

Total No. of Questions : 12]

SEAT No. :

[Total No. of Pages :3

**P1197**

**[4659] - 161**

**B.E. (Production s/w)**

**d - PRODUCT DEVELOPMENT**

**(2008 Course) (Elective - II)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Answer Q.No.1 or Q.No.2, Q.No.3 or Q.No.4, Q.No.5 or Q.No.6, from Section - I and Q.No.7 or Q.No.8, Q.No.9 or Q.No.10, Q.No.11 or Q.No.12 from Section - II.*
- 2) *Answers to the two sections should be written in separate answer books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Assume Suitable data if necessary.*
- 6) *Use of logarithmic tables, Slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*

**SECTION - I**

**Q1) a)** What is Rapid Prototyping? Explain in detail types of rapid prototyping. **[9]**

b) Explain Standardization, Simplification & Specialization in product design. **[9]**

OR

**Q2) a)** Explain Product Verification & Product Validation in short with example. **[8]**

b) What is modern Product development process? Explain role of product development team in product development planning with reference to ISO standard. **[10]**

**Q3) a)** Explain in short the Economic Analysis of product. **[8]**

b) What are the types of customer needs, what do you mean by customer satisfaction & explain effect of customer satisfaction on product design? **[8]**

OR

**P.T.O.**

- Q4)** a) What are the different methods of gathering customer needs information? How will you analyze the information? [8]
- b) Write short notes on: [8]
- i) Market Segmentation
  - ii) Economic Analysis of Product

- Q5)** a) What is functional modeling? Explain decomposition in detail? [8]
- b) Explain augmentation & aggregation in short? [8]

OR

- Q6)** a) Describe Pugh's Concept in detail with example? [8]
- b) Write short notes on: [8]
- i) FMEA
  - ii) Concept selection process

### **SECTION - II**

- Q7)** a) What is reverse engineering? What are its advantages & disadvantages? [9]
- b) What is product tear down process & explain its different methods. [9]

OR

- Q8)** a) What is indented assembly cost analysis & explain function form diagrams. [9]
- b) What is product portfolio & architecture explain with suitable example. [9]

- Q9)** a) What is design for manufacture (DFM)? Explain the general principles to be followed while designing the parts for manufacture. [8]
- b) Explain phases of product life cycle with its corresponding technologies. [8]

OR

- Q10)a)** What is product testing & explain following terms
- i) Field trials
  - ii) Virtual Trial
  - iii) Iterations **[8]**
- b) Explain the guidelines to be followed in the design of the parts for the following processes:
- i) Welding
  - ii) Forging **[8]**
- Q11)a)** What is link between product data & product workflow? Explain the PLM in detail. **[8]**
- b) What is product life cycle? Why it is necessary? Explain its components in detail? **[8]**

OR

- Q12)a)** Explain in short Reliability Concept in product development? **[8]**
- b) Write short notes on:
- i) Product data & Product work flow
  - ii) Importance of customer involvement. **[8]**

