

Total No. of Questions : 10]

SEAT No. :

P48

[Total No. of Pages : 2

[5871]-548

B.E. (Mechanical)

PRODUCT DESIGN AND DEVELOPMENT (402050 - C)

(2015 Pattern) (Semester - II) (Elective - IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6, Q. 7 or Q. 8, Q. 9 or Q. 10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of calculator is allowed.
- 5) Assume suitable data, if necessary.

- Q1)** a) Write a note on standardization, simplification and specialization in product development. [6]
- b) Define the concept of Product Design and discuss its significance from modern perspective. [4]

OR

- Q2)** a) What is the importance of Technical Questioning from design perspective? Discuss with a suitable example. [5]
- b) How is S curve applicable in Product Design? Describe with its sketch any two phases in the Curve. [5]
- Q3)** a) Discuss the concept of Concurrent Design and explain with a suitable example its importance for a Product Designer. [7]
- b) Describe product verification in brief. [3]

OR

- Q4)** a) What is Morphology of Product Design? Discuss any three stages in Morphology of Product Design. [5]
- b) Write a note on Kano model. How to convert customer's voice into Critical to Quality issues? [5]
- Q5)** a) What is product tear down? Discuss its process in accordance with Reengineering. [10]
- b) Explain the process of Force Flow Diagrams. Also explain its significance from a designer's perspective. [8]

OR

P.T.O.

Q6) a) Discuss and compare design for assembly and design for piece part production. Elaborate with an example. **[10]**

b) Discuss in detail the need for design for environment. How is it different from conventional design process? **[8]**

Q7) a) What is meant by reliability? Explain designing for reliability for Design Engineers. **[8]**

b) Explain global, local and regional issues related with product development process. **[8]**

OR

Q8) a) Designer's perspective for manufacturability is crucial for future market related issues. Write some examples to justify your statements. **[8]**

b) Compare between FMEA and DFMEA in terms of their specific application, significance and process. **[8]**

Q9) a) What is PLM? What are the phases involved in it? Explain any two in detail with suitable example. **[8]**

b) What is the importance of PLM and PDM for a Designer? How does these technologies have brought revolution with the design sector? **[8]**

OR

Q10) a) Explain background, overview and need of Product Life Cycle from a product developer's angle. **[8]**

b) Write a note on Product Data and Product Work Flow. **[8]**

