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



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

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| **Code :** | **14ME2047** | **Duration :** | **3hrs** |
| **Sub. Name :** | **WELDING TECHNOLOGY** | **Max. Marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Elaborate the types of Consumable electrodes. | CO1 | 08 |
| b. | Discuss the Safety recommendation in welding and cutting operation. | CO1 | 12 |
| **(OR)** | | | | |
| 2. |  | Explain submerged arc welding with neat sketch, principal, operation, advantage, disadvantage and application. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Calculate the total cost of manual flux shielded metal arc welding using the data given below:  Weld length = 2 meters  Welding speed = 12 m/hr  Operating factor = 30%  Labour & overhead charges per hr = Rs. 25  Electrode consumption = 0.35 kg/metre  Electrode price = Rs. 20 per kg  Arc voltage = 22 volts  Arc current = 200 Amps  E = 0.6  Rate per kWhr = Rs. 0.80 | CO1 | 15 |
| b. | Table the Supplementary symbols. | CO1 | 05 |
| **(OR)** | | | | |
| 4. | a. | Define the characteristics of welding joints. | CO1 | 15 |
| b. | Analyze the factors affecting dilution. | CO1 | 05 |
|  |  |  |  |  |
| 5. |  | Outline the methods to reduce welding stresses to a minimum. | CO1 | 20 |
| **(OR)** | | | | |
| 6. |  | List the various practical ways for minimizing the distortion caused by contraction. | CO1 | 20 |
|  |  |  |  |  |
| 7. | a. | Explain Magnetic particle inspection in non-destructive testing of welding process. | CO1 | 15 |
| b. | Outline the various factors promoting entrapment of inclusion. | CO1 | 05 |
| **(OR)** | | | | |
| 8. | a. | Explain any one destructive test as applied to welds. | CO1 | 18 |
| b. | Explain the advantages of Plasma arc welding. | CO1 | 02 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Define Friction welding with sketch, application, advantage and disadvantage. | CO1 | 10 |
| b. | Discuss the basic welding processes that are used to join thermoplastics. | CO1 | 10 |