

Single Correct Answer Type:

- Which of the following carbonates is least soluble in water
(A) Li_2CO_3 (B) Na_2CO_3 (C) K_2CO_3 (D) Rb_2CO_3
- $\text{NaNO}_3 \xrightarrow{500^\circ\text{C}}$; $\text{NaNO}_3 \xrightarrow{800^\circ\text{C}}$;
Which of the following is common product in above reactions
(A) Na_2O (B) N_2 (C) NO_2 (D) O_2
- Solution of 'Na' in liq. NH_3 is a powerful reducing agent. The solution is itself unstable due to
(A) Nitride formation (B) Amide formation
(C) Nitrogen formation (D) Imide formation
- Substance which is not required in solvay process
(A) SO_2 (B) NH_3 (C) CO_2 (D) NaCl
- Metal which does not react with cold water
(A) Mg (B) Na (C) Ca (D) Ba
- Which of the following does not produce any gaseous product when reacts with water?
(A) Ca_3N_2 (B) CaC_2 (C) CaO (D) Ca_3P_2
- Dark blue solution of alkali metal in liq. NH_3 produce _____ on evaporation of NH_3
(A) Metal (B) Metal amide (C) $[\text{M}(\text{NH}_3)_6]^+$ (D) Hexa ammoniated metal
- Hard water does not contain
(A) Ca^{2+} with HCO_3^- (B) Mg^{2+} and SO_4^{2-} (C) Mg^{2+} with Cl^- (D) Ca^{2+} with CO_3^{2-}
- The main oxides formed on combustion of Li, Na & K in excess of air respectively
(A) Li_2O , Na_2O_2 & KO_2 (B) Li_2O , Na_2O & KO_2
(C) LiO_2 , Na_2O_2 & K_2O (D) Li_2O_2 , Na_2O_2 & KO_2
- Which salt contains anion with angular shape?
(A) KI_3 (B) KN_3 (C) K_2S_3 (D) K_2O_2
- Which one of the following is an oxide (normal)?
(A) CsO_2 (B) SiO_2 (C) KO_2 (D) BaO_2
- The commercial name of CaO is
(A) quick lime (B) milk of lime (C) lime stone (D) slaked lime
- The number of anti penultimate electrons in 'Na' atom
(A) 1 (B) 2 (C) 8 (D) 10
- BaC_2 when heated with N_2 gas, produces
(A) BaCN_2 (B) Ba_3N_2 (C) $\text{Ba}(\text{CN})_2$ (D) Ba_2C_3
- Which of the following is the similar product of electrolysis of fused NaCl & electrolysis of aqua. NaCl ?
(A) Na (B) NaOH (C) Cl_2 (D) H_2

16. Which of the following gases has least solubility in aq. NaOH solution
 (A) CO₂ (B) SO₂ (C) H₂S (D) NH₃
17. Which of the following is an incorrect matching
 (A) Hydrolith - CaH₂ (B) Bleaching powder - Ca(OCl)₂
 (C) Epson salt - MgSO₄·7H₂O (D) Gypsum - CaSO₄·2H₂O
18. Which of the following does not contain 'Mg'?
 (A) Carnalite (B) Dolomite (C) Magnetite (D) Magnesite
19. Diagonal relationship does not exist between the pair of
 (A) Li, Be (B) Li, Mg (C) Be, Al (D) B, Si
20. Which of the following order is not correct for the polarising power of cations?
 (A) Mg²⁺ > Na⁺ (B) Mg²⁺ > Ca²⁺ (C) Al³⁺ > Mg²⁺ (D) Ba²⁺ > Mg²⁺

Numerical Based:

21. On heating MgSO₄·7H₂O, the following changes take place

$$\text{MgSO}_4 \cdot 7\text{H}_2\text{O} \xrightarrow{150^\circ\text{C}} \text{MgSO}_4 \cdot x\text{H}_2\text{O} \xrightarrow{200^\circ\text{C}} \text{MgSO}_4 \cdot y\text{H}_2\text{O}$$
 the sum of x + y is
22. An alkali metal chloride crystallises as MCl·xH₂O. Atomic number of M is Z. Then Z - x ⇒ ?
23. In two alkaline earth metal salts, one gives apple green and other gives brick red in flame test. The sum of atomic numbers of these metals is 'x'. Then the value of $\frac{x+4}{16}$ is
24. Out of Be, Mg, Ca, Sr & Ba number of elements which do not impart any colour to the flame _____
25. The number of moles of gas produced on complete decomposition of 2 moles MgCO₃ is

KEY

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|-------|-------|-------|-------|-------|
| 1. A | 2. D | 3. B | 4. A | 5. A |
| 6. C | 7. D | 8. D | 9. A | 10. C |
| 11. B | 12. A | 13. B | 14. C | 15. C |
| 16. D | 17. B | 18. C | 19. A | 20. D |
| 21. 1 | 22. 1 | 23. 5 | 24. 2 | 25. 2 |