



CHEMISTRY

BOOKS - SAI CHEMISTRY (TELUGU ENGLISH)

d AND f BLOCK ELEMENTS

Mcq S

1. When $AgNO_3$ solution is added in excess to 1M solution of $CoCl_3 \cdot xNH_3$ one mole of AgCl is formed ? What is the value if 'X'?

A. 1

B. 4

C. 3

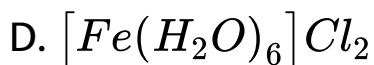
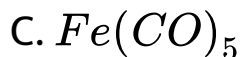
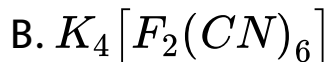
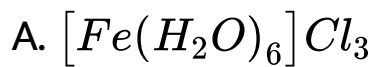
D. 2

Answer: (a)



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2. In which of the following coordination compounds, the central metal ion is in Zero oxidation state ?



Answer: (c



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3. The percentage of lanthanides and iron, respectively, in Misch metal are

A. 50, 50

B. 75 , 25

C. 90, 10

D. 95, 5

Answer: (d)



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4. Which one of the following lanthanic ions does not exhibit paramagnetism ?

A. Lu^{3+}

B. Ce^{3+}



Answer: (a)



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5. The increasing order of field strength of ligands is



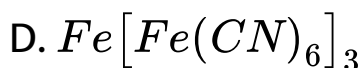
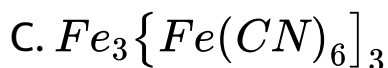
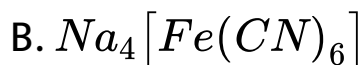
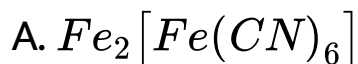


Answer: (b)



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6. Which one of the following prussian blue colour ?



Answer: (d)



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7. A coordiante complex contains Co^3 , Cl and NH_3 . When dissolved in water , one mole of this complex gave a total of 3 moles of ions . The complex is

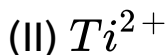
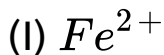
- A. $[Co(NH_3)_6]Cl_3$
- B. $[Co(Nh_3)_5Cl]Cl_2$
- C. $[Co(NH_3)_4]Cl_2]Cl$
- D. $[Co(NH_3)_3Cl_3]$

Answer: (b)



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8. Identify the order in which the spin only magnetic moment (in BM) increases for the following four ions



A. I,II,IV,III

B. IV,I,II,III

C. III,IV,I,II

D. III,II,IV,I

Answer: (d)



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9. Which of the following is a correct statement ?

A. Aquuous solution of Cu^+ and Zn^{2+} are
colourless

B. Aqueous solution of Cu^{2+} and Zn^{2+} are colourless

C. Aqueous solution of Fe^{3+} is green in colour

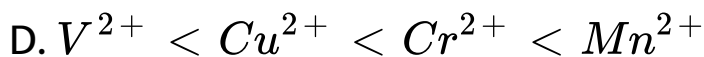
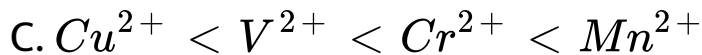
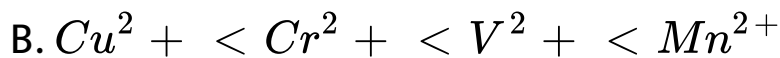
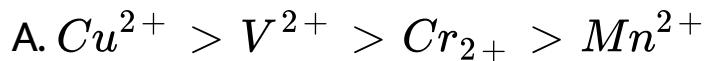
D. Aqueous solution of MnO_4^- is colourless

Answer: (a)



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10. Which one of the following sets correctly represents the increase in the paramagnetic property of the ions ?

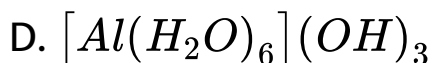
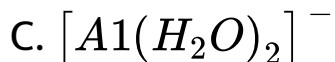
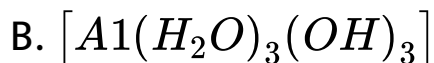
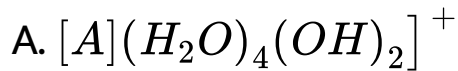


Answer: c



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11. Aluminium reacts with NaOH and forms compound 'X'. If the coordination number of aluminium in 'X' is 6, the correct formula of X is



Answer: (c



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12. 1.5 g of $CdCl_2$ was found to contain 0.9 g of Cd. Calculate the atomic weight of Cd.

A. 118

B. 112

C. 106.5

D. 53.25

Answer: (c



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13. $[Co(NH_3)_5SO_4]Br$ and $[Co(NH_3)Br]SO_4$

are a pair of Isomers

A. (a) ionisation

B. (b) ligand

C. coordination

D. (d) hydrate

Answer: (a)



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14. Which of the following pair of transition metal ions, have the same calculate values of magnetic moment ?

