Rb}$ **(c) Density: $\text{Li} < \text{Na} < \text{K} < \text{Rb}$**
(d) Atomic size: $\text{Li} < \text{Na} < \text{K} < \text{Rb}$
- 2) Which of the following statements is in correct ?
(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
- 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**
- 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
- 5) sodium is stored in _____
(a) alcohol (b) water **(c) kerosene** (d) none of these
- 6) RbO_2 is _____
(a) superoxide and paramagnetic (b) peroxide and diamagnetic (c) superoxide and diamagnetic
(d) peroxide and paramagnetic
- 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
- 8) Lithium shows diagonal relationship with _____
(a) sodium **(b) magnesium** (c) calcium (d) aluminium
- 9) In case of alkali metal halides, the ionic character increases in the order _____
(a) $\text{MF} < \text{MCl} < \text{MBr} < \text{MI}$ **(b) $\text{MI} < \text{MBr} < \text{MCl} < \text{MF}$** (c) $\text{MI} < \text{MBr}$ (d) none of these
- 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
- 11) The product obtained as a result of a reaction of nitrogen with CaC_2 is _____
(a) $\text{Ca}(\text{CN})_3$ (b) CaN_2 **(c) CaCN_2** (d) Ca_3N_2
- 12) Which of the following has highest hydration energy _____
(a) MgCl_2 (b) CaCl_2 (c) BaCl_2 (d) SrCl_2

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

13) (P) Sodium	(1) Brick red
(q) Calcium	(2) Yellow
(r) Barium	(3) Violet
(s) Strontium	(4) Apple green
(t) Cesium	(5) Crimsonred
(u) Potassium	(6) Blue

- (a) **p - 2, q - 1, r - 4, s - 5, t - 6, u - 3** (b) p - 1, q - 2, r - 4, s - 5, t - 6, u - 3 (c) p - 4, q - 1, r - 2, s - 3, t - 5, u - 6
 (d) p - 6, q - 1, r - 2, s - 3, t - 5, u - 4

14) Which is the correct sequence of solubility of carbonates of alkaline earth metals ?

- (a) $\text{BaCO}_3 > \text{SrCO}_3 > \text{CaCO}_3 > \text{MgCO}_3$ (b) **$\text{MgCO}_3 > \text{CaCO}_3 > \text{SrCO}_3 > \text{BaCO}_3$** (c) $\text{CaCO}_3 > \text{BaCO}_3 > \text{SrCO}_3 > \text{BaCO}_3$
 (d) $\text{BaCO}_3 > \text{CaCO}_3 > \text{SrCO}_3 > \text{MaCO}_3$

15) 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 hydrolysed**
 (d) Its hydride is electron deficient and polymeric

16) 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

17) 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 _____

- (a) Na_2CO_3 (b) **NaHCO_3** (c) CaCO_3 (d) $\text{Ca}(\text{HCO}_3)_2$

18) 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 _____

- (a) CaCO_3 (b) **$\text{Ca}(\text{OH})_2$** (c) Na_2CO_3 (d) NaHCO_3

19) 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

20) The name 'Blue John' is given to which of the following compounds ?

- (a) CaH_2 (b) **CaF_2** (c) $\text{Ca}_2(\text{PO}_4)_2$ (d) CaO

21) Formula of Gypsum is _____

- (a) **$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$** (b) $\text{CaSO}_4 \cdot 1/2 \text{H}_2\text{O}$. (c) $3\text{CaSO}_4 \cdot \text{H}_2\text{O}$ (d) $2\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

22) When CaC_2 is heated in atmospheric nitrogen in an electric furnace the compound formed is _____

- (a) $\text{Ca}(\text{CN})_2$ (b) **CaNCN** (c) CaC_2N_2 (d) CaNC_2

23) Among the following the least thermally stable is _____

- (a) K_2CO_3 (b) Na_2CO_3 (c) BaCO_3 (d) **Li_2CO_3**

24) The atomic and ionic radii of alkali metals _____ on moving down the group

- (a) **increases** (b) decreases (c) does not vary (d) decreases and then increases

25) _____ occurs in large amounts in sea water

- (a) NaCl (b) KCl (c) **both a and b** (d) neither a nor b

26) Ca is a good reducing agent, because _____.

