



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 140653**

Roll No.

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## B.Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15  
**PRODUCT DEVELOPMENT & DESIGN**

Time : 3 Hours]

[Total Marks : 100

**Note:** Attempt all questions. Answer should be in precise way.

1 Attempt **any two** Questions: **10×2=20**

- (A) What do you understand by mission statements? What are the different fronts -end- activities comprising the concept development phase? Explain all systematically in detail.
- (B) Explain the significance of "Identifying Customer Needs". What are the different five steps for identifying customer needs? Explain in detail focusing the methods for gathering raw data from customers.
- (C) What are product specifications? Also, tell about their establishment. What is the procedure for establishing the target specifications? Explain.

**2** Attempt **any two** Questions: **10×2=20**

- (A) What is Product Architecture? When it is defined? What are the various steps for establishing the architecture? Describe.
- (B) What is industrial design? How important is industrial design to a product? Explain its different phases in detail.
- (C) Describe different guidelines of Design for Assembly, with the use of suitable sketches. Also, explain in brief estimation of manufacturing costs in context of design for manufacturing.

**3** Attempt **any two** Questions: **10×2=20**

- (A) What is Quality function deployment (QFD)? How the implementation is possible of QFD in production? Explain in detail.
- (B) "Design for manufacturing requires a cross-functional-team", what do you understand by the statement? Explain all the steps of Design for Manufacturing process.
- (C) What do you understand by Product Platform Planning? What is the procedure for developing a product plan? Explain.

4 Attempt **any two** Questions: **10×2=20**

- (A) What are Prototypes used for? What are the principles of Prototyping? Explain the whole steps of planning of prototypes.
- (B) What is Robust Design? Explain. Describe Robust Design Process. Also, explain control factors and noise factors.
- (C) What is Intellectual Property? Define Patent. Explain patent strategy and planning, describing whole procedure of patenting.

5 Write short notes on **any four** of the following: **5×4=20**

- (A) Brain Storming, concept generation and selection
  - (B) Concurrent Engineering
  - (C) Design for Environment
  - (D) Design for Economy
  - (E) Rapid Prototyping.
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