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

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

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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 column feed temperature control with a neat sketch. | CO3 | 5 |
| b. | Discuss about the various control and instrumentation involved in the Reboiler. | CO3 | 15 |
| (OR) | | | | |
| 2. | a. | Summarize the working of basic distillation equipment, with a neat sketch. | CO1 | 6 |
| b. | Describe the pressure control of distillation column with necessary diagrams. | CO3 | 14 |
|  |  |  |  |  |
| 3. | a. | Illustrate the pressure control in the chemical reactor by controlling modulating gas makeup. | CO3 | 5 |
| b. | Discuss about the cascade temperature control in chemical reactors. | CO3 | 15 |
| (OR) | | | | |
| 4. |  | Explain the various types of continuous dryers with necessary diagrams. | CO1 | 20 |
|  |  |  |  |  |
| 5. |  | Indicate the controls involved in condenser and explain its working with necessary diagrams. . | CO3 | 20 |
| (OR) | | | | |
| 6. | a. | Determine the degrees of freedom of steam heater. | CO1 | 16 |
| b. | Review on the working of controls involved in three way valves of liquid to liquid heat exchanger. | CO3 | 4 |
|  |  |  |  |  |
| 7. |  | Elaborate the different types of controls involved in Evaporators with necessary diagrams. | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | With necessary diagrams, discuss about the working of any four types of evaporators. | CO1 | 16 |
| b. | Write short notes on the multiple effect evaporator with examples. | CO1 | 4 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Show the working of continuous chemical oxidation with necessary equations and block diagram. | CO2 | 12 |
| b. | Interpret the concept of chemical reduction in the waste water treatment. | CO2 | 8 |