## CH1012 Tutorial 3

## Name:

- 1. Provide **IUPAC names** for the following compounds:
  - [Co(NH<sub>3</sub>)<sub>6</sub>]Cl<sub>3</sub>
  - Na<sub>3</sub>[CoF<sub>6</sub>]
  - [Co(NH<sub>3</sub>)<sub>3</sub>Cl<sub>3</sub>]
  - [Pt(NH<sub>3</sub>)<sub>2</sub>(NO<sub>2</sub>)<sub>2</sub>]
  - K<sub>3</sub>[Ru(CN)<sub>5</sub>Br]
  - Na<sub>3</sub>[AgF<sub>4</sub>]
  - [Co(en)<sub>3</sub>]Cl<sub>3</sub>
- 2. Give examples of **monodentate**, **bidentate** and **polydentate** ligands and give examples of transition metal complexes which contain these ligands.

3. Why are **metal chelate** complexes particularly stable?

4. What is the maximum number of **unpaired d electrons** that a transition metal atom or ion may possess? Provide an example of a transition metal complex with this metal in it.

- 5. What is the **coordination number** and **oxidation state** at the transition metal in each of the following complexes?
  - Na<sub>3</sub>[AgF<sub>4</sub>]
  - [Co(en)<sub>3</sub>]Cl<sub>3</sub>
  - [Pt(NH<sub>3</sub>)<sub>2</sub>(NO<sub>2</sub>)<sub>2</sub>]