**Example 1. An octahedral complex [ML6]2+ absorbs light with wavelength=535 nm. What is the crystal splitting ? and what is the color to eye?.**

**Example 2. There are two solutions, one orange and one blue. Both solutions are known to be made up of a cobalt(II) complex ion; however, one has chloride ions and the other has ammonia ligands. What solution is expected to be orange?**

**Example 3. Estimate the 1ODq practically from the spectra data in the UV-Visible for the following complexes:3**

**[Ni(en)2(SCN)2] : 375, 450 and 725 nm.**

**[CoF6]3- : 380, 550 , and 750 nm.**

**[Rh(CN)6]3- : 288, and 328 nm**

**Example 4. Explain the selection rules for the colors of transition metal complexes and pick up the colred complex with identifying their wavelengths in the UV-Visible ranges 200-1000 nm**

**ZnCl42- , CdS , [CoBr4]2- , [Ni(dmg)2], [Mn(H2O)6]2+ and [Cr(NH3)3Cl3]**

**Example 5. Find the term symbols of [VCl3(CH3CN)3] then identify all expected transitions responsible of it’s color?**

**With Best Wishes**

**Dr Mahmoud Najim Abid**

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