Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14ME2040** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DESIGN FOR MANUFACTURE** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | What are the various economic factors to be considered for product development? | CO1 | 10 |
| b. | List the advantages and disadvantages of DFM. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Correlate material properties and manufacturing process with an illustration. | CO1 | 10 |
| b. | Classify the manufacturing processes under Processing operations and Assembly operations with suitable examples. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Die casting process is suitable for metals like Aluminum, Zinc, Magnesium and Brass. Elaborate with a case study. | CO2 | 10 |
| b. | Discuss the various consideration for designing a cast component. | CO2 | 10 |
| **(OR)** | | | | |
| 4. | a. | Porosity is an inherent undesirable feature in powder metallurgy. List a set of design considerations that can be adopted to avoid the same. | CO1 | 10 |
| b. | With neat sketches explain the various recommendation for designing a weldment with minimum distortion. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Describe the developments in casting process. | CO1 | 10 |
| b. | How does material flow affect a casting process? | CO1 | 10 |
| **(OR)** | | | | |
| 6. | a. | How does machinablity, finishability affect the material factor? | CO2 | 10 |
| b. | What are the recommended tolerance for various size drilled holes? | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | Explain the various characteristics of shaper and planar machined parts. | CO2 | 20 |
| **(OR)** | | | | |
| 8. | a. | How do tolerance and geometry features affect the final product fabricated through machining. | CO2 | 10 |
| b. | How does cost factor affect the selection of a secondary machining process for a manufactured product. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. |  | Compare and contrast Manual Design for Assembly and Automated Design for Assembly. | CO2 | 20 |