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 :** | **14EI2039** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INSTRUMENTATION CONTROL FOR AVIONICS** | **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 construction and operation of an altimeter. Explain the features which improves its accuracy. | CO1 | 10 |
| b. | Describe how a mercury barometer measures atmospheric pressure. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Describe the construction of a typical thermocouple probe assembly used for turbine – engine exhaust gas temperature. | CO2 | 10 |
| b. | What is mean by pressure error of a pitot – static system. | CO2 | 10 |
| 3. | a. | Explain the operation of a vertical speed indicator when the aircraft in which it is installed goes from a level flight attitude into a climb attitude. | CO1 | 10 |
| b. | Write short note on pressure error correction transducer. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain how the Wheatstone bridge circuit may be utilized for the measurement of temperatures. | CO2 | 10 |
| b. | On what fundamental principle does a radiation pyrometer system operate? Briefly describe a practical system. | CO1 | 10 |
| 5. | a. | Describe the construction and operation of an airspeed indicator. Explain any features which improves its accuracy. | CO3 | 10 |
| b. | Define the following:   1. Troposphere b) Tropopause c) Stratosphere | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Explain the fundamental operating principle of the Bourdon tube. | CO1 | 10 |
| b. | Describe how temperature can cause variations in the properties of substances? | CO2 | 10 |
| 7. | a. | Describe the operation of a servo – operated type of tachometer indicator. | CO2 | 10 |
| b. | With the neat sketch explain the concept of capacitance type level measurement and discuss its advantages and disadvantages. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | With the help of neat sketch explain the principle of a generator and indicator system. | CO3 | 10 |
| b. | How does a 3 – axis accelerometer works? Explain with the necessary diagrams. | CO3 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Draw a circuit of a typical capacitance type fuel quantity indicating system. Explain the operating principle. | CO1 | 10 |
| b. | Describe that why is it preferable for fuel quantity indicating system to measure fuel weight rather than fuel volume? | CO2 | 10 |

ALL THE BEST