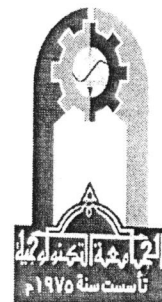




University of Technology
Department of Applied Sciences
2016/2017
Final Exam



Subject : Inorganic Chemistry
Branch : Applied Chemistry
Examiner : Rashed T. Rasheed

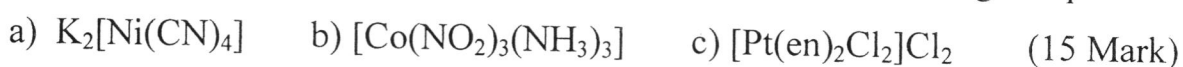
Class : 3rd year
Time : 3 hours
Date : 4/6/2017

NOTE: Answer 4 questions only

Q1/ According to M.O.T draw the splitting of S,P and d orbitals for: (25 Mark) ✓

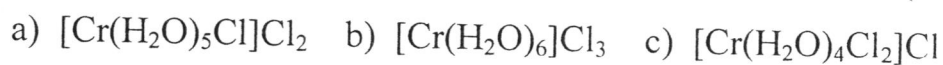


Q2/A. According to IUPAC system, what is the name of the following compounds? ✓



B. Define Jahn- Teller distortion? Give one example about it? (10 Mark)

Q3/ A. What is the oxidation state, coordination number (of the central ion) and the names of the following compounds ? (15 Mark)

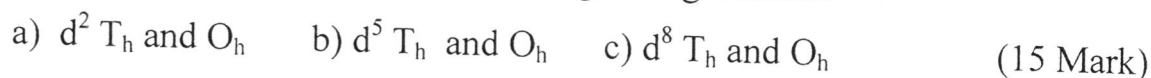


B. If $10Dq$ for cubic complex where 8000 cm^{-1} , what it is for same ion and same ligands when become octahedral complexes? (10 Mark)

Q4/ The magnetic moment value (μ) of $[\text{Co}(\text{NH}_3)_6]^{+2}$ compound is 3.87 B.M, what is the type of hybridization? What is the geometrical shape of this ion according to VBT? (25 Mark)

Q5/ A. Draw diagram of d-orbitals splitting in octahedral (O_h), tetrahedral (T_d) and square planar (Sq.p) situations? Draw $10Dq$ in all? (10 Mark) ✓

B. Calculate CFSE values of the following configurations:



GOOD LUCK