SEM6_C13_ORGANOMETALLIC _CATALYSIS

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MATHABHANGA COLLEGE
INTERNAL ASSESMENT EXAM, 2023

Answer the following questions:

1. (a) Draw the structure of Wilkinson's catalyst. Describe its catalytic activity towards hydrogenation of alkene. (1+3)=4
(b) What are the disadvantages in hydroformylation reaction using $Co_2(CO)_8$ as catalyst. Give the catalytic cycle of that reaction. (1+3)=4
(c) Why is the Ir based catalyst catalyst most efficient than the Rh based catalyst. 2

2. (a) $[PdCl_4]^{2-}$ is not suitable catalyst for oxidation of alkene to aldehyde by Wacker process-explain. Write down the catalytic cycle of that process. (2+3)=5
(b) Write an example of catalyst for polymerization of alkene. How it can be prepared? Why it is more efficient than Zeiglar catalyst. (1+2+2)=5

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Answer the following questions:

3. (a) Draw the structure of Wilkinson's catalyst. Describe its catalytic activity towards hydrogenation of alkene. (1+3)=4
(b) What are the disadvantages in hydroformylation reaction using $Co_2(CO)_8$ as catalyst. Give the catalytic cycle of that reaction. (1+3)=4
(c) Why is the Ir based catalyst catalyst most efficient than the Rh based catalyst. 2

4. (a) $[PdCl_4]^{2-}$ is not suitable catalyst for oxidation of alkene to aldehyde by Wacker process-explain. Write down the catalytic cycle of that process. (2+3)=5
(b) Write an example of catalyst for polymerization of alkene. How it can be prepared? Why it is more efficient than Zeiglar catalyst. (1+2+2)=5

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Answer the following questions:

5. (a) Draw the structure of Wilkinson's catalyst. Describe its catalytic activity towards hydrogenation of alkene. (1+3)=4
(b) What are the disadvantages in hydroformylation reaction using $Co_2(CO)_8$ as catalyst. Give the catalytic cycle of that reaction. (1+3)=4
(c) Why is the Ir based catalyst catalyst most efficient than the Rh based catalyst. 2

6. (a) $[PdCl_4]^{2-}$ is not suitable catalyst for oxidation of alkene to aldehyde by Wacker process-explain. Write down the catalytic cycle of that process. (2+3)=5
(b) Write an example of catalyst for polymerization of alkene. How it can be prepared? Why it is more efficient than Zeiglar catalyst. (1+2+2)=5