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B.E/B.Tech DEGREE EXAMINATIONS, NOV/DEC 2012

Mechanical Engineering

Eighth Semester (Regulation 2008)

MF9021 PRODUCT DESIGN AND DEVELOPMENT

Time:3 hr

Max.Mark:100

Answer ALL Questions

**Part-A (10 x 2 =20 Marks)**

1. What is the need for IPPD?
2. Make a short note on behavioral analysis.
3. Explain any two benefits of structured concept selection method.
4. Sketch and indicate various elements of concept development process.
5. What is product architecture?
6. What is the benefit of standardization?
7. List out some corporate examples who effectively used industrial design to establish visual equity and corporate identity.
8. How important is cross functional integration in product development?
9. What is benefit cost –ratio?
10. What is a prototype?

**Part –B ( 5 x 16 = 80 marks)**

11. i) Explain about the challenges in product development. (8)  
ii) Explain the four steps of establishing product specifications. (8)
12. a. Briefly discuss about five step concept generation process. (16)  
Or  
b. Explain how Pugh concept selection can be used to narrow down the number of concepts quickly to improve the concepts. (16)
13. a.i) Briefly discuss about three types of Product modular architecture. (8)  
ii) Discuss about various related system level design issues. (8)

Or

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- b.i) Discuss the various steps in establishing the architecture. (8)
- ii) Discuss about managing tradeoff between differentiation and commonality plans in platform planning. (8)
14. a.i) Describe briefly the various phases of industrial design process. (8)
- ii) Enumerate Dreyfuss's five critical goals for industrial design. (8)
- Or
- b.i) Explain about relative timing of technology driven and user driven products. (8)
- ii) Explain how important is industrial design to a product? (8)
15. a) Explain the principles of prototypes with some examples. (16)
- Or
- b) i) Discuss about the elements of Economic analysis. (8)
- ii) Discuss about the guidelines applies to accelerating projects. (8)

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