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



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

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| **Code :** | **14EI2024** | **Duration :** | **3hrs** |
| **Sub. Name :** | **POWER PLANT INSTRUMENTATION** | **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 components of a nuclear reactor and the power generation process with a block diagram. | CO1 | 10 |
| b. | Discuss on the photovoltaic and thermal conversion methods of generating electricity from solar energy. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Explain the different elements of a thermal power plant with a neat layout. | CO1 | 12 |
| b. | Elucidate the importance of Instrumentation and Control in Power Generation. | CO1 | 8 |
|  |  |  |  |  |
| 3. | a. | Describe the working of Current Transformer and Potential Transformer with circuit diagrams. | CO2 | 12 |
| b. | Interpret the techniques used to analyze the impurities present in the feed water. | CO2 | 8 |
| **(OR)** | | | | |
| 4. | a. | Analyse the significance of condensation pot in flow measurement system with suitable diagram. | CO2 | 10 |
| b. | Derive the expression of a V/I converter used in power plants. | CO2 | 10 |
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| 5. | a. | Discuss the concept of shrinking and swelling in boiler drum water level measurement. | CO2 | 10 |
| b. | Explain the installation of temperature sensors for water and steam temperature measurement. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Explain the working of different types of Oxygen Gas Analyser. | CO2 | 12 |
| b. | Illustrate the working of caloriemeter for measurement of heating value of fuel. | CO2 | 8 |
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| 7. | a. | Elaborate on the concept of chromatography and discuss its types with necessary diagrams. | CO2 | 10 |
| b. | Discuss the working of smoke detector and dust monitor with necessary diagrams. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | Describe the series and parallel air fuel ratio control. | CO3 | 10 |
| b. | Elaborate on the steam temperature control. | CO3 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Illustrate the role of Distributed Control System in thermal power plant. | CO3 | 12 |
| b. | Explain the working of vibration monitoring system. | CO3 | 8 |