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 :** | **14EI2008** | **Duration :** | **3 hrs** |
| **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. | Draw a neat sketch to show the essential parts of a bourdon tube pressure gauge. Describe the purpose of each part. What are the two types of adjustment done in a bourdon tube gauge? | CO1 | 12 |
| b. | With neat sketch explain the operating principle of Radiation Pyrometer. | CO1 | 8 |
| (OR) | | | | |
| 2. | a. | What are the different types of manometers? Explain the working of any two of them with the neat sketch. | CO3 | 10 |
| b. | What are the various types of filled-type Thermometers? Explain in detail the working of any one of them. | CO2 | 10 |
| 3. | a. | What are the different types of diaphragm pressure transducers? Explain with a neat sketch any two of them. | CO2 | 14 |
| b. | What is thermistor? Explain how the temperature can be converted into electrical voltage? | CO3 | 6 |
| (OR) | | | | |
| 4. | a. | Explain the principle and operation of Bimetallic Thermometer with neat sketches. | CO2 | 10 |
| b. | Describe with the help of a diagram, the construction and working of a thermocouple type pyrometer. | CO1 | 10 |
| 5. | a. | Explain the working, construction, advantages and disadvantages of a resistance thermometer. | CO3 | 10 |
| b. | With the neat sketch explain the operating principle of Optical Pyrometer. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | With neat sketch explain the operating principle of electromagnetic flow meters. | CO1 | 10 |
| b. | With neat sketch explain the operating principle of dead weight tester. | CO2 | 10 |
| 7. | a. | What is hydrostatic pressure? Explain the concept of pressure gauge method in level measurement. | CO2 | 10 |
| b. | Describe with a neat sketch the construction and working of a radiation level indicator. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Describe with a neat sketch the working of time of reflection method of laser level measurement. | CO3 | 10 |
| b. | Explain the principle and operations of air purge system. Discuss its merits and demerits. | CO2 |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | Describe with neat sketch the construction and working of magnetic method of density measurement. | CO1 | 10 |
| b. | Describe with neat sketch the construction and working of pycnometric densitometer. | CO3 | 10 |