Module 8 Assignment

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**Question 9: Identify and describe some of the measures of disposability.**

Disposability can be measured both as a function of reduction in waste and of reduction on environmental impact. Directly reducing waste can be accomplished by using fewer materials during production, using materials that can be recycled, and designing for component reuse. The percentage of a system that can be reduced, reused, or recycled is a measure of disposability. Likewise, making material choices that are biodegradable or at the very least environmentally friendly affects the impact to the environment. The percentage of a system that can be disposed of in an ecologically friendly manner is also a measure of disposability.

**Question 14: What impact might the results of the functional analysis (described in Section 4.1) have on producibility?**

During the preliminary design requirements the *whats* become *hows* and drive decisions that begin to place constraints on construction and manufacturing. These decisions will affect, among other factors, the material selections and processes required to bring a system into being. Historically, greater consideration has been given to producibility versus disposability.

**Question 19: Describe what is meant by a *learning curve*. Provide a simple illustration of a 70% and an 80% learning curve. Under what conditions can learning curves be applied?**

A learning curve is a plot (literal or figurative) which describes the decreasingly reduced time required to perform a task each successive time it is undertaken. Due to the decreasing reduction in time, the plot appears logarithmic (or at least non-linear).

Learning curves can be applied where there exists a coordinated and integrated set of activities that are repeated over time, affording a reduction in the amount of time required to perform each activity and equating to a reduction in the cost per unit of output.

**Question 21: Define what is meant by *green engineering*.**

Environmentally conscious design and manufacturing (ECDM) describes a paradigm under which engineering can be done in a manner mindful of disposability, sustainability, and industrial ecology. This is known as green engineering.