EASTERN UNIVERSITY, SRI LANKA
EXTERNAL DEGREE
SECOND YEAR FIRST SEMESTER EXAMINATION IN SCIENCE-June' 2015
[Repeat]
EXTCH201 - COORDINATION CHEMISTRY AND MAIN GROUP CHEMISTRY

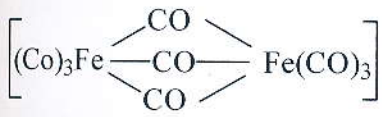
Answer all the questions **Time: One Hour**

1)

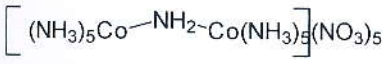
a) Write the IUPAC name of the following compounds.

i. $[Co(H_2O)_2(NH_3)_4]Cl_3$

ii. $[Al\ (OH)(H_2O)_5]^+$

iii. 

iv. $[Cr(H_2O)_6]Cl_3$

v. 

(30 marks)

b) Write the molecular formula of the following compounds.

i. potassium tetracyanonickelate(0)

ii. diamminebis(ethylenediamine)cobalt(iii) chloride

iii. potassium trioxalatoaluminate(iii)

iv. tetrapyridineplatinum(ii) tetrachloroplatinate(ii)

v. sodium amminebromochloronitroplatinate(II)

(30 marks)

(c) Draw the energy level diagrams and indicate the occupancy of the orbitals in the following complexes.

I. d^6, octahedral, low-spin

II. d^8, square planar

III. d^6, tetrahedral

(40 marks)

Contd..

2)

a. By using Crystal Field Theory explain; the hexaquo manganese (II) contains five unpaired electrons, while the hexacyano- ion contains only unpaired electron.

(30 ma

b. Draw all the isomers of an octahedral complex, which has three unidentate lig of type A and three unidentate ligands of type B.

(20 ma

c. i. List out five uses of hydrogen.

(30 ma

ii. List out four similarities and dissimilarities between elements of sub group

(20 ma

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