

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEMESTER-IV • EXAMINATION – SUMMER-2015

Subject Code: 140103

Date: 05/06/2015

Subject Name: Aircraft Systems and Instruments

Time: 10.30am-01.00pm

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) Write operation of jet turbine engine with figure. **07**
(b) Explain properties of aviation fuel and sources. **07**
- Q.2** (a) Enlist gas turbine engine instruments. Explain total quantity fuel indicator using capacitance principle. **07**
(b) What is hydraulic fuse and its use in hydraulic system? **07**
- OR**
- (b) Explain operation of pressure switch with figure and use. **07**
- Q.3** (a) Enlist Hydraulic system components and operation of gear pump with figure. **07**
(b) Explain instrument panel layout. What is grouping of instruments and its necessity? **07**
- OR**
- Q.3** (a) What are the primary aircraft controls? Explain in brief with their location and axis of operation. **07**
(b) Mention names of flight instrument and explain air speed indicator. **07**
- Q.4** (a) Describe principle of gyroscope with properties. **07**
(b) Explain attitude indicator (artificial horizon indicator) operation and axis of rotation using gyroscope principle. **07**
- OR**
- Q.4** (a) Explain heading indicator operation and axis of rotation using gyroscope principle. **07**
(b) Explain operation and principle of engine pressure ratio indicator (EPR). **07**
- Q.5** (a) Explain auxiliary systems used in aircraft with its utility. **07**
(b) Describe structure of a large passenger aircraft wings. Differentiate cantilever and semi cantilever wings/ **07**
- OR**
- Q.5** (a) Explain operation of black box, its location and parameters of data. **07**
(b) Describe structure of a large passenger aircraft fuselage. **07**
