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

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

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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. | Describe the procedure of oxy-acetylene welding process and give its advantages over other welding techniques. | CO1 | 10 |
| b. | What is the principle of arc welding? With a neat sketch explain the working procedure of metal arc welding. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | With the aid of sketches, discuss the various types of resistance welding processes. | CO1 | 14 |
| b. | Discuss briefly the safety aspect to be followed in view of arc radiations, fumes and spatter. | CO1 | 6 |
|  |  |  |  |  |
| 3. | a. | A T-joint is to be made between two plates using i) chain intermittent double fillet welds of 8mm leg length and length 50mm with a centre-to-centre spacing of 150mm, and ii) staggered intermittent double fillet weld of leg length of 8mm and length of 75 mm with a centre to centre spacing of 200mm. Sketch the desired welds and their symbols, if the welds are to be made of CO2 welding process at site. | CO1 | 15 |
| b. | With an appropriate sketch, explain the essential elements of welding symbols. | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | For the fillet welded structure as shown in figure, determine the sizes of the fillet welds. Permissible value of the shear stress on section through the throat of the fillet welds may be taken as 1000 kg/cm2.  D:\KARUNYA UNIVERSITY\18-19 ODD SEM\18-19 Subjects\Welding Technology\Final SEM Question\1.jpg | CO1 | 10 |
| b. | For the structure shown in figure, determine the two fillet weld lengths *l1* and *l2*. Assume working stress in shear in fillet welds is 800 kg/cm2 and size (S) of fillet is 20mm.  D:\KARUNYA UNIVERSITY\18-19 ODD SEM\18-19 Subjects\Welding Technology\Final SEM Question\2.jpg | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | Propose any two welding techniques for joining cast iron and state its merits and demerits. | CO1 | 10 |
| b. | Discuss in detail the processes employed for welding carbon steels. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Classify the types of stainless steel and summarize the welding characteristics of austenitic stainless steel. | CO1 | 8 |
| b. | Why A.C. power source is preferred for aluminium welding? Explain in detail. | CO1 | 12 |
|  |  |  |  |  |
| 7. | a. | Summarize the different methods employed to minimize the welding stress generated in a workpiece. | CO1 | 10 |
| b. | What do you mean by workpiece distortion? With the suitable examples describe the different types of distortions. | CO1 | 10 |
| (OR) | | | | |
| 8. |  | Discuss the various NDT test methods performed in testing of weldments. | CO1 | 20 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Write notes on Electron Beam Welding and Explosive Welding. | CO1 | 16 |
| b. | What is cold welding. Write its applications. | CO1 | 4 |