

INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

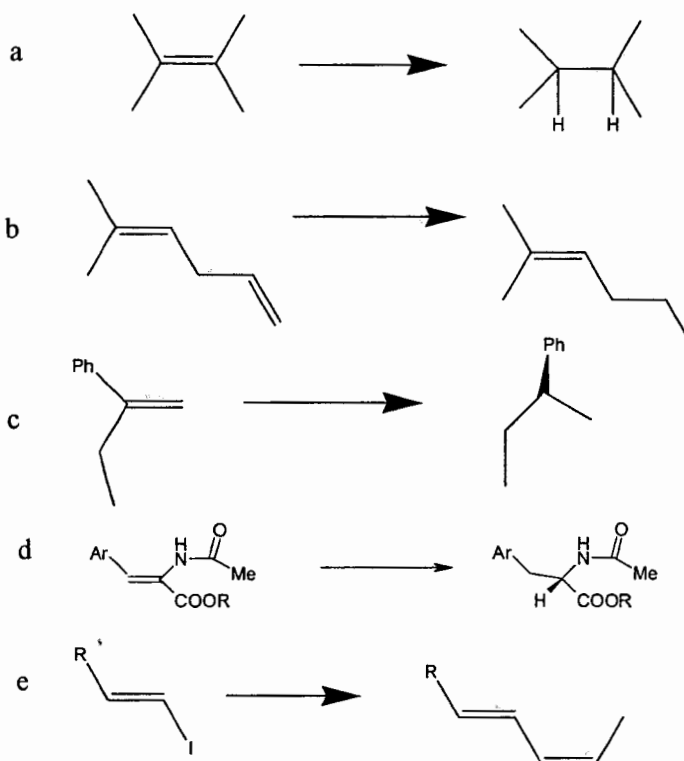
Date of examination.....FN/AN Full Marks.....30

Spring Semester 2012 5th yr. M. Sc. Department: Chemistry Time: 2 Hrs

Subject No. CY60006 Subject name: Application of Metal Complexes in Catalysis and Material Science No. of Students: 34

Answer all the questions precisely and to the point

1. Write down the catalyst and reagent(s) required and the mechanism of the following transformations. 4 × 5 = 20



2. "Oxidative Addition can occur when a complex behaves simultaneously as a Lewis base and a Lewis acid." – Explain. What are the different mechanisms of oxidative addition? Explain each mechanism. 5

7. What are the criteria, a compound must satisfy, in order to be a good catalyst? Explain 18/16 electron rule and its importance in catalytic reaction. What are the basic reactions involved in organometallic chemistry. Give example of each. 5