ME|SemII|CBCGS|MECH CAD-CAM|PD|M-J-18 22/05/18

Q.P. Code: 25456

Time: 03 Hours **Max Marks: 80**

N.B.:1) Question **No.1** is compulsory.
2) Attempt **any three** questions out of remaining five questions.
3) Assume suitable data if necessary.
4) Figures to the right indicate full marks.

Q.1 **Solve any four** (20)

(a) Explain concept of value engineering and its methodology in detail

(b) Classify & state the importance of manufacturing process in product design.

(c) Explain various stages of product life cycle management.

(d) How DOE helps in Robust Design of new product or process development.

(e) Explain patents and IP act in relation to economics of product development.

(f) Write a short note on Selective laser sintering in RP process.

Q.2 (a) How fuzzy approach is used for material and process selection? Explain. (10)

(b) Explain the following (10)

(i) Axiomatic design principles (ii) FDM

Q.3: (a) Explain product FMEA with appropriate case study. (10)

(b) What do you mean by QFD? Prepare a quality house for mobile phone. (10)

Q.4 (a) How fuzzy logic approach is used for material selection with multi criteria? Explain. (10)

(b) Explain top down approach to assembly modeling (10)

Q.5 (a) Explain importance of quality dimensions with respect to following points:- (10)

1. Performance
2. Features
3. Aesthetics
4. Ergonomics
5. Reliability

(b) What are the different type of generative manufacturing process (10)

Q.6 (a) What are the different factors considered for DFMA in case of casting process? Explain (10)

(b) Following details are given about an investment analysis (10)

	Proposal A	Proposal B
Initial Investment	175000	180000
Income 1st year	65000	70000
2nd year	60000	65000
3rd year	55000	60000
4th year	45000	45000
Scarp Value	35000	40000

Evaluate these proposal using NPV and payback period methods. (Take PV factor for NPV is 10 %)

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