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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May – 2017**

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| **Code :** | **14EI2022** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INSTRUMENTATION CONTROL IN IRON & 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. | Explain the various process involved in iron and steel industry. | CO2 | 14 |
| b. | Draw the flow diagram of steel making process. | CO1 | 6 |
| (OR) | | | | |
| 2. | a. | With a neat sketch explain the operation of Basic Oxygen Furnace (BOF) in steel production. | CO1 | 12 |
| b. | Explain the operation of electric furnace used in steel industry. | CO2 | 8 |
| 3. | a. | List the various moulding process in steel casting? With the neat sketch explain any one in detail. | CO1 | 10 |
| b. | Explain the primary steel rolling process and discuss its advantages and  Disadvantages. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Briefly discuss the applications of steel casting process in steel manufacturing industries. | CO3 | 12 |
| b. | Describe the annealing process done in stell manufacturing plant. | CO1 | 8 |
| 5. | a. | Briefly discuss the need of density measurement in steel industry. | CO2 | 12 |
| b. | What are the advantages of radiation pyrometer used in steel industry? | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | With the neat sketch, explain the function of pressure sensors used in steel industry. | CO2 | 14 |
| b. | What are the graphic displays and alarms used in iron and steel industry? | CO1 | 6 |
| 7. | a. | With a neat sketch, describe the operation of strand casting mould level control in steel manufacturing plant. | CO3 | 8 |
| b. | Draw the schematic diagram of stoves used in iron and steel industries and discuss the vrious controls needed in stove combustion system. | CO1 | 12 |
| (OR) | | | | |
| 8. | a. | With a neat sketch explain the blast furnace stove combustion control systems. | CO3 | 12 |
| b. | Draw and explain the waste water treatment in iron and steel industry. | CO3 | 8 |
|  | | **Compulsory:** |  |  |
| 9. | a. | With the suitable block diagram explain about how the computer control helps to run the steel rolling mill for desired output and accuracy. | CO1 | 14 |
| b. | Write short note on center utility dispatch computer in steel plant. | CO1 | 6 |

ALL THE BEST