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10MAR151

First Semester M.Tech. Degree Examination, January 2011
Concurrent Engineering for Manufacturing

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Summarise the changing patterns in manufacturing with time. What were the five notable reaches that gave the corporations significant competitive advantage? (10 Marks)
 b. What are the performance indicators, used to measure an enterprise's competitiveness? Discuss. (10 Marks)
- 2 a. Compare and comment on the distribution of product development effort by British and Japanese companies. (06 Marks)
 b. With reference to lifecycle management, discuss the advantages of early introduction of the product to the market. (10 Marks)
 c. Illustrate with a graph, the relative cost of introducing a change with time and comment. (04 Marks)
- 3 a. Explain the major steps to be followed for creating a process map and improvement. (10 Marks)
 b. Discuss the different steps involved in implementing "As - is" model. (10 Marks)
- 4 a. Mention any two definitions of concurrent engineering. (04 Marks)
 b. Explain the basic principles of concurrent engineering. (08 Marks)
 c. Discuss additional means to minimize process interface. (08 Marks)
- 5 a. What is system engineering? Discuss the major systems involved in an automobile manufacturing process. (08 Marks)
 b. What are the advantages of the system engineering approach to concurrent problem solving? (06 Marks)
 c. What are the different ways of product decomposition? Explain with suitable illustration, the areas of concurrency in an Aircraft - Top - Down decomposition. (06 Marks)
- 6 a. Discuss the classification of information modeling, in a mechanical product and systems, as a part of concurrent engineering process invariant. (07 Marks)
 b. Illustrate with sketches and discuss various methods of representing objects and conceptual models. (07 Marks)
 c. What is group technology? What are the benefits of GT for a manufacturer? (06 Marks)
- 7 a. Discuss the reasons for Japanese success in implementing concurrent engineering. (15 Marks)
 b. What are the advantages of information modeling? (05 Marks)
- 8 Write brief notes on the following :
 a. Scope of life cycle management.
 b. Steps in pugh methodology.
 c. Shape, line and a flow icons used in enterprise modeling.
 d. Four elements of change management methodology. (20 Marks)
