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



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

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| **Code :** | **14EI2039** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INSTRUMENTATION AND 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. | Categorize the characteristics of display used in high-range measurements and explain any two in detail. | CO2 | 15 |
| b. | Enumerate the function of head up display. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Discuss the four principal elements which make up an instrument and explain any one application to aircraft instruments. | CO2 | 15 |
| b. | Explain why a vertical speed indicator is unaffected by pressure error. | CO2 | 5 |
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| 3. | a. | Show the principal components and instruments which comprise an aircraft pitot static system? | CO1 | 15 |
| b. | Draw the circuit diagram of a typical pressure head heating system and explain its operation. | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | Describe the construction and operation of an airspeed indicator. | CO2 | 15 |
| b. | Write a brief outline features of altimeter which improves its accuracy. | CO1 | 5 |
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| 5. | a. | Describe how a rate Gyroscope principle is applied for Turn and Bank indicator. | CO3 | 15 |
| b. | Briefly explain any two fundamental properties of a gyroscope. | CO3 | 5 |
| (OR) | | | | |
| 6. | a. | Discuss briefly the principle of operation of a directional gyro. | CO1 | 15 |
| b. | Describe how the gyroscopic principle applied to a gyro horizon? | CO2 | 5 |
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| 7. | a. | Describe the operation of an engine vibration indicator. With neat sketch explain the construction of sensing device. | CO2 | 15 |
| b. | How does a three axis accelerometer works? Explain with the necessary diagrams. | CO3 | 5 |
| (OR) | | | | |
| 8. | a. | Describe a method of utilizing the voltage generated by exhaust-gas thermocouples for controlling the gas temperature | CO3 | 15 |
| b. | Describe how temperature can cause variations in the properties of substances? | CO3 | 5 |
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|  | | **Compulsory:** |  |  |
| 9. | a. | Describe the construction and operation of a float type and capacitor type of fuel quantity indicating system. | CO1 | 15 |
| b. | What effects do temperature changes have on the fuels used? | CO2 | 5 |