Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2018 – 19 Examination

Semester: 4 **Date: 29/04/2019**
Subject Code: 03101251 **Time: 02:00 pm to 04:30 pm**
Subject Name: Aircraft Systems & Instruments **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 **Objective Type Questions** - (All are compulsory) (Each of one mark) **(15)**

1. In general, the _____ altitude at which an aircraft can fly is limited by the maximum allowable cabin differential pressure.
2. _____ actuators receive signals from the flight control computer and convert them into control surface motion for optimal flight control and flying qualities.
3. The brakes are used for slowing, stopping, _____, or steering the aircraft.
4. Indicated Altitude read directly from which device?
   (a) altimeter (b) Machmeter (c) Tachometer (d) None
5. Accelerometer used on new airplanes during test flights to measure the
   (a) acceleration loads (b) Torque loads
   (c) pressure loads (d) None
6. The Control Display Unit (CDU or MCDU) provides the primary human/machine interface for
   (a) data entry and information display (b) intercooler display
   (c)control display (d) None
7. Qualitative, in which the information is presented in _____ or pictorial form.
8. The flight director usually receives input from an _____ and a Flight data computer.
   (a) ADC (b) BDC
   (c) DDC (d) None
9. Electromagnetic coil under the skin induces _____ on surface.
   (a) strong eddy currents (b) normal eddy currents
   (c) Low eddy currents (d) All of the above
10. Class D types of fire system involving combustible metals such as _____, titanium, zirconium, sodium, lithium, and potassium.
11. Define accumulator used in aircraft.
12. What is the function of thermal switch?
13. Define Density Altitude.
14. Explain in short about Heading Indicator.
15. Define Integral Fuel Tank.

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Explain Carburetor Icing with diagram.
B) Explain Pump Feed Systems with diagram.
C) Discuss and elaborate thePush pull Rod Control System.
D) Explain about the Quantitative and Qualitative displays.

Q.3 A) Discuss different classes of fires that are likely to occurring onboard aircraft. **(07)**
B) What is Airspeed Indicator? And explain types of Airspeeds. **(08)**

OR

B) Explain Turn and Bank Indicator and Machmeter. **(08)**

Q.4 A) How the Flight management system works and also explains its operation. **(07)**

OR

A) Explain about the Flight Director. **(07)**
B) How shimmy damper controls works and explain types of shimmy dampers commonly used on aircraft. **(08)**