439.	Which of the following (A) Mg ²⁺	g has the maximum n (B) Ti ³⁺	umber of unpaired ele (C) V ³⁺	ectrons? (D) Fe ²⁺	
440.	Which of the following $= 26$)	ions has a magnetic m	oment 5.93 BM? (At. n	io. V = 23, Cr = 24, Mn = 25, Fe	
	(A) Cr ²⁺	(B) V ³⁺	(C) MN ²⁺	(D) Fe ²⁺	
441.	Assign the hybridization, shape and magnetic moment of $K_2[Cu(CN)_4]$.(A) dsp², square planar, 1.73 BM(B) sp³, tetrahedral, 1.73 BM(C) dsp², square planar, 2.44 BM(D) sp³, tetrahedral, 2.44 BM				
442.	IUPAC name of the compound K_3 [Fe(CN) $_3$ CO] is (A) Potassium pentacyanocarbonylferrate (III) (B) Potassium carbonylpentacyanoferrate (III) (C) Potassium pentacyanocarbonylferrate (II) (D) Potassium carbonylpentacyanoferrate (II)				
443.	The aqueous solution (A) $Zn(NO_3)_2$	n of the following salt (B) LiNO ₃	s will be coloured in t (C) Co(NO ₃) ₂	the case of (D) Potash alum	
444.	which one of the fol	one of the following high spin complexes has the largest C. F. S. E. (crystal field			
	stabilization energy) (A) $[Cr(H_2O)_6]^{2+}$? (B) [Cr(H ₂ O) ₆] ³⁺	(C) [Mn(H ₂ O) ₆] ²⁺	(D) [Mn(H ₂ O) ₆] ³⁺	
445.	The equivalent weight (A) Mn ₂ O ₃	ht of MnSO ₄ is half of (B) MnO ₂	its molecular weight (C) MnO₄⁻	when it is converted to (D) MnO_4^{2-}	
446.	۲he number of chloride ion produced by complex tetraamminechloroplatinum(IV) chloride in an				
	aqueous solution is (A) 1	(B) 2	(C) 3	(D) 4	
447.	The compounds whic (A) $[Cu(NH_3)_4]Cl_2$	h does not show para (B) [Ag(NH ₃) ₂]Cl	magnetism is (C) NO	(D) NO ₂	
448.	Amongst the following ions which one has the highest paramagnetism? (A) $[Cr(H_2O)_6]^{3+}$ (B) $[Fe(H_2O)_6]^{2+}$ (C) $[Cu(H_2O)_6]^{2+}$ (D) $[Zn(H_2O)_6]^{2+}$				
449.	Which one of the follo are monodentate. (A) (MA_4B_2)	owing octahedral com (B) (MA ₅ B)	olexes will not show g (C) (MA ₂ B ₄)	eometric isomerism ? A and B (D) (MA ₃ B ₃)	