- (a) Due to its has small size **(b) It has negative reduction potential.** (c) It is the first member of group 2
(d) It has one electron in outermost shell
- 27) What is the trend of formation of ionic compound in alkaline earth metals?
(a) Increases down the group (b) Decreases down the group (c) Decreases across the period
(d) Remains same in the periodic table
- 28) Quicklime is _____
(a) CaCO_3 **(b) CaO** (c) Ca(OH)_2 (d) CaSiO_3
- 29) _____ is used in purification and refining of sugar.
(a) Ca(OH)_2 **(b) CaO** (c) CaCl_2 (d) CaCO_3
- 30) The melting points of alkali metals _____
(a) increase down the group **(b) decrease down the group** (c) does not show a regular trend
(d) increases upto K and then decreases
- 31) The by-product of Solvay ammonia process is _____
(a) CO_2 (b) NH_3 **(c) CaCl_2** (d) CaCO_3
- 32) Rock salt is major source of _____
(a) lithium (b) potassium (c) francium **(d) sodium**
- 33) Which of the following fruits contain maximum of potassium?
(a) Grapes (b) Potatoes **(c) Bananas** (d) Mangoes
- 34) When beryllium carbide reacts with water, the product mainly formed is _____
(a) ethane **(b) methane** (c) acetylene (d) ethene
- 35) Which is used in dehydrating oils?
(a) Calcium (b) Magnesium (c) Beryllium (d) Radium
- 36) Which one of the following is known as natural insulator?
(a) $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ (b) $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ **(c) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$** (d) $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$
- 37) Which one of the following plays an important role in agriculture as a soil additive, conditioner and fertilizer _____
(a) Epsom **(b) Gypsum** (c) Quick lime (d) Salt petre
- 38) Which one of the following metal act as co-factor in phosphate transfer of ATP by enzymes?
(a) Calcium (b) Beryllium **(c) Magnesium** (d) Sodium
- 39) The ratio of charge on ion to its size is called _____.
(a) Electron density (b) Proton density **(c) Charge density** (d) Both (a) & (b)
- 40) The _____ ionisation enthalpies of _____ are very high.
(a) low, alkaline earth metals (b) 1st alkali metals **(c) 2nd alkali metals** (d) third, alkali metals
- 41) The wavelength of Cs is _____.
(a) 780.5 **(b) 455.5** (c) 766.5 (d) 589.2
- 42) Lithium reacts with Nitrogen to give _____.
(a) Li_3N_2 **(b) Li_3N** (c) Li_2N (d) Li_4N_2

- 43) In Li to Cs the ____ decreases.
(a) ionic character (b) covalent character **(c) stability** (d) solubility
- 44) Which metal is directly reacts with carbon?
(a) B **(b) Li** (c) Ba (d) Lu
- 45) In washing soda preparation, _____ is formed as by-product.
(a) CaCO_3 **(b) CaCl_2** (c) Ca(OH)_2 (d) CaHCO_3
- 46) Alkaline earth metals are _____.
(a) highly reactive **(b) less reactive** (c) soluble (d) none
- 47) Beryllium has _____.
(a) low density (b) high viscosity (c) high density (d) low radiacitive
- 48) Barium is used as a deoxidiser in the refining of _____.
(a) Ca **(b) Cu** (c) Zn (d) Au
- 49) When Gypsurm is heated to aboirt 300°F it produces _____.
(a) CaCO_3 (b) Ca SO_4 **(c) $\text{Ca SO}_4 \cdot 1/2 \text{H}_2\text{O}$** (d) $\text{Ca SO}_4 \cdot 5\text{H}_2\text{O}$
- 50) chlorophyll, contains this element which plays an important role in photosynthesis: _____.
(a) Mn **(b) Mg** (c) Cl (d) Ca