



Aalto University School of Chemical Technology
Industrial Symbiosis: Puu-0.3310 5 Cr. / Gary Watkins

Exam 04.09.2013

Answer the following FIVE (5) questions. All questions are worth 5p.

1. Explain (briefly) the meaning of the following terms: (1p each. 5p total.)

- Tragedy of the Commons
- Eco-efficiency
- The rebound effect
- DfX
- Dematerialisation

2. As they grow, how might Less Developed Countries (LDCs) develop their infrastructure (transportation, energy, water, waste treatment) in ways different from the traditional Highly Developed Countries' (HDCs) model? What gains could be made by doing so? 5p.

3. Choose a manufacturing process, with which you are familiar and, to the extent possible, evaluate the process, pointing out its strengths and weaknesses from an industrial ecology standpoint. 5p.

4. What are the main features and key stages of an LCA assessment? Discuss the framing of the question used in your GaBi practical exercise and its specific focus in terms of product impacts. 5p.

5. Discuss the differences between the ecosystem types shown in Figure 1 below. Suggest in which ways industrial ecology type thinking can approach a Type II system for human systems. Is a fully functioning Type II industrial ecosystem the ultimate? Is it realistic to work towards a Type III industrial ecosystem? Does a true Type III system exist in nature? 5p.



Aalto University School of Chemical Technology
Industrial Symbiosis: Puu-0.3310 5 Cr. / Gary Watkins

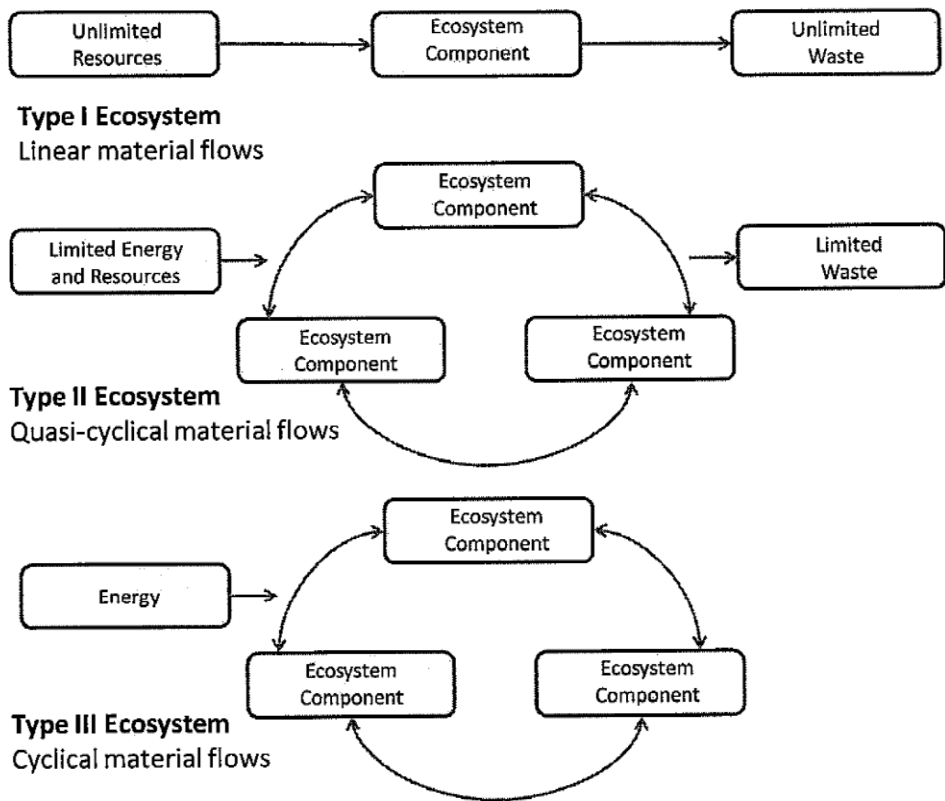


Figure 1 - Ecosystem Types I, II and III

END