

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – WINTER • 2014****Subject Code: 140103****Date: 05-01-2015****Subject Name: Aircraft System and Instruments****Time: 02:30 pm - 05:00 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 characteristics - properties of aviation fuel and its sources. **07**
(b) Draw sketch of gas turbine engine showing different sections with operation. **07**
Write requirement of accessories (gear) box
- Q.2** (a) Enlist Gas turbine engine instruments and explain capacitance type total fuel quantity indicator with figure. **07**
(b) Describe different types of turbine engine compressors and their function. **07**
- OR**
- (b) Explain Air conditioning system of any transport aircraft. **07**
- Q.3** (a) Explain gravity feed fuel system of a light aircraft. **07**
(b) Enlist hydraulic system components. Explain operation and usage of Gear pump of hydraulic system with perfect figure. **07**
- OR**
- Q.3** (a) Explain in brief Types (sources) of hydrolytes. **07**
(b) Explain operation of oil lubricating system of jet turbine engine. What is open loop and close loop system? **07**
- Q.4** (a) Explain operating principle of Air speed indicator with figure showing connections. Define true air speed. **07**
(b) Describe DME operation, purpose and principle with required sketch. **07**
- OR**
- Q.4** (a) Write function of Altimeter with operating sketch and connection. **07**
(b) Describe different gyro power sources and explain them. **07**
- Q.5** (a) Explain flight management system. **07**
(b) Explain configuration and types of landing gears with figure. **07**
- OR**
- Q.5** (a) Explain gyroscopic heading indicator and its axis of rotation with figure. **07**
(b) What are primary and secondary controls used on transport aircraft? Explain with figure. **07**
