1. Which of the following isn't considered as an alkaline earth metal?
(1) Be (2) Mg
(3) Ca (4) Sr

2. The alkali metals & their salts impart characteristic colour to an:
(1) Oxidising flame (2) Reducing flame
(3) Both a & b (4) None of these

3. The pair of most abundant alkali metals is?
(1) Li & Na (2) Na & K
(3) K & Rb (4) Na & Rb

4. When alkali metals react with liquid ammonia the solution obtained is
(1) Blue & non-conducting
(2) Blue & conducting
(3) Colourless & non-conducting
(4) Colourless & conducting

5. The products obtained on hydrolysis of superoxide
(1) $MO_2 + H_2O \longrightarrow M^+ + OH^- + H_2O_2$
(2) $MO_2 + H_2O \longrightarrow M^+ + OH^- + H_2O$
(3) $MO_2 + H_2O \longrightarrow M^+ + OH^- + H_2O_2 + O_2$
(4) $MO_2 + H_2O \longrightarrow M^+ + OH^-$

6. Milk of magnesia is:
(1) Suspension of $Mg(OH)_2$ in water
(2) Colloid of $Mg(OH)_2$ in water
(3) True solution of $Mg(OH)_2$ in water
(4) Pure $Mg(OH)_2$

7. The tendency to form halide hydrates in group 2 elements?
(1) increases down the group
(2) decreases down the group
(3) remains constant
(4) first decreases then increases down the group

8. For slowing down the process of setting of cement so that it gets sufficiently hard, the compound added is:
(1) Limestone (2) Dicalcium silicate
(3) Gypsum (4) Tricalcium aluminate

9. Which of the following alkali metal doesn't form ethynide on reaction with ethyne?
(1) Li (2) Na (3) K (4) Rb

10. Which of the following compound is thermally most stable?
(1) $LiNO_3$ (2) $NaNO_3$ (3) KNO_3 (4) $RbNO_3$

11. What is the order of relative degree of hydration
(1) $Cs^+(aq) > Rb^+(aq) > K^+(aq) > Na^+(aq) > Li^+(aq)$
(2) $Li^+(aq) > Na^+(aq) > K^+(aq) > Rb^+(aq) > Cs^+(aq)$
(3) $Na^+(aq) > K^+(aq) > Rb^+(aq) > Cs^+(aq) > Li^+(aq)$
(4) $Cs^+(aq) > Na^+(aq) > Rb^+(aq) > Li^+(aq) > K^+(aq)$

12. Least mobile ion is
(1) $[Be(H_2O)_n]^{+2}$ (2) $[Na(H_2O)_n]^+$
(3) $[Mg(H_2O)_n]^{+2}$ (4) $[Li(H_2O)_n]^+$

13. Which is most soluble in water ?
(1) CaF_2 (2) BaF_2
(3) SrF_2 (4) BeF_2

14. A solid compound X on heating gives CO_2 gas and a residue. When mixed with water it forms Y. On passing excess of CO_2 through Y in water a clear solution of Z is obtained. On boiling Z compound X is reformed. Compound X is
(1) $CaCO_3$ (2) Na_2CO_3
(3) K_2CO_3 (4) $Ca(HCO_3)_2$

15. An element of s-block forms an oxide of 'MO' type which is amphoteric in nature. Correct statetement regarding element is
(1) It's hydroxide is most soluble in its group hydroxides
(2) It forms peroxide
(3) Its sulphate is most soluble in its group sulphates
(4) Its carbonate is most stable in its group carbonates

16. Correct order is
(1) $LiH < NaH < CsH \longrightarrow$ ionic character
(2) $F–F < H–H < D–D \longrightarrow$ bond energy
(3) $NH_3 < H_2O < H_2O_2 \longrightarrow$ acidic character
(4) all the above

