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



**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **14EI2020** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INSTRUMENTATION AND CONTROL IN PETROCHEMICAL 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. | Demonstrate the working of basic distillation equipment with a neat sketch. | CO1 | 10 |
| b. | Elaborate any two pressure control schemes in the distillation column. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Explain about the column feed temperature control. | CO2 | 10 |
| b. | Illustrate the working of Reflux Control by maintaining the Boil-up rate. | CO2 | 10 |
|  |  |  |  |  |
| 3. | a. | Elucidate about the various cascade temperature controls involved in chemical reactors. | CO2 | 16 |
|  | b. | Point out the advantages of Cascade Controller over feedback controller. | CO3 | 4 |
| (OR) | | | | |
| 4. |  | Summarize the working of various continuous Dryers with neat diagrams. | CO3 | 20 |
|  |  |  |  |  |
| 5. |  | Describe the different types of control implicated in Liquid-to-Liquid Heat exchanger. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Discuss about the various Instrumentation and controls involved in condenser. | CO2 | 16 |
|  | b. | Evaluate the degrees of freedom of Steam Heater. | CO2 | 4 |
|  |  |  |  |  |
| 7. |  | Categorize the different types of Evaporators and explain their working in detail with necessary diagrams. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | Show the measurement and control of absolute pressure in an evaporator. | CO3 | 10 |
|  | b. | Apply the concept of feedback control in evaporator. | CO3 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Illustrate the concept of batch and continuous chemical oxidation in the waste water treatment with relevant chemical equations. | CO3 | 20 |

ALL THE BEST