

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 140103****Date: 02/06/2012****Subject Name: Aircraft Systems and Instruments****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) Explain aircraft engine fuel system, list components and write engine driven fuel pump function with figure. **07**
- (b) What do you understand by Head up display? Explain with figure and examples. What is “Basic T flight instrument grouping” explain with figure. **07**
- Q.2** (a) Describe types of reciprocating engine according to cylinder arrangement. What do you understand by Single-Row and Double-Row radial engines? **07**
- (b) Explain power plant instrument grouping with figure for four engine aircraft in details. **07**
- OR**
- (b) Why heaters are provided in pitot-static (probe) head with figure of D.C. circuit. Explain the circuit. **07**
- Q.3** (a) Write operational principle of turboprop engine with figure and explain its exhaust system with figure. **07**
- (b) Explain pneumatic type altimeter, its operations and construction with figure. **07**
- OR**
- Q.3** (a) Discuss axial flow turbine engine construction with all sections and figures. **07**
- (b) Describe three degree freedom gyroscope construction, its operating principle and properties with figure. **07**
- Q.4** (a) Elucidate reciprocating engine magneto ignition system and principle of operation with figure. **07**
- (b) Describe RPM indicator using principle of “Generator and Indicator system” with figure. **07**
- OR**
- Q.4** (a) Explain different types of shimmy dampers and function of dampers. **07**
- (b) Explain EGT operation. Explain its sensor with principle and types with figures. **07**
- Q.5** (a) Briefly describe different types of gas turbine starters, show complete circuit and function of starter generator system. **07**
- (b) Explain pneumatic type horizon gyroscope with operation and figure. **07**
- OR**
- Q.5** (a) Describe icing effect on aircraft flight with figure and suggest different methods used for prevention. **07**
- (b) Explain aircraft communication system and describe HF, VHF with figure showing operation and navigation equipment. **07**