17. Which of the following reacts most vigrously with water ?
(1) Na (2) Be
(3) Li (4) Mg

18. Consider the following chemical reaction

$Z + 3LiAlH_4 \rightarrow X + 3LiF + 3AlF_3$

$X + H_2O \rightarrow Y + 6H_2$

$3X + O_2 \xrightarrow{\Delta} B_2O_3 + 3H_2O$

X, Y, Z are respectively

(1) B, BF_3, H_3BO_3

(2) B_2H_6, BF_3, H_3BO_3

(3) B_2H_6, H_3BO_3, BF_3

(4) $Na_2B_4O_7$, B_2H_6

19. Which of the following carbides produces propyne on reaction with water?

(1) CaC_2 (2) Be_2C

(3) Al_4C_3 (4) Mg_2C_3

20. Which one of the following reactions is not associated with the Solvay process of manufacture of sodium carbonate?

(1) $NaCl + NH_4HCO_3 \longrightarrow NaHCO_3 + NH_4Cl$

(2) $2NaOH + CO_2 \longrightarrow Na_2CO_3 + H_2O$

(3) $2NaHCO_3 \xrightarrow{\Delta} Na_2CO_3 + H_2O + CO_2$

(4) $NH_3 + H_2CO_3 \longrightarrow NH_4HCO_3$

21. The sequence of ionic mobility in aqueous solution is:

(1) $Rb^+ > K^+ > Cs^+ > Na^+$

(2) $Na^+ > K^+ > Rb^+ > Cs^+$

(3) $K^+ > Na^+ > Rb^+ > Cs^+$

(4) $Cs^+ > Rb^+ > K^+ > Na^+$

22. Thermal stability of hydrides of first group elements follows the order is:

(1) LiH > NaH > KH > RbH

(2) LiH > KH > NaH > RbH

(3) LiH > RbH > KH > NaH

(4) LiH > KH > RbH > NaH

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

(1) One mole of ammonia

(2) One mole of nitric acid

(3) Two moles of ammonia

(4) Two moles of nitric acid

24. The chloride that can be extracted with ether is:

(1) NaCl (2) LiCl (3) $BaCl_2$ (4) $CaCl_2$

25. In the manufacture of sodium hydroxide, byproduct obtained is:

(1) O_2 (2) Cl_2

(3) Na_2CO_3 (4) NaCl

26. The compound used in photography is:

(1) Na_2SO_5 (2) $Na_2S_2O_8$

(3) $Na_2S_2O_6$ (4) $Na_2S_2O_3$

27. The ashes of plants contain alkali metals, 90% of which is :

(1) Li (2) K (3) Na (4) Rb

28. The most electropositive element among the alkaline earth metals is :

(1) Be (2) Mg (3) Cs (4) Ba

29. Chile-salt peter is the ore of:

(1) Iodine (2) Bromine

(3) Sodium (4) Magnesium

30. Which one of the following electrolytes used in Down's process of extracting sodium metal?

(1) NaCl + KCl + KF (2) NaCl

(3) NaOH + KCl + KF (4) NaCl + NaOH

31. Sodium peroxide which is a yellow solid, when exposed to air becomes white due to formation of:

(1) H_2O_2 (2) Na_2O

(3) Na_2O and O_3 (4) NaOH and Na_2CO_3

32. Which of the following is best CO_2 absorber as well as source of O_2 in space capsule?

(1) KO_2 (2) K_2O_2

(3) KOH (4) LiOH

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

(1) Sodium hydride

(2) Sodium amide

(3) Sodium

(4) Solvated electrons

34. In the following sequence of reactions. Identify (E):

$$Na_2CO_3 + H_2O + CO_2 \longrightarrow (A) \xrightarrow{\Delta, ZnCl_2} (B)$$

$$\xrightarrow{\Delta} (C) + (D) \uparrow \xrightarrow[\text{excess}]{NaOH} (E)$$

(1) $NaHCO_3$ (2) Na_2O_2

(3) Na_2ZnO_2 (4) $ZnCO_3$

35. By adding gypsum to cement:

(1) Setting time of cement becomes less.

(2) setting time of cement increase

(3) Color of cement becomes light

(4) Shining surface is obtained

36. The reaction of Cl_2 with X gives bleaching powder. X is:

(1) CaO (2) $Ca(OH)_2$

(3) $Ca(OCl_2)$ (4) $Ca(ClO_3)_2$

37. Which of the following reaction/s are correct here?

(I) $B + NaOH \longrightarrow Na_3BO_3 + H_2$

(II) $P_4 + NaOH + H_2O \longrightarrow NaH_2PO_2 + PH_3$

(III) $S + NaOH \longrightarrow Na_2S_2O_3 + Na_2S + H_2O$

(1) I only

(2) III only

(3) II and III

(4) I, II, and III

38. Select the correct basic character:

(1) $NiO < MgO < SrO < K_2O < Cs_2O$

(2) $NiO < MgO < K_2O < SrO < Cs_2O$

(3) $MgO < NiO < SrO < K_2O < Cs_2O$

(4) $SrO < NiO < MgO < K_2O < Cs_2O$

S-BLOCK ELEMENTS ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**1**	**1**	**2**	**2**	**3**	**1**	**2**	**3**	**1**	**4**	**2**	**1**	**4**	**1**	**3**
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	**4**	**1**	**3**	**4**	**2**	**4**	**1**	**3**	**2**	**2**	**4**	**2**	**4**	**3**	**1**
Que.	31	32	33	34	35	36	37	38							
Ans.	**4**	**1**	**4**	**3**	**2**	**2**	**4**	**1**							