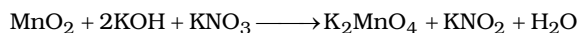


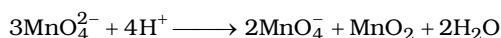
Daily Tutorial Sheet 4

JEE Main (Archive)

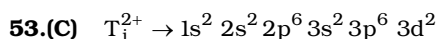
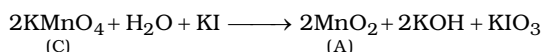
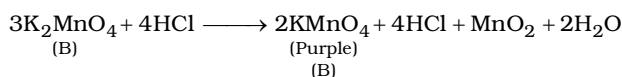
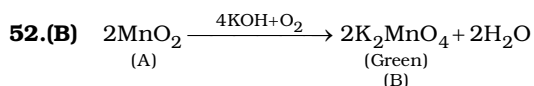
- 46.(D)** X is Mn. MnO_2 reacts with alkali metal hydroxide in presence of an oxidising agent, KNO_3 to give potassium manganate, K_2MnO_4 .



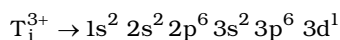
In acidic solution, K_2MnO_4 charges to KMnO_4 (dark purple solution)



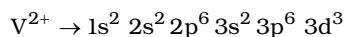
- 47.(C)** Lesser number unpaired e^- , so less metallic bonding & hence less enthalpy of atomisation.
- 48.(D)** Lutetium atomic number 71 has electronic configuration $4f^{14}5d^16s^2$. Last electron enters in 5d subshell.
- 49.(C)** Sc has an electronic configuration of $[\text{Ar}] 3d^14s^2$ and it shows + 3 state.
- 50.(D)** Co-Vitamin B₁₂, Zn-Carbonic anhydrase, Mg-Chlorophyll, Rh-Wilkinson's catalyst.
- 51.(A)** Eu -185 pm
Ce-165 pm
Ho-158 pm
N = 65 pm
Eu > Ce > Ho > N



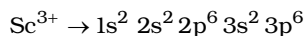
no. of unpaired $e^- = 2$



no. of unpaired $e^- = 1$



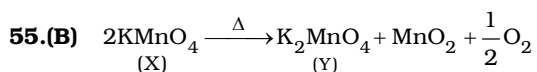
no. of unpaired $e^- = 3$



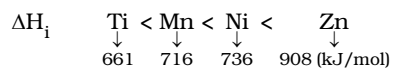
no. of unpaired $e^- = 0$

spin-only magnetic moment $\propto$ no. of unpaired e^-

- 54.(A)** Mo and W have nearly same atomic radii due to lanthanide contraction.

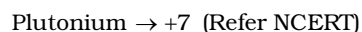
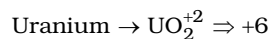


56.(B) The correct order of first ionization enthalpies.



Hence option (B) is correct.

57.(A) Highest possible oxidation state of

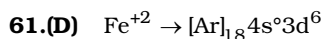


58.(A) Common CN of transition elements = 6

Common CN of inner transition elements = 8 to 12.

59.(A) Neptunium (Np) and plutonium (Pu) show maximum number of oxidation states starting from +3 to +7.

60.(A) Due to lanthanoid contraction, size of 4d = size of 5d series except La



So, it will achieve $3d^5$ (stable configuration) after removal of 1 electron from Fe^{+2} .