

Reg. No. :

**Question Paper Code : 11118**

M.E./M.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Second Semester

CAD/CAM

PD 5251 — INTEGRATED PRODUCT DESIGN AND PROCESS DEVELOPMENT

(Common to : M.E. Product Design and development)

(Regulation 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the importance of IPPD.
2. What is the need for behavior analysis?
3. Name the hints used for generating concepts.
4. Draw the flowchart for concept selection.
5. What is meant by slot modular architecture?
6. Write down the significance for component standardization.
7. Define conceptualization.
8. Name few examples of technology driven products.
9. What is the purpose of prototyping?
10. How to calculate the manufacturing cost of a product?

PART B — (5 × 13 = 65 marks)

11. (a) (i) With an aid of neat sketch and suitable example explain the methodologies used for new product development. (8)
- (ii) Select any product. By adopting five step structured approach to identify the customer need of that product. (5)

Or

- (b) (i) Briefly explain the organization process management and improvement in IPPD. (6)
- (ii) Explain the need for integration of customer, designer, material supplier and process planner. (7)
12. (a) (i) Obtain a product specification for a eco friendly two wheeler by adopting step by step procedure. (7)
- (ii) Discriminate the classification tree and combination table. (6)

Or

- (b) (i) Propose a set of selection criteria for the choice of a battery technology used in mobile phones. (6)
- (ii) Write short notes on concept testing methodologies. (7)
13. (a) Develop product architecture for an automated washing machine. Create geometric layout development and overall block diagram.

Or

- (b) (i) Describe the cluster elements of the schematic layout with an example. (7)
- (ii) Distinguish between integral and modular architecture (6)
14. (a) (i) Explain the process of CAE/CAD/CAM in Industrial design. (7)
- (ii) With suitable examples explain the need for industrial design. (6)

Or

- (b) (i) Explain what types of products might not benefit from ID involvement in the development process. (7)
- (ii) List some firms that you have a strong corporate identity. What aspects of their products helped to develop this identity? (6)

15. (a) (i) Explain the role of customer and competitor data analysis in the economic analysis process of the product. (7)  
(ii) How to improve production efficient and reduce system complexity simultaneously? (6)

Or

- (b) (i) Describe in detail how the planning make an impact in prototype. (6)  
(ii) Write short notes on accelerating project. (7)

PART C — (1 × 15 = 15 marks)

16. (a) Conduct concept screening and concept scoring process for selecting a best concept for making water purifier. Also prepare customer response sheet.

Or

- (b) Criticize how product architecture will differ for a product (bicycle) developed for an economically lower segment of market vis-a-vis the same product (bicycle) developed for upper segment of market.