NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF APPLIED CHEMISTRY
END OF SEMESTER TWO EXAMINATIONS – MAY 2005
INORGANIC CHEMISTRY II – SCH 1201
TIME: 3 HOURS

INSTRUCTION TO CANDIDATES

Answer ANY FOUR questions. Each question carries 25 marks.
Total Marks – 100

1. (a) Explain the reason for the Trans Effect?

   (b) How can one selectively synthesize CIS and Trans isomers for $[PE(NH_3)_2Cl_2]$.

2. Illustrate and explain the four (4) general mechanisms of Ligand substitution.

3. Considering Inner Sphere Mechanism, what will be the final products for the reaction:

   $[\underset{\text{inert}}{Co^{3+}}(NH_3)]^{3+} + [\underset{\text{labile}}{Fe^{2+}}(CN)_5OH_2]^{3-}$

   Explain and show all the steps.

4. (a) Transition elements have partly filled orbitals. Which ones are those?

   (b) Explain bonding in transition metals using the Crystalfield Theory.

5. (a) What are the ***four*** properties (magnetic) of transition metal compound.

   (b) Which are the ***four*** important stereo chemistries of vanadium, state their shapes and give examples.

End of question Paper!!!