A. Ti^{2+} and V^{2+}

B. Fe^{2+} and Cu^{2+}

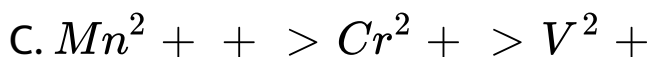
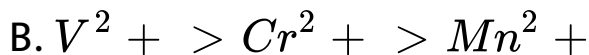
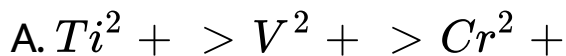


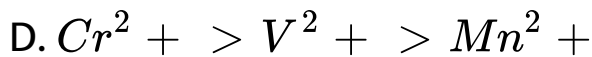
Answer: (c



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15. What is the correct order of spin only magnetic moment (in BM) of Mn^{2+} and V^{2+} ?





Answer: (c)



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16. A complex compound of Co^{3+} with molecular formula $CoCl_x \cdot yNH_3$ gives a total of 3 ions when dissolved in water. How many Cl^- ions when the primary and secondary valency in this complex ?

A. 3

B. 1

C. 4

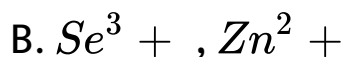
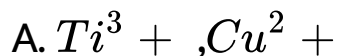
D. Zero

Answer: (b)



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17. Which of the following pairs of ions are colourless?



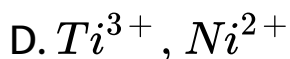
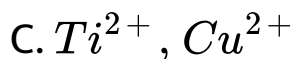
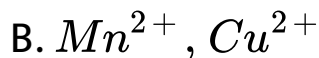
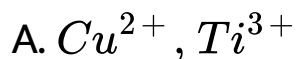


Answer: (b)



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18. Which of the following pairs of ions has same paramagnetic character?



Answer: (a)



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19. Ferrous ion changes to X ions , on reacting with acidified hydrogen peroxide . The number of d-electrons present in X and its magnetic moment (in BM) are , respectively

A. 6 and 6.93

B. 5 and 5.92

C. 5 and 4.9

D. 4 and 5.92

Answer: (b)



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20. The calculated magnetic moment (in Bohr magnetons) of Cu^{2+} ion is

A. 1.73

B. Zero

C. 2.6

D. 3.4

Answer: (a)



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21. Iron sulphide is heated in air to form A, an oxide of sulphur. A is dissolved in water to give an acid. The basicity of this acid is

A. 2

B. 3

C. 1

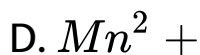
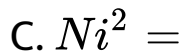
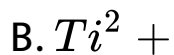
D. Zero

Answer: (a)



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22. Which one of the following ions is colourless in aqueous solution ?

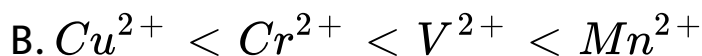
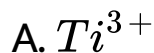


Answer: (d)



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23. Which one of the following ions is colourless in aqueous solution ?



Answer: (d)



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24. Which one of the following ions is colourless in aqueous solution ?

A. Ti^{3+}

B. Sn and Zn

C. Cu and Sn

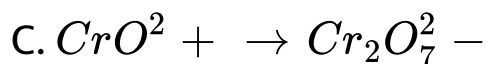
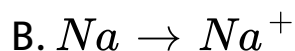
D. Cu and Zn

Answer: (d)



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25. Which one of the following ions is colourless in aqueous solution ?

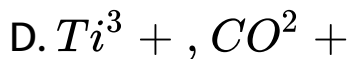
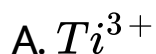


Answer: (c



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26. Which one of the following ions is colourless in aqueous solution ?



Answer: (b)



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27. The oxidation dissove in excess of NH_4OH .

The cation present in this solution is

A. (+)6

B. (+)7

C. (+)5

D. (+)8

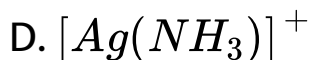
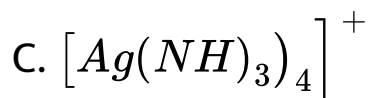
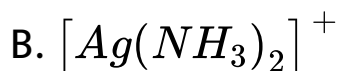
Answer: (b)



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28. Silver chlorides dissolve in excess of NH_4OH .

The cation present in this solution is

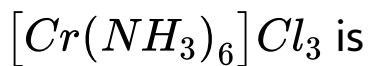


Answer: (b)



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29. The effective atomic number of Cr in



A. 35

B. 36

C. 27

D. 33

Answer: (d)



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30. Which one of the following reacts with concentrated sulphuric acid ?

A. Au

B. Ag

C. Pt

D. Pb

Answer: (b)



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31. Silver containing lead as an impurity is removed by

A. poling

B. cupellation

C. lavigation

D. distillation

Answer: (b)



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32. Which of the following sets of element does not belong to transition element sset?

