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 – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EI2008** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INDUSTRIAL 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. | What are the types of electrical pressure transducers used in process industry? Explain with a neat sketch , the construction and working of a strain gauge pressure transducer, with its advantages and disadvantages. | CO1 | 12 |
| b. | What are the different steps to be followed during calibration of a pressure transmitter? | CO2 | 8 |
| (OR) | | | | |
| 2. | a. | Explain with the neat sketches, the working and construction of Fiber – Optic temperature measurement system. | CO2 | 10 |
| b. | What do you mean by the term ‘Periodic Maintenance’? Explain. | CO2 | 10 |
| 3. | a. | Explain, with a neat sketch, the construction and working of a McLeod gauge. | CO3 | 10 |
| b. | Define the following terms:  gauge pressure b) absolute pressure c) differential pressure | CO3 | 10 |
| (OR) | | | | |
| 4. | a. | With the neat sketch explain the operation of eddy current level measurement. | CO1 | 10 |
| b. | Describe any method of liquid level measurement for measuring the level of a corrosive liquid. | CO3 | 10 |
| 5. | a. | Explain the principle and operations of air purge system. Discuss its merits and demerits. | CO2 | 10 |
| b. | With the neat sketch explain the concept of capacitance type level measurement and discuss its advantages and disadvantages. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Explain the principle and operation of electromagnetic flow meter with neat sketches. | CO2 | 10 |
| b. | Describe the theory of fixed restriction variable head flow meter. | CO1 | 10 |
| 7. | a. | How pressure is measured using diaphragms? Give the relation between displacement and pressure. |  |  |
| b. | Explain the principle and operations of ultrasonic level detector. Discuss its merits and demerits. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | Describe with the help of a diagram, the construction and working of a thermocouple type pyrometer. | CO3 | 10 |
| b. | With the neat sketch explain the operating principle of Optical Pyrometer. | CO2 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | With a neat sketch, explain the construction and working of a magnetic method of density measurement. | CO1 | 10 |
| b. | Describe with neat sketch the construction and working of pycnometric densitometer. | CO3 | 10 |

ALL THE BEST