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



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

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| **Code :** | **17EI2022** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INSTRUMENTATION AND CONTROL IN IRON AND STEEL INDUSTRIES** | **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 on the role of oxygen furnace in iron and steel industry. | CO1 | 15 |
| b. | Justify the need of electric furnace in Iron and Steel Industry. | CO1 | 5 |
| **(OR)** | | | | |
| 2. | a. | How the raw material is handled in Iron and Steel Industry? | CO1 | 15 |
| b. | Describe the significance of stoves in steel manufacturing plant. | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Explain the heat treating and finishing process in steel. | CO2 | 15 |
| b. | Compare sand moulding process in detail. | CO1 | 5 |
| **(OR)** | | | | |
| 4. | a. | Describe the various steel rolling process done in steel industry. | CO1 | 15 |
| b. | What is sand casting? Explain in detail. | CO1 | 5 |
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| 5. | a. | With a neat sketch, explain the function of pressure sensors used in steel industry. | CO2 | 15 |
| b. | Illustrate the flow measurement of molten steel for the production of ingot in steel industry. | CO2 | 5 |
| **(OR)** | | | | |
| 6. | a. | Illustrate the water and gas cooling system of BOF. | CO3 | 15 |
| b. | Explain in detail about blast furnace stove combustion control. | CO3 | 5 |
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| 7. | a. | With a neat sketch, describe the operation of sand casting mould level control in steel manufacturing plant. | CO2 | 15 |
| b. | Describe the necessity of waste water treatment plant in steel industry. | CO3 | 5 |
| **(OR)** | | | | |
| 8. | a. | Explain in detail any one of the non-contact type thickness measurement. | CO2 | 15 |
| b. | Write short notes on basis weight measurement. | CO2 | 5 |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain in detail about the role of center utility dispatch computer in control and monitoring the various process of steel industry. | CO3 | 20 |