

S-BLOCK ELEMENTS

1. The reaction which does not liberate hydrogen gas is

[M-2012]

- 1) $\text{Al} + \text{NaOH (Conc)} \rightarrow$
- 2) $\text{C} + \text{NaOH (molten)} \rightarrow$
- 3) $\text{F}_2 + \text{NaOH (Conc)} \rightarrow$
- 4) $\text{Zn} + \text{NaOH (aq)} \rightarrow$

2. which metal ions play an important role in muscle contraction?

[M 2011]

- 1) K^+
- 2) Na^+
- 3) Mg^{+2}
- 4) Ca^{+2}

3. which of the following compound has the lowest melting point?

[AIPMT 2011]

- 1) CaCl_2
- 2) CaBr_2
- 3) CaI_2
- 4) CaF_2

4. which of the following statement is incorrect?

[AIPMT 2011]

- 1) pure sodium metal dissolves in liquid ammonia to give blue solution.
- 2) Aluminium reacts with excess of NaOH to give Al(OH)_3
- 3) NaOH reacts with glass to give sodium silicate.
- 4) NaHCO_3 on heating gives Na_2CO_3

5. The alkali halide that is soluble in Pyridine is

[PMT 2011]

- 1) NaCl
- 2) LiCl
- 3) KCl
- 4) CsI

6. property of alkaline earth metals that increases with their atomic number

[AIPMT2010]

- 1) solubility of their hydroxides in water
- 2) solubility of their sulphates in water
- 3) ionization energy
- 4) electro negativity

7. which of the following alkaline earth metal sulphate has hydration enthalpy higher than lattice enthalpy?

[AIPMT2010]

- 1) CaSO_4
- 2) BeSO_4
- 3) BaSO_4
- 4) SrSO_4

8. The best water soluble hydroxide is [PMT2008]

- 1) $\text{Ca}(\text{OH})_2$ 2) $\text{Mg}(\text{OH})_2$ 3) $\text{Ba}(\text{OH})_2$ 4) $\text{Sr}(\text{OH})_2$

9. sodium hydride when dissolved in water produces [DPMT 2008]

- 1) acidic solution 2) basic solution 3) neutral solution 4) cannot be predicted

10. which of the following has highest hydration energy? [AFMC 2009]

- 1) BaCl_2 2) SrCl_2 3) MgCl_2 4) CaCl_2

11. Glauber salt is [AFMC 2007]

- 1) $\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$ 2) $\text{MgSO}_4 \cdot 7 \text{H}_2\text{O}$ 3) $\text{Na}_2\text{SO}_4 \cdot 10 \text{H}_2\text{O}$ 4) $\text{FeSO}_4 \cdot 7 \text{H}_2\text{O}$

12. The molecular formula of Salt petre is [PMT2007]

- 1) KNO_3 2) NaNO_3 3) NaCl 4) Na_2SO_4

13. which compound is highly covalent? [AFMC2007]

- 1) LiF 2) LiCl 3) LiBr 4) LiI

14. Among alkali metals Caesium is the most reactive because [AFMC2008]

- 1) its incomplete shell is nearest to the nucleus
2) it has a single electron in the valence shell
3) it is the heaviest alkali metal
4) The outer most electron is most loosely bound than the outer most electron of the other alkali metals

15. Sodium is heated in air at 300°C to form X. X absorbs CO_2 and forms Na_2CO_3 and

Y. Which of the following is Y? (M 2005)

- 1) H_2 2) O_2 3) H_2O_2 4) O_3

16. Which of the following carbonates decomposes readily at low temperatures?

(2007 M)

- 1) Na_2CO_3 2) K_2CO_3 3) Li_2CO_3 4) Rb_2CO_3

17. Which of the following pair cannot exist together in solution? (E 2007)

- 1) $\text{NaHCO}_3 + \text{NaOH}$ 2) $\text{Na}_2\text{CO}_3 + \text{NaOH}$ 3) $\text{Na}_2\text{CO}_3 + \text{NaCl}$ 4) $\text{NaHCO}_3 + \text{NaCl}$

18. Which of the following is not correct? (2007 M)

- 1) In Nelson method of NaOH preparation, Cl_2 is liberated at anode.
2) With hot and concentrated NaOH , Cl_2 gas gives NaOCl .
3) NaOH reacts with white phosphorus giving phosphine.
4) NaOH is used in rayon industry.

