

Printed Pages—2

EME046

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

PAPER ID : 2765 Roll No. 

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**B.Tech.****(SEM. VII) ODD SEMESTER THEORY EXAMINATION 2012-13  
CONCURRENT ENGINEERING**

Time : 3 Hours

Total Marks : 100

**Note : Attempt all questions.**

1. Attempt any **FOUR** parts : **(4×5=20)**
  - (a) What is Taguchi method for Robust Design ? List key points. How it is helpful to industries ?
  - (b) What do you mean by product life cycle ? What is life cycle cost ?
  - (c) What are the tools and techniques of Concurrent Engineering (CE) ? List the limitation of CE.
  - (d) What is role of a team member and their composition in a CE process ?
  - (e) Explain Design for Manufacturing (DFM) with respect to CE.
  
2. Attempt **ALL** parts :
  - (a) What are the basic principles of quality ? Define the need of QFD. Mention quality benefits of QFD. What are the pitfalls in implementing QFD ? **10**
  - (b) What are the four houses of quality ? What are the measures needed for houses of quality ? **5**
  - (c) List essential factors of a good product design. **5**

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**/Turn Over**

3. Attempt any **TWO** parts : **(2×10=20)**
- (a) Define compatibility index. Explain the compatibility approach of modeling Concurrent Engineering (CE) design.
  - (b) Differentiate between conventional manufacturing versus concurrent engineering process.
  - (c) List and explain essential features of a good product design process.
4. Attempt any **TWO** parts : **(2×10=20)**
- (a) Explain the role of Design for Manufacturing in Concurrent Engineering. Give the guidelines of DFM.
  - (b) Explain Taguchi design method for Robust Design. Take some examples.
  - (c) What is reliability ? How it is associated with life cycle and serviceability design, design for maintainability and design for economics ? Describe it clearly.
5. Write short notes on any **FOUR** parts : **(4×5=20)**
- (a) Compatibility model approach and their index.
  - (b) Explain Morphology of Product Design Process.
  - (c) Explain design for economics.
  - (d) Concurrent Engineering and its role in competitive manufacturing.
  - (e) Explain the role of 'Design for Inspection' in manufacturing.