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

**G:\logo and QP Template\logo 3 Feb 2018 final.tif**

**End Semester Examination – Nov/Dec– 2018**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **17ME3016** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ADVANCED MANUFACTURING PROCESSES** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course Outcome** | **Marks** |
| 1. |  | List out the important features of High Energy Rate Forming (HERF) process and Explain the following HERF processes,  a. Unconfined type explosive forming.  b. Electro hydraulic forming. | CO1 | 4 |
| 8 |
| 8 |
| (OR) | | | |  |
| 2. | a. | Elaborate about roll forming process with geometric possibilities. | CO1 | 10 |
| b. | With a neat sketch, Illustrate about electromagnetic forming with their process parameters. | CO1 | 10 |
| 3. | a. | Illustrate about the friction stir welding process with neat sketch. | CO2 | 12 |
| b. | List out advantages, limitations and applications of friction stir welding process. | CO2 | 8 |
| (OR) | | | |  |
| 4. | a. | Explain with a schematic the working principle of vacuum die casting process. | CO2 | 10 |
| b. | Elaborate about the step by step process of squeeze casting. | CO2 | 10 |
| 5. | a. | Elucidate about the following working principles with its sketch,  Electro jet machining. | CO3 | 10 |
| b. | Electrolytic in-process dressing. | CO3 | 10 |
| (OR) | | | |  |
| 6. | a. | With a neat sketch explain the principle of shaped tube electrolytic machining, Also, state the process parameters which affect the overall process performance. | CO3 | 14 |
| b. | State the advantages, limitations and applications of electrochemical grinding process. | CO3 | 6 |
| 7. | a. | Elaborate the different peripherals of micro-electro discharge machining setup with its applications. | CO4 | 12 |
| b. | Write short notes on micro-ultrasonic machining process. | CO4 | 8 |
| (OR) | | | |  |
| 8. |  | With a schematic explain the working principle of following additive manufacturing process,   1. Extrusion based system. 2. Sheet lamination process. | CO5 | 10+10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Write short notes on following micro machining instruments,  Surface profilers – Stylus Instrument. | CO6 | 8 |
| b. | Optical and electron microscopes. | CO6 | 12 |