19. Which of the following statements are correct for alkali metal compounds ? (E-2008)

- i) Superoxides are paramagnetic in nature.
- ii) The basic strengths of hydroxides increases down the group.
- iii) The conductivity of chlorides in their aqueous solutions decreases down the group.
- iv) The basic nature of carbonates in aqueous solutions is due to cationic hydrolysis.

- 1) (i), (ii) and (iii) only
- 2) (i) and (ii) only
- 3) (ii), (iii) and (iv) only
- 4) (iii) and (iv) only

20. The correct order of stability for the following superoxides is (M 2008)

- 1) $KO_2 > RbO_2 > CsO_2$
- 2) $RbO_2 > CsO_2 > KO_2$
- 3) $CsO_2 > RbO_2 > KO_2$
- 4) $KO_2 > CsO_2 > RbO_2$

21. Which of the following reactions does not liberate gaseous product ? (M-2006)

- 1) $AlCl_3 + NaOH \rightarrow$
- 2) $NaOH + P \text{ (white)} + H_2O \rightarrow$
- 3) $Al + NaOH \rightarrow$
- 4) $Zn + NaOH \rightarrow$

22. Consider the following reactions : (M-2006)

- I. $Al + NaOH + H_2O \rightarrow$
- II. $F_2 + NaOH \text{ (conc.)} \rightarrow$
- III. $NaOH + P \text{ (white)} + H_2O \rightarrow$

The correct set of reactions which give gaseous product is :

- 1) I, II and III
- 2) Only I and II
- 3) Only I and III
- 4) Only II and III

23. In the hardening stage of plaster of paris, the compound formed is (M-2004)

- 1) $CaSO_4$
- 2) Orthorhombic $CaSO_4 \cdot 2H_2O$
- 3) $CaSO_4 \cdot H_2O$
- 4) Monoclinic $CaSO_4 \cdot 2H_2O$

24. Epsom salt is (AFMC2006)

- 1) $MgSO_4 \cdot 7H_2O$
- 2) $CaSO_4 \cdot H_2O$
- 3) $MgSO_4 \cdot 2H_2O$
- 4) $BaSO_4 \cdot 2H_2O$

25. Match the following (M-2010)

List - I

List - II

- A) Dolomite
 - B) Fluorapatite
 - C) Phenacite
 - D) Celestite
- I) $CaCO_3$
 - II) $2BeO \cdot SiO_2$
 - III) $SrSO_4$
 - IV) $CaCO_3 \cdot MgCO_3$
 - V) $3Ca_3(PO_4)_2 \cdot CaF_2$

The correct answer is

- | A | B | C | D | A | B | C | D |
|--------|-----|----|---|-------|----|----|-----|
| 1) IVV | III | II | | 2) V | IV | II | III |
| 3) IVV | I | II | | 4) IV | V | II | III |

26. Solvay process is used in the manufacture of (E-2010)

- 1) K_2CO_3 2) $KHCO_3$ 3) Na_2CO_3 4) $CaCl_2$

27. What are the products formed when Li_2CO_3 undergoes decomposition? (E-2002)

- 1) $Li_2O_2 + CO$ 2) $Li_2O + CO$ 3) $Li_2O + CO_2$ 4) $LiO_2 + CO$

28. $NaNO_3$ on heating gives

[JIPMER2006]

- 1) O_2 2) NO_2 3) $O_2 + NO_2$ 4) none of these

29. Magnesium contains

[AFMC2006]

- 1) $Mg + Al$ 2) $Mg + Mn$ 3) $Mg + Fe$ 4) $Mg + Cu$

30. Baking powder is

[AFMC2005]

- 1) $NaHCO_3$ 2) Na_2CO_3 3) $NaHCO_3 \cdot 6H_2O$ 4) $Na_2CO_3 \cdot 10H_2O$

KEY

- 1) 3 2) 4 3) 3 4) 2 5) 2 6) 1 7) 2 8) 3 9) 2 10) 3
11) 3 12) 2 13) 4 14) 4 15) 2 16) 3 17) 1 18) 2 19) 2 20) 3
21) 1 22) 1 23) 4 24) 1 25) 4 26) 3 27) 3 28) 1 29) 1 30) 1