

Eastern University, Sri Lanka

External Degree

Third year Second Semester Examination in Science - 2004/2005

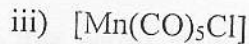
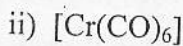
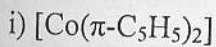
January/ March 2011

EXTCH 305 Organometallic Chemistry & Non -aqueous solvents

Answer all questions

Time: 01 Hour

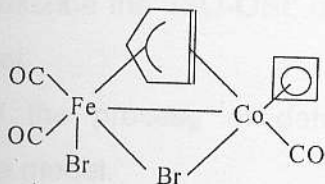
1 a) What is meant by EAN rule? Indicate whether the following organometallic compounds obey Effective Atomic Number (EAN) rule or not.



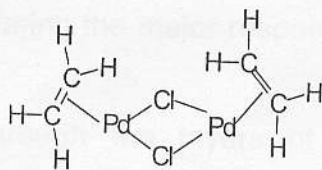
(20 Marks)

b) Indicate the monohapto, dihapto, trihapto, tetrahapto, pentahapto and bridging ligands present in the following compounds

i)

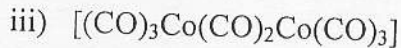
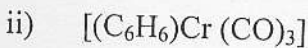
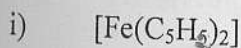


ii)



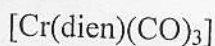
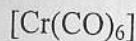
(20 Marks)

c) Give the systematic names of the following organometallic compounds.



(15 Marks)

d) Give reasons and explain which one of these two compounds will show a higher carbonyl frequency in the IR spectrum?



(20 Marks)

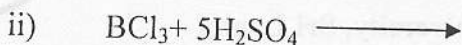
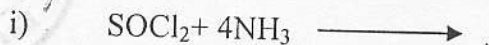
e) Discuss the structure of Ferrocene. Is it diamagnetic or paramagnetic? Give reasons.

(25 Marks)

2. a) What is solvolysis reaction?

(10 Marks)

b) Complete the following solvolytic reaction



(30 Marks)

c) What is the difference between Ammoniation reaction and Ammolytic reaction? Explain with chemical equations.

(30 Marks)

d) $\text{Na}^+(\text{H}_2\text{NCONH})^-$ cannot be prepared in aqueous medium but can be prepared in liquid NH_3 . Explain this statement using balanced chemical equations.

(30 Marks)