

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014

Subject Code: 140103**Date: 27-06-2014****Subject Name: Aircraft System and Instruments****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Briefly explain working of gear and vane pump of hydraulic system of an aircraft. **07**
(b) With neat sketch explain working of Mach meter. **07**

- Q.2 (a)** How pressurization is maintained in fuselage? Why lower baggage compartment is pressurized during flight in public transport aircrafts. What action a pilot takes in case of engine failure during flight to prevent hyperventilation? **07**
(b) Briefly explain the system which records flight data and communication in cockpit. **07**

OR

- (b)** How pilots come to know about air speed of aircraft? Explain the system which provides information about above mentioned data. **07**

- Q.3 (a)** With neat sketch explain working of turbo jet engine. **07**
(b) With neat sketch explain working of hydraulic system for undercarriage. **07**

OR

- Q.3 (a)** With neat sketch show the different configuration of reciprocating engine and give any two examples of piston propeller aircraft with specification. **07**
(b) Explain gas turbine engine instrument panel in brief. **07**

- Q.4 (a)** Explain construction of altimeter with neat sketch. **07**
(b) Explain system which helps pilot to remove ice from leading edges and prevent ice formation during flight. **07**

OR

- Q.4 (a)** What is Engine Pressure Ratio? How pilot come to know about stall and surging of compressor during flight? **07**

- Q.4 (b)** What is gyroscope? How does it help pilot to navigate from one place to other? **07**

- Q.5 (a)** With neat sketch explain how Altimeter works. **07**
(b) Differentiate between single and double acting actuator with neat sketch. **07**

OR

- Q.5 (a)** With neat sketch explain how fire extinguisher system works if engine catches fire? **07**
(b) In a sentence write application or importance of below mentioned flight instruments. **07**
Directional Gyro Instrument, Exhaust Gas Temperature Gauge, Mach Meter, Tachometer, Attitude Indicator, Fuel flow indicator, Cylinder Head Temperature Gauge.
