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Roll No. :

337744(37)

**B. E. (Seventh Semester) Examination,
Nov.-Dec. 2021**

(New Scheme)

(Mech., Mechatronics Engg. Branch)

PRODUCT DESIGN & DEVELOPMENT

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from the rest of three parts (b), (c) and (d) in each question.

Unit-I

1. (a) Define Product Design. 2
- (b) Explain the various product development process phase. 7

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- (c) Explain the role of Ergonomics in product Design. 7
- (d) Write a short note on process of selecting product architecture. 7

Unit-II

2. (a) Define Value Engineering. 2
- (b) Define Morphological Chart and explain how is it performed with suitable diagram. 7
- (c) Explain the template for house of quality. 7
- (d) What are the parameter over which the design strategy for product development process is decided? 7

Unit-III

3. (a) What are the different types of Prototypes? 2
- (b) Explain how graphics concept can be used in design & packing (packaging) consumer products. 7
- (c) Explain the principle of prototyping. 7
- (d) How is the analysis of manufacturing cost performed? 7

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Unit-IV

4. (a) What is meant by Ergonomic Needs? 2
- (b) Describe the steps involved in industrial design process. 7
- (c) What is the need of management of technology and how is it done? 7
- (d) Explain the role of oesthetics in product design. 7

Unit-V

5. (a) Define Copyright. 2
- (b) Explain the significance of Intellectual Property Right. 7
- (c) Explain the design structure matrix with suitable example. 7
- (d) What are the various remedies available to accelerate the delayed projects? 7