

GUJARAT TECHNOLOGICAL UNIVERSITY
ME Semester –II Examination Dec. - 2011

Subject code: 1720809

Date: 16/12/2011

Subject Name: Product Design and Development

Time: 02.30 pm – 05.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) “Incorrectly positioned, priced and advertised new product generally leads to failure in market” Justify the statement. **07**
- (b) List the phases of the new product development. Explain in detail the planning for retirement phase with at least 3 different examples. **07**
- Q.2** (a) Draw and explain the graph of Sales/Profit vs time for the new product and explain the maturity stages in detail. **07**
- (b) Discuss the importance of material selection in new product development. Explain Value analysis method and discuss for the case of Tata Nano. **07**
- OR**
- (b) Draw and explain method of interpretation of Ashby material selection chart. **07**
- Q.3** (a) What are the various factor used for process selection for particular product. Discuss all in detail. **07**
- (b) What do you mean by DFM? Explain the DFM guideline with one example. **07**
- OR**
- Q.3** (a) Explain AHP approach in detail for the process selection with one example. **07**
- (b) “DFA is important approach of designing for the automobile industry” Comment on the statement. Also, explain the guideline for the DFA in brief. **07**
- Q.4** (a) What do you mean by time value of money? Explain future worth analysis for economic decision making with one example. **07**
- (b) List the various method of finding profitability on investment? Discuss in detail about Rate of Return on investment with one example. **07**
- OR**
- Q.4** (a) Differentiate between recurring and non recurring cost. Explain Analogy approach of the cost estimation. **07**
- Q.4** (b) Define depreciation. Explain double decline balance (DDB) method of calculating depreciation. **07**
- Q.5** (a) Discuss the benefit of rapid prototyping to the marketer, manufacturer and product designer in detail. **07**
- (b) List and explain in detail all the applications of the rapid prototyping. **07**
- OR**
- Q.5** (a) What are the important issues in Rapid prototyping? Explain in detail about the mechanism of support structure **07**
- (b) Explain Fused deposition modeling (FDM) in detail. **07**