

B.E. (Mechanical Engineering)
PRODUCT DESIGN AND DEVELOPMENT
(New 2008 Pattern) (402044B) (Elective - I) (Semester - I)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Answer any three questions from each section.*
- 2) Answers to the two sections should be written in separate books.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Figures to right indicate full marks.*
- 5) Use of logarithmic tables, Slide rule, Mollier charts, electronic pocket calculator is allowed.*
- 6) Assume suitable data, if necessary.*

SECTION - I

Q1) a) Explain morphology of product design? **[10]**

b) Explain product development planning with reference to ISO standard? **[8]**

OR

Q2) a) What is product design? Write evolution in product design? **[10]**

b) Distinguish between product development and product design? **[8]**

Q3) a) Write in detail Technology Forecasting? **[8]**

b) Explain in detail about customers population? **[8]**

OR

Q4) a) What is Mission Statement and Technical questioning? **[8]**

b) Why there is need of economic analysis of product? **[8]**

Q5) a) Explain in detail FMEA? **[8]**

b) Write in detail Pugh's concept, and selection charts. **[8]**

OR

Q6) a) What is product benchmarking? Explain steps involved in product benchmarking? **[8]**

b) Explain in detail augmentation and aggregation? **[8]**

P.T.O.

SECTION - II

Q7) a) Write note on product portfolio and Architecture? [10]

b) Explain in detail step involved in product teardown process? [8]

OR

Q8) a) Write in detail Benchmarking Approach and its Detailed Procedure? [10]

b) What are the Applications of Product Teardown? [8]

Q9) a) What is design for assembly? Write its steps in detail? [8]

b) Explain in detail life cycle assessment method? [8]

OR

Q10) a) Explain in detail design for piece part production? [8]

b) Explain in detail manufacturing cost analysis? [8]

Q11) a) Write short notes on [8]

i) Need of Product life cycle

ii) Significance of PLM

b) Write in detail different phases of product life cycle. [8]

OR

Q12) a) Write note on Product Data and Product Workflow. [8]

b) What is importance of product data management in industry? [8]

