Seat No.: _____ Enrolment No._____

GUJARAT TECHNO LOGICAL UNIVERSITY

BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2015

Subject Code: 2140103 **Date: 05/06/2015**
Subject Name: Aircraft Systems, Instruments and Maintenance
Time: 10:30am-1.00pm **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)**	Explain pitot-static system with ice protecting system with neat figure. Which instruments are operated by air data from pitot-static?	**07**
	(b)	Explain gyroscope, its principle, its properties and name instruments with gyro application.	**07**
Q.2	**(a)**	Enlist jet turbine instruments and explain electrical tachometer with principle, operation and figure.	**07**
	(b)	What do you understand by flap position indicator, how signal is transmitted and how it works? Draw figure showing operating principle in details.	**07**
		OR	
	(b)	Describe exhaust gas temperature indicator of gas turbine engine, its sensor and sensor working principle with detailed diagram.	**07**
Q.3	**(a)**	Why turbo shaft engine is preferred for rotorcraft? Write differences of turbo fan and jet turbine engines.	**07**
	(b)	What is thrust reversal? Explain operation, types and location with figure.	**07**
		OR	
Q.3	**(a)**	Explain aircraft hydraulic system, requirement and components used with short note and block diagram.	**07**
	(b)	Write dual rudder paddle and nose brake operation with working figure.	**07**
Q.4	**(a)**	Enlist hydraulic components and operation of gear type pressure pump with figure. What is engine driven gear pump?	**07**
	(b)	Explain thrust augmentation methods and describe any one with details and figures.	**07**
		OR	
Q.4	**(a)**	How crew cabin and passenger compartment are pressurized and why?	**07**
	(b)	Explain lubricating system of reciprocating engine of an aircraft with figure.	**07**
Q.5	**(a)**	Explain twin engine fuel system in brief with schematic diagram. What is the role of strainer and filter in the system?	**07**
	(b)	Classify gas turbine engine and components.	**07**
		OR	
Q.5	**(a)**	Explain operation of jet turbine engine section wise and starting procedure.	**07**
	(b)	What is EPR and how is it useful to flight crew?	**07**

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