- **450.** The formula of tetrachloro diamine platinum (IV) is (A) $[Pt(NH_3)_2]Cl_4$ (B) $[Pt(NH_3)_2Cl_4]$ (C) $[Pt(NH_3)_2Cl_2]Cl_2$ (D) $K_4[Pt(NH_3)_2Cl_4]$
- **451.** Which of the following statements is not correct? (A) The complexes $(NiCl_{4})^{2-}$ and $[Ni(CN)_{4}]^{2-}$ differ in geometry. (B) The complexes $(NiCl_4)^{2-}$ and $[Ni(CN)_4]^{2-}$ differ in primary valencies of nickel. (C) Nickel ion has the same secondary valency in the complexes $(NiCl_{4})^{2-}$ and $[Ni(CN)_{4}]^{2-}$. (D) The complexes $(NiCl_{4})^{2-}$ and $[Ni(CN)_{4}]^{2-}$ differ in the state of hybridization of nickel. 452. Both Co³⁺ and Pt⁴⁺ have a coordination number of six. Which of the following pairs of complexes will how approximately the same electrical conductance for their 0.0001 M aqueous solutions? In the complexes $[Fe(H_2O)_6]^{3+}$, $[Fe(CN)_6]^{3-}$, $[Fe(C_2O_4)_3]^{3-}$ and $[FeCl_6]^{3-}$ more stability is shown 453. bv (A) $[Fe(H_2O)_6]^{3+}$ (B) $[Fe(C_2O_4)_3]^{3+}$ (C) $[FeCI_6]^{3-}$ (D) $[Fe(CN)_6]^{3-}$ **454.** From the stability constant (hypothetical values) given below, predict which is the strongest ligand. $K = 9.5 \times 10^{8}$ (A) $Cu^{2+} + 4H_2O \rightleftharpoons [Cu(H_2O)_4]^{2+}$ (B) $Cu^{2+} + 2en \rightleftharpoons [Cu(en)_{2}]^{2+}$ $K = 3.0 \times 10^{15}$ (C) $Cu^{2+} + 4en \rightleftharpoons [Cu(CN)_{4}]^{2+}$ $K = 2.0 \times 10^{27}$ (D) $Cu^{2+} + 4NH_3 \rightleftharpoons [Cu(NH_3)_4]^{2+}$ $K = 4.5 \times 10^{11}$ **455.** Which of the following complex ions will not show optical activity? (A) [Co(en)(NH₃),Cl₃]⁺ (B) $[Cr(NH_3)_4Cl_3]^+$ (C) $[Pt(Br)(Cl)(I)(NO_2)(Py)NH_3]$ (D) cis – $[Co(en)_{2}Cl_{2}]^{+}$ **456.** The number of d-electrons in $[Cr(H_2O)_6]^{3+}$ (at. no. of Cr = 24) is (D) 5 (A) 2 (B) 3 (C) 4 The number of ions produced from one molecule of [Pt(NH₃)₅Br]Br₃ in the aqueous solution will 457. he (A) 4 (C) 6 (B) 5 (D)7
- **458.** The stability constants of the complexes formed by a metal ions (M^{2+}) with NH_3 , CN^- , H_2O and 'en' are of the order of 10^{11} , 10^{27} , 10^{15} and 10^8 respectively. Then (A) en is the strongest ligand.
 - (B) These values cannot predict the strength of the ligand.
 - (C) CN⁻ is the strongest ligand.
 - (D) All ligands are equally strong.
- **459.** The complex with spin only magnetic moment of ≈ 4.9 B. M. is (A) $[Fe(CN)_6]^{3+}$ (B) $[Fe(H_2O)_6]^{3+}$ (C) $[Fe(CN)_6]^{4-}$ (D) $[Fe(H_2O)_6]^{2+}$
- **460.** The value of magnetic moment for a complex ion is 1.73 BM. The complex ion is (A) $[Mn(CN)_6]^{4-}$ (B) $[Co(NH_3)_6]^{3+}$ (C) $(MnF_6)^{3-}$ (D) $[Fe(CN)_3NO]^{2-}$
- **461.** A metal M which is not affected by strong acids like conc. HNO_3 , conc. H_2SO_4 and conc. solution of alkalies like NaOH, KOH forms MCl_3 which finds use for toning in photography. The metal M is-
 - (A) Ag (B) Hg (C) Au (D) Cu

462. Why is $[Ni(en)_3]^{2+}$ nearly 10¹⁰ times more stable than $[Ni(NH_3)_6]^{2+}$?

(A) NH_3 is the weakest ligand

- (B) 'en' is a chelating ligand and forms thermodynamically more stable complexe
- (C) Six NH₃ ligands cause steric hindrance around the Ni²⁺ centre.
- (D) NH₃ evaporates easily and causes instability to the $[Ni(NH_3)_6]^{2+}$ complex.

463. Find out the wrong statement for an octahedral complex.

- (A) An ion with d⁵ configuration has one unpaired electron both in weak and strong fields.
- (B) A central metal ion with d⁸ configuration has two unpaired electrons
- (C) An ion with d⁶ configuration is diamagnetic in a strong field.

(D) In d^4 , d^5 , d^6 and d^7 configuration, weak and strong field complexes have different numbers of unpaired electrons.

- **464.** What is the effective atomic number, (EAN) of Cr and /or Cu in their complexes, $[Cr(CN)_6]^{3-}$ and $[Cu(CN)_4]^{3-}$? (Atomic numbers : Cr = 24, Cu = 29)
 - (A) 36 for both
 - (C) 36 for Cr in [Cr(CN)₆]³⁻
- (B) 36 for neither
- (D) 36 for Cu in $[Cu(CN)_4]^{3-}$