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Printed Pages—2 **EME046**

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

PAPER ID : 2765 **Roll No.** | | | | | | | | | | |

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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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.