

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014

Subject Code: 170105

Date: 31-05-2014

Subject Name: Advance Avionics

Time: 02.30 pm - 05.00 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 fault tolerance methodology. Discuss its importance in Avionics System Design. **07**
- (b)** What do you understand by Reliability? What are the various factors governing Reliability at design stage of Avionics Systems? **07**

- Q.2 (a)** Explain both methods of packaging the avionics namely ARINC and DOD-STD style. **07**
- (b)** What is Fault Tree Analysis? Explain its procedure with suitable line diagrams. **07**

OR

- (b)** Describe the working of a conventional CRT. Briefly mention the other types of displays presently used and their advantages over conventional CRT displays. **07**

- Q.3 (a)** Write Short Notes on (any two): **07**
(1) Night Vision Goggles (2) TCAS (3) Ground proximity (4) Warning System
- (b)** Discuss the need for keeping the Avionics systems cool. Explain the methods of cooling procedure. **07**

OR

- Q.3 (a)** Explain in detail Ada-95. Also discuss Failure Modes and Effect Analysis. **07**
- (b)** Discuss the importance of decision on maintenance by Who, When and Where. **07**

- Q.4 (a)** What is collision avoidance system in aircraft? Briefly explain its working principle. **07**
- (b)** What do you understand by Human Factor Engineering? How does it affect aviation system design? **07**

OR

- Q.4 (a)** Explain Electronic Warfare. Describe few ECM practices and how they are countered by adequate ECCM methods. **07**
- (b)** With the help of a line diagram explain DO-178 Software Development and Validation Procedure. **07**

- Q.5 (a)** Discuss the relation between Aircraft Mission and choice of Avionics Systems with suitable examples. **07**
- (b)** What is certification in Aviation operating procedure? Mention various certification authorities existing worldwide with their jurisdiction. **07**

OR

- Q.5 (a)** Describe the purpose and working principle of Head Mounted Display with the help of suitable diagram. **07**
- (b)** Mention the importance of Weather Radar in an aircraft. Also explain its working principle. Why extremely high frequencies are chosen for its operation? **07**
