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**

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