

Code No: A5203

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY-2012
PRODUCT DESIGN AND DEVELOPMENT STRATEGIES
(DESIGN FOR MANUFACTURING)

Time: 3hours

Max.Marks:60

Answer any five questions
All questions carry equal marks

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- 1.(a) What do you understand by the term “Product Engineering”? Explain with a suitable example.
(b) What is Product life cycle? Describe with an example.
- 2.(a) Write a note on the product innovation criteria for the success of product.
(b) What is Creative Thinking and how does it help in the product success?
- 3.(a) Discuss the various types of simulation models used in product design.
(b) Discuss the different steps in model building.
- 4.(a) What is “Weighted Property Index”? How is it used in product design?
(b) Enumerate the common problems encountered in materials selection for a product. Suggest the remedial methods for the problems.
- 5.(a) How do you consider the cost *vs* performance relations in selecting a material for the crank shaft of an IC engine? Explain.
(b) Describe the basic principles of design for manufacturability for welded fabrications.
- 6.(a) How do the aesthetic and ergonomic considerations influence the design of a product? Explain with an example.
(b) What is the influence of mechanical loading and material on form design? Discuss.
- 7.(a) Define “Dimensional tolerance”. Give reasons why the control of dimensional tolerances in manufacturing is important.
(b) It has been stated that dimensional tolerances for non-metallic stock, such as plastics are usually wider than for metals. Explain why. Consider the physical and mechanical properties of the materials involved in your answer.
8. Write short notes on:
 - (a) Functional design *vs* Production design
 - (b) Similitude relations
 - (c) Form design of Aluminium castings.