A. Fe, Co, Ni

B. Cu, Ag, Au

C. Ti, Zr, Hf

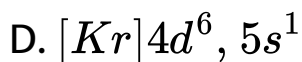
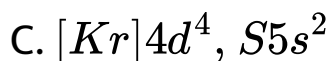
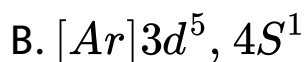
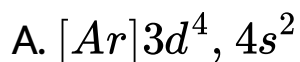
D. Ga, In, Tl

Answer: (d)



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33. The electronic configuration of chromium (Z=24) is



Answer: (b)



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34. When $AgNO_3$ solution is added in excess to 1M solution of $CoCl_3 \cdot 6NH_3$ one mole of $AgCl$ is formed ? What is the value of 'X'?

- A. silver is more electropositive than zinc
- B. Zinc forms a complex readily with cyanide
- C. Zinc forms a complex readily with cyanide
- D. Both Zn^{2+} and Ag^+ ions have d^{10} electronic configuration

Answer: (c)



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35. Hg stick to the surface of the glass , When it comes in contact with



Answer: (b)



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36. The element that can exhibit highest number of oxidation state amongst the following , is

A. V

B. Mn

C. Ni

D. Co

Answer: (b)



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37. The number of moles of $AgCl$ precipitated when excess $AgNO_3$ is mixed one mole of $[Cr(NH_3)_4Cl_2]Cl$, is

- A. 0
- B. (1.0)
- C. (2.0)
- D. (3.0)

Answer: (b)



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38. The metal that forms a self protecting film of oxide to prevent corrosion, is

A. Cu

B. Al

C. Pt

D. Au

Answer: (b)



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39. An example of a non - transitional element is

A. cobalt

B. lead

C. cerium

D. silver

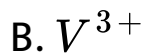
Answer: (b)



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40. The ion that is likely to be colourless in aqueous solution, is

A. Ti^{3+}

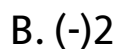
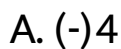


Answer: (d)



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41. The oxidation state of Mo in $(MO_2Cl_8)^{4-}$ ion is



C. (+)6

D. (+)2

Answer: (d)



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42. When the same amount of zinc is treated with excess if H_2SO_4 and with excess if NaOH, the ratio of the volumes of H_2 evolved , is

A. 3:2

B. 1:2

C. 2:1

D. 1:1

Answer: (d)



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43. The reagent used for concentrating silver ore ,
is

A. HI

B. HNO_3

C. KCN

D. NH_3

Answer: (c



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44. Which of the following alloys contains Cu and Zn ?

A. Bronze

B. Brass

C. Gun metal

D. Type metal

Answer: (b)



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45. The 4 f level is successively filled up in

A. alkali metals

B. rare gases

C. lanthanides

D. actinides

Answer: (c)



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46. Silver is extracted from its

A. Sulphide ore

B. oxide ore

C. nitrate ore

D. halide ore

Answer: (a)



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47. Oxides of iron in the blast furnace get reduced due to the action of On haemattie .

A. Carbon monoxide

B. aluminium

C. carbon

D. carbon dioxide

Answer: (a)



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48. The paramagnetic character of transition metals is due to the presence of unpaired electron in

A. s-orbital

B. p-orbital

C. d-orbital

D. f-orbital

Answer: (c



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49. Transition element exhibit variable valency on account of d- orbitals .

- A. completely filled
- B. empty
- C. incompletely filled
- D. both (b) and (c)

Answer: (c



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50. Inner transition element exhibit different coloured compound on account of unfilled are

A. s- orbital

B. p- orbital

C. d-orbital

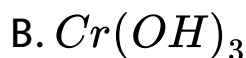
D. f-orbital

Answer: (d)



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51. A solution of $Cr(NO_3)_3$ slowly turns green when conc. HCl is added due to the formation of



D. None of these

Answer: (c



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52. Cuprous ion is colourless while cupric ion is coloured because

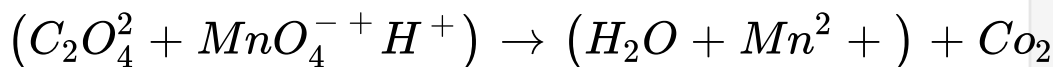
- A. both have unpaired electrons in the d-orbital
- B. Cuprous ion has incomplete d-orbitals and cupric ion has incomplete d-orbitals
- C. both ion has incomplete d-orbital and cupric ion has complete d-orbitals
- D. both have unpaired electrons in the d-orbital

Answer: (b)

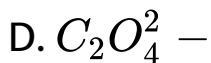
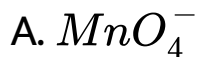


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53. In the reaction ,



, the reductant is



Answer: (d)



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