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Question Paper Code : 82077

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Second Semester

Product Design and Development

PD 9221/PD 921/10222 CD 204 — INTEGRATED PRODUCT DESIGN AND PROCESS DEVELOPMENT

(Common to M.E. CAD/CAM)

(Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give few examples for functional organization.

2. How are the raw data collected from the customers?

3. What is concept generation?

4. What are the various ways of communicating concepts?

5. When is the product architecture defined?

6. Differentiate between aesthetics and ergonomics.

7. What is meant by robust design?

8. How do you assess the qualities of Industrial design?

9. What are the advantages of analytical prototype?

10. When should economic analysis be performed?

PART B — (5 × 16 = 80 marks)

11. (a) Briefly explain about the different methods that are commonly used for documenting interactions with customers. (16)

Or

(b) Exhibit a generic product development process and list out the tasks and responsibilities of the key functions of the organization for each phase. (16)

12. (a) List the five step concept generation methodology and explain how you decompose the problem of designing a new cabin for desktop. (16)

Or

(b) When are product specifications established? Discuss the (2)

(i) Establishing the target specifications (7)

(ii) Setting the final specifications. (7)

13. (a) Explain the four step methodology of establishing architecture for a product by considering suitable product as an example. (16)

Or

(b) Consider a laptop - draw a schematic including the essential functional elements. Identify two possible clustering of these elements into chunks. Is there any evidence to suggest which architecture is chosen? (16)

14. (a) What are the six phases of industrial Design? Explain with suitable example. (16)

Or

(b) (i) What is the difference between technology-driven products and user-driven products? (8)

(ii) Write the impact of Computer-based tools on the industrial design process. (8)

15. (a) Explain the design for manufacturing (DFM) methodology with a flow chart. (16)

Or

(b) Explain the principles of prototyping, list all the steps involved in planning for prototypes. (16)

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