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Question Paper Code : 71617

M.E. DEGREE EXAMINATION, JUNE/JULY 2013.

Second Semester

Product Design and Development

PD 9221/PD 921 – INTEGRATED PRODUCT DESIGN AND PROCESS DEVELOPMENT

(Regulation 2009)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the needs of integrated product design and process development?

2. List any four methods commonly used for documenting the interactions with customers.

3. What is concept classification tree?

4. Define a term "Manufacturability".

5. What is product architecture?

6. Name the motives for product change.

7. How is Industrial design important to a product?

8. What is Technology Driven Product?

9. What is an analytical prototype?

10. When should economic analysis be performed?

PART B — (5 × 16 = 80 marks)

11. (a) Explain, how to develop the concept and adapt the generic product development process for a new product?   (16)

Or

    (b) With an example, explain the challenges for new product development team.   (16)

12. (a) List out the steps and explain concept generation methodology. (16)

Or

(b) How might you use the concept selection methodology to decide whether to offer a single product to the market place or to offer several different product options? (16)

13. (a) Explain the methodology for establishing the product architecture. (16)

Or

(b) With a suitable example, describe about the related system level design issues. (16)

14. (a) Explain the different phases of Industrial design process for product development. (16)

Or

(b) Briefly explain, how to assess the quality of Industrial design product by five categories. (16)

15. (a) With a suitable example, explain how to reduce component cost and assembly cost of a product using Design for Manufacturing Methodology. (16)

Or

(b) (i) List out and explain the purposes of prototypes. (10)

(ii) List any five reasons, why the firms may choose to pursue a product even if the quantitative analysis reveals a negative Net Present Value (NPV). (6)

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