# The s-block Elements – Alkali Metals

Q.1. Which of the following alkali metal ions has lowest ionic mobility in aqueous solution ?

a) $Rb^+$
b) $Cs^+$
c) $Li^+$
d) $Na^+$

Q.2. In the synthesis of sodium carbonate, the recovery of ammonia is done by treating $NH_4Cl$ with $Ca(OH)_2$. The byproduct obtained in this process is

a) $CaCl_2$
b) NaCl
c) NaOH
d) $NaHCO_3$

Q.3. Solution of sodium metal in liquid ammonia is strongly reducing due to the presence of the following in solution

a) sodium hydride
b) sodium amide
c) sodium atoms
d) solvated electrons

Q.4. Lithium is strongest reducing agent among alkali metals due to which of the following factor?

a) Ionization energy
b) Electron affinity
c) Hydration energy
d) Lattice energy

Q.5.Which of the following has lowest thermal stability ?

a) $Li_2CO_3$
b) $Na_2CO_3$
c) $K_2CO_3$
d) $Rb_2CO_3$

Q.6. The products obtained on heating $LiNO_3$ will be :

a) $Li_2O + NO_2 + O_2$
b) $Li_3N + O_2$
c) $Li_2O + NO + O_2$
d) $LiNO_2 + O_2$

Q.7. $KO_2$ (potassium super oxide) is used in oxygen cylinders in space and submarines because it

a) absorbs $CO_2$ and increases $O_2$
b) eliminates moisture
c) absorbs $CO_2$
d) produces ozone.

Q.8. The pair of compounds which cannot exits together in solution is

a) $NaHCO_3$ and NaOH
b) $Na_2CO_3$ and $NaHCO_3$
c) $Na_2CO_3$ + NaOH
d) $NaHCO_3$ and NaCl

Q.9. Sodium chloride imparts a golden yellow colour to the bunsen flame . This can be interpreted due to

a) photosensitivity of sodium
b) low ionization potential of sodium
c) sublimation of metallic sodium to give yellow vapours
d) emission of excess of energy absorbed as a radiation in the visible region

Q.10. Which hydride is most stable ?

a) NaH
b) KH
c) LiH
d) CsH

Q.11. When the washing soda is heated

a) CO is released
b) CO + $CO_2$ is released
c) $CO_2$ is released
d) water vapours are released

Q.12. Which one of the alkali metals form only the normal oxide $M_2O$ on heating in air?

a) i
b) Na
c) K
d) Rb

Q.13. On dissolving moderate amount of sodium metal in liquid ammonia at low temperature, which one of the following does not occur?

a) Blue coloured solution is obtained
b) $Na^+$ ions are formed in the solution
c) Liquid $NH_3$ becomes good conductor of electricity
d) Liquid ammonia remain diamagnetic

Q.14.Which of the following has the highest melting point?

a) NaCl
b) NaF
c) NaBr
d) NaI

Q.15. Which of the following bicarbonates does not exist as solid?

a) $KHCO_3$
b) $NaHCO_3$
c) $LiHCO_3$
d) $CsHCO_3$

Q.16. Sodium metal cannot be stored under

a) benzene
b) kerosene oil
c) alcohol
d) toluene

Q.17. Sodium chloride imparts a golden yellow colour to the bunsen flame . This can be interpreted due to

a) low ionization potential of sodium
b) photosensitivity of sodium
c) sublimation of metallic sodium to give yellow vapours
d) emission of excess of energy absorbed as a radiation in

Q.18.The alkali metals have low melting point. Which of the following alkali metal is expected to melt if the room temperature rises to 30°C?

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

Q.19.Which of the following is known as fusion mixture?

a) Mixture of $Na_2CO_3$ + $NaHCO_3$
b) $Na_2CO_3.10H_2O$
c) Mixture of $K_2CO_3$ + $Na_2CO_3$
d) $NaHCO_3$

Q.20.Gun powder is

a) $KNO_3$+ Charcoal + S
b) $NaNO_3$ + $KNO_3$ + S
c) $NaNO_3$ + S
d) None of these

Q.21.On heating sodium metal in a current of dry ammonia gas the compound formed is

a) sodium nitrate
b) sodium hydride
c) sodium amide
d) sodium azide

Q.22.The chloride that can be extracted with ether is

a) NaCl
b) LiCl
c) $BaCl_2$
d) $CaCl_2$

Q.23.Which of the following statements is correct for $CsBr_3$?

a) It is a covalent compound.
b) It contains $Cs^{3+}$ and Br– ions.
c) It contains $Cs^+$ and $Br_3^-$
d) It contains $Cs^+$, and $Br^-$ and lattice $Br_2$ molecule.

Q.24.Sodium reacts with water less vigorously than potassium because :

a) it is more electronegative.
b) it is a metal.
c) it has higher atomic weight.
d) it is less electropositive.

Q.25.Sodium peroxide in contact with moist air turns white due to formation of :

a) $Na_2CO_3$
b) $Na_2O$
c) NaOH
d) $NaHCO_3$