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

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

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| **Code :** | **14AE2010** | **Duration :** | **3hrs** |
| **Sub. Name :** | **AIRCRAFT 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. | List out the different temperature compensation techniques used in aircraft indicating systems and explain. | CO1 | 12 |
| b. | Explain gear and hairspring mechanism in detail. | CO1 | 8 |
| (OR) | | | | |
| 2. | a. | Mention the requirements and standards for designing and manufacturing of different aircraft instruments. | CO1 | 14 |
| b. | Explain the following terms.   1. Calibration and Sensitivity 2. Repeativity and Reproduceability 3. Precision and Accuracy | CO1 | 6 |
|  |  |  |  |  |
| 3. | a. | Describe how pitot and static ports are helpful in working of certain instruments. | CO2 | 5 |
| b. | Explain with a neat sketch working of the gyroscopic instruments. | CO2 | 15 |
| (OR) | | | | |
| 4. | a. | Demonstrate the working principles of Vertical Speed Indicator and Altimeter with a neat diagram. | CO2 | 14 |
| b. | Explain the basic component in aircraft instruments that exhibits rigidity and precession. | CO2 | 6 |
|  |  |  |  |  |
| 5. |  | Demonstrate with a sketch the working principles of the following.   1. Temperature Sensing Element 2. Radiation Pyrometer System | CO2 | 10+10 |
| (OR) | | | | |
| 6. | a. | Describe the RAT and TAT measuring systems. | CO2 | 14 |
| b. | Sketch a temperature sensing element and explain. | CO2 | 6 |
|  |  |  |  |  |
| 7. | a. | Explain the working of strain gauge, LVDT and photoelectric cells. | CO2 | 10 |
| b. | List out the transducers of resistive position and capacitive type and explain. | CO2 | 10 |
| (OR) | | | | |
| 8. |  | Explain the following:   1. Tachometer 2. Engine vibration measuring system 3. EPR | CO2 | 6  7  7 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Classify the various data transmission systems and explain. | CO2 | 20 |