

21. Which statement is incorrect?
 (a) $\text{Ni}(\text{CO})_4$ -tetrahedral, paramagnetic
 (c) $\text{Ni}(\text{CO})_4$ -tetrahedral, diamagnetic
 (b) $[\text{Ni}(\text{CN})_4]^{2-}$ -square planar, diamagnetic
 (d) $[\text{NiCl}_4]^{2-}$ -tetrahedral, paramagnetic
22. In Aluminothermic process role of Aluminium is
 a, Flux
 b, Oxidising agent
 c, Reducing agent
 d, Slag
23. Graphite is a good conductor of electricity because it contains:
 (a) Mobile electrons
 (b) Bonded electrons
 (c) Strong C=C bonds
 (d) Strong C-C bonds
24. Zeolites are
 a, $\text{K}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot x\text{SiO}_2 \cdot y\text{H}_2\text{O}$
 c, $\text{K}_2\text{O} \cdot \text{Al}_2\text{O}_3$
 b, $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot x\text{SiO}_2 \cdot y\text{H}_2\text{O}$
 d, Both a, and c,
25. In which method pure Germanium and silicon are refined
 a, electrolytic refining
 b, Zone refining
 c, Van-Arkel method
 d, Mond process
26. Which is used to increase the efficiency of solar cells?
 a, Silver nanoparticles
 c, Platinum nanoparticles
 b, Gold nanoparticles
 d, All of these
27. Type of bond in diborane are
 a, two centre-two electron bond
 c, three centre-two electron bond
 b, two centre-three electron bond
 d, both a, and c
28. What is X in the following reaction? $\text{SiCl}_4 + \text{H}_2\text{O} \rightarrow \text{X} + \text{HCl}$
 (a) H_4SiO_4
 (b) SiH_4
 (c) $(\text{SiOOH})_2$
 (d) $\text{Si}(\text{ClO}_4)_4$
29. Which of the following is colourless?
 (a) $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$
 (b) $[\text{Ti}(\text{NO}_3)_4]$
 (c) $[\text{Cr}(\text{NH}_3)_6]^{2+}$
 (d) $[\text{Fe}(\text{CN})_6]^{4-}$
30. $\text{K}_2\text{Cr}_2\text{O}_7$ on heating with aqueous NaOH gives
 (a) $\text{Cr}_2\text{O}_7^{2-}$
 (b) $\text{Cr}(\text{OH})_2$
 (c) CrO_4^{2-}
 (d) $\text{Cr}(\text{OH})_3$
31. Magnetic moment 2.84 B.M. is given by (At. nos. Ni=28, Ti=22, Cr=24, Co=27)
 (a) Cr^{2+}
 (b) Co^{2+}
 (c) Ni^{2+}
 (d) Ti^{3+}
32. $[\text{Co}(\text{NH}_3)_5\text{NO}_3]\text{SO}_4$ and $[\text{Co}(\text{NH}_3)_5\text{SO}_4]\text{NO}_3$ exhibit
 (a) coordinate isomerism
 (c) ionization isomerism
 (b) linkage isomerism
 (d) optical isomerism
33. The reaction of aqueous KMnO_4 with H_2O_2 in acidic condition gives
 (a) Mn^{4+} and O_2
 (b) Mn^{2+} and O_2
 (c) Mn^{2+} and O_3
 (d) Mn^{4+} and MnO_2
34. Alumina is a water purifier because it
 (a) Gives taste
 (c) Coagulates the impurities
 (b) Softens hard water
 (d) Destroys the pathogenic bacteria
35. Straight line silica is obtained by hydrolysis of _____
 a, (RSiOCl_3)
 b, (R_3SiCl)
 c, $(\text{R}_2\text{SiCl}_2)$
 d, All the above
36. By which method highly reactive metal is extracted from its ore?
 a, using Hydrogen
 c, Electrochemical method
 b, using Aluminium
 d, Using Carbon
37. Silica is
 a, Acidic flux
 b, Slag
 c, Basic flux
 d, Slag & acidic flux
38. Moderator in nuclear reactor is
 a, ${}_3\text{B}^{11}$
 b, ${}_3\text{B}^{10}$
 c, ${}_3\text{B}^{12}$
 d, ${}_3\text{B}^8$
39. Which one of the following forms, with an excess of CN^- , a complex having coordination number two?
 (a) Ni^{2+}
 (b) Cu^+
 (c) Ag^+
 (d) Fe^{2+}
40. Silica is soluble in:
 (a) HF
 (b) HNO_3
 (c) H_2SO_4
 (d) HCl
41. Structure of Fullerene is
 a, Cage like structure
 b, Pyramid shape
 c, Honeycomb crystalline lattice
 d, Tetrahedral
42. The compounds of boron and hydrogen are collectively called
 (a) Boranes
 (b) Boracites
 (c) Borazoles
 (d) Diborane
43. Compare the density
 a, Graphite = Diamond
 b, Graphite > Diamond
 c, Graphite < Diamond
 d, Graphite \geq Diamond

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