**Code No: I1510/R16**

**M. Tech. I Semester Regular Examinations, January-2017**

# DESIGN FOR MANUFACTURING AND ASSEMBLY

**[Common to Machine Design (15) and Mechanical Engg. Design (14)]**

**Time: 3 Hours** **Max. Marks: 60**

***Answer any FIVE Questions***
***All Questions Carry Equal Marks***

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| 1. | a | What is DFMA? How the development of DFMA is been progressed? | 6 |
| | b | Differentiate between DFA, DFM and DFMA. | 6 |
| 2. | a | Explain the effect of part symmetry on handling time. | 6 |
| | b | Explain the effect of part thickness and weight on handling time. | 6 |
| 3. | a | Briefly discuss the product design considerations in machining with neat sketches. | 6 |
| | b | Discuss the applications of design for machining rules. | 6 |
| 4. | a | List out and explain the effect of casting discontinuities on the properties of a casted product. | 6 |
| | b | Briefly explain the design guidelines for extruded sections with neat sketches. | 6 |
| 5. | a | Discuss the general design recommendations for forging operation. | 6 |
| | b | Explain the effect of thermal stress in weld joints. | 6 |
| 6. | a | Discuss the importance of pre and post treatment of welds. | 6 |
| | b | Sketch and explain how to choose parting line in forging design. | 6 |
| 7. | a | Briefly explain the factors that effect drawability. | 6 |
| | b | Explain component design for blanking operation. | 6 |
| 8. | | Write a brief note on the following:<br>a) Multi station assembly system<br>b) Automated assembly system | 12 |

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