

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION – SUMMER 2013

Subject Code: 150105

Date: 29-05-2013

Subject Name: Operation and Maintenance of aircraft

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) Why do we require DC voltage in aircraft? Which are different sources of DC power in an aircraft? Why do we require regulators in the power supply? What is the purpose of auxiliary power plant? What is paralleling of generators? **07**
- (b) With the help of a diagram explain any battery system in an aircraft. What is load sharing and synchronization in electrical power system? **07**
- Q.2** (a) For electrical power distribution how the loads are classified? Briefly explain with the help of a simple figure. How the protection is provided to power distribution system? **07**
- (b) What are advantages of central Warning system? How do we achieve it in Engine Indicating and Crew Alerting System? **07**
- OR**
- (b) What is meant by economy of maintenance? How do we make compromise between high RandD as well as Manufacture cost and frequent breakdowns? With the help of a pie chart show the maintenance cost of a transport aircraft as percentage of operating cost. **07**
- Q.3** (a) How do we maintain hydraulic system in an aircraft in a good operating condition? Which are different components involved. Briefly explain with the help of diagram. **07**
- (b) What are aircraft surface contamination and fuel contamination? How do we minimize their affect of the flight? **07**
- Q.3** (a) Explain maintenance philosophy for aviation industry. Which are good maintenance practices in general. **07**
- (b) What is the advantage of a transceiver over separate transmitter and receiver in the aircraft? With the help of diagram explain any receiver. **07**
- Q.4** (a) Explain the operation of Electronic Flight Instrument System (EFIS) with the help of a block diagram. **07**
- (b) How do we give ground run to a jet engine? What all precautions are to be observed? Which are the occasions when the ground run can be given? **07**
- OR**
- Q.4** (a) Explain the operation of tail plane and landing gear. **07**
- (b) Which are different ground equipments required for maintenance and operation of aircraft? What is their purpose? **07**
- Q.5** (a) With the help of block diagram explain the operation of any primary radar in the aircraft. **07**
- (b) How is welding done on aircraft parts? What is the equipment used? What precautions should be followed? **07**

OR

- Q.5** (a) What is the difference between assembly and rigging of an aircraft? How do we carry out symmetry check on different parts during rigging? How do we check and adjust dihedral? **07**
- (b) With the help of diagram explain operation of typical VOR ground installation. **07**
How is TACAN associated with it?
