INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)

M.Tech II Semester End Examinations (Regular) - July, 2017

Regulation: IARE–R16

DESIGN FOR MANUFACTURING AND ASSEMBLY
(CAD/CAM)

Time: 3 Hours   **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Explain the various steps involved in systematic design process of a product.   **[7M]**

   (b) Discuss the basic principles of design for economic production.   **[7M]**

2. (a) What are process selection charts? Explain uses of process selection charts.   **[7M]**

   (b) How the selection of materials effect on the quality and productivity?   **[7M]**

UNIT – II

3. (a) Discuss the design recommendations for drilling and Boring .   **[7M]**

   (b) Explain, with suitable examples, redesign of components from machining ease point of view.**[7M]**

4. (a) Discuss the design guidelines for sand casting.   **[7M]**

   (b) Discuss the factors involved in the selection of a casting process.   **[7M]**

UNIT – III

5. (a) Describe the need of pre welding and post welding operation and its impact on the performance of welded component.   **[7M]**

   (b) Explain the design recommendations for drop forging die.   **[7M]**

6. (a) Explain the design guidelines to be followed for extruded sections.   **[7M]**

   (b) How Keeler - Goodman diagrams are helpful in selecting materials for forming operations. **[7M]**

UNIT – IV

7. (a) Discuss the design guidelines for automatic assembly.   **[7M]**

   (b) Explain design guidelines for hand automation.   **[7M]**

8. (a) Explain the use of mechanized and automated devices in automatic assembly.   **[7M]**

   (b) Differentiate the intermittent Transfer and continuous Transfer in automatic assembly transfer systems.   **[7M]**

UNIT – V

9. (a) Explain the compliance analysis for design of assembly. **[7M]**

    (b) What issues are effecting insertion time and how they are to be minimized? **[7M]**

10. (a) Discuss the design guidelines for automatic assembly. **[7M]**

    (b) Explain the effect of weight on handling time. **[7M]**

$- \circ \circ \bigcirc \circ \circ -$