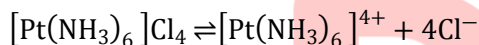


Topic :- Coordination Compounds

1 **(b)**
 $[(C_6H_5)_3P]_3RhCl$ or $[(Ph_3P)_3RhCl]$ is a Wilkinson's catalyst, the most widely used of all catalysts for homogeneous hydrogenation.

2 **(c)**
 Halogens attack double bond of C_6H_6 in presence of light. In absence of light as well as in presence of only $AlCl_3$, S_E reactions are noticed.

3 **(d)**
 $[Pt(NH_3)_6]Cl_4$ complex gives five ions in the solution.

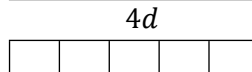
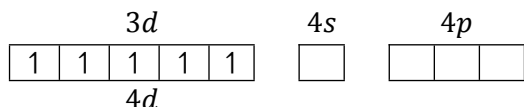


4 **(a)**
 The EAN for Cu in $[Cu(NH_3)_4]^{2+}$ is 35 and not 36, the next inert gas at. No.

5 **(a)**
 $1 \times 3 + a + 6 \times (-1) = 0, \therefore a = +3$

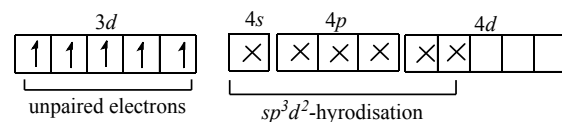
6 **(a)**
 In $NaOC_2H_5$, Na is attached to O-atom.

7 **(b)**
 In $[Mn(H_2O)_6]^{2+}$, Mn is present as Mn^{2+} or Mn (II), so its electronic configuration
 $= 1s^2, 2s^2 2p^6, 3s^2 3p^6 3d^5$



In $[Mn(H_2O)_6]^{2+}$, the coordination number of Mn is six, but in presence of weak field ligand, there will be no pairing of electrons in $3d$. So, it will form high spin complex due to presence of five unpaired electron.

In $[Mn(H_2O)_6]^{2+}$

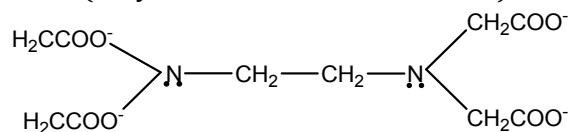


10 **(b)**
 Due to aromatic nature; $C_6H_5CH_2OH$ is exception and does not burn with sooty flame.

11

(c)

EDTA (Ethylenediaminetetraacetic acid)



It is hexadentate (6 electron pairs)

that's why for octahedral complex only one EDTA is required.

13

(c)

It is Friedel-Crafts reaction.

14

(a)

Resonance in phenoxide ion makes it more stable. More stable is ion less stable is phenol or more is acidic nature.

15

(c)Triethylenediamine cobalt(III) chloride is $[\text{Co}(\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2)_3]\text{Cl}_3$; $\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2$ is bidentate ligand and thus, coordination no. = $3 \times 2 = 6$.

17

(c)

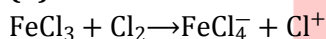
CO is a neutral ligand, so the oxidation state of metal in metal carbonyls is always zero.



$$x + (0 \times 4) = 0$$

$$x = 0$$

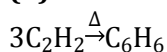
18

(b)

19

(a) $[\text{Ni}(\text{CN})_4]^{2-}$ has dsp^2 -hybridization while $[\text{Ni}(\text{Cl}_4)^{2-}]$ and $[\text{Ni}(\text{CO})_4]$ have sp^3 -hybridization.

20

(b)

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	B	C	D	A	A	A	B	B	B	B
Q.	11	12	13	14	15	16	17	18	19	20
A.	C	B	C	A	C	C	C	B	A	B

PE