Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIth SEMESTER–EXAMINATION – MAY- 2012

Subject code: 160106 **Date: 22/05/2012**

Subject Name: AVIONICS

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)	What is the principle of direction finding? What is automatic direction finding? Explain ADF with a simple diagram. What errors are encountered in direction finding?	07
	(b)	What is non directional beacon? With the help of a block diagram explain a NDB radio receiver.	07
Q.2	(a)	What is a VOR? What are it's advantages over NDB? With the help of a sketch explain Doppler VOR ground station?	07
	(b)	What is a primary radar? With the help of a block diagram explain a primary radar? What is meant by pulse width, pulse repetition frequency, operating frequency of radar, peak pulse power, & radiation pattern.	07
		OR	
	(b)	What is a secondary radar? What is the purpose of Secondary surveillance radar (SSR)? Give examples of SSR in aviation.	07
Q.3	(a)	What is Distance Measuring Equipment (DME)? With the help of block diagram explain the functioning of a DME interrogator.	07
	(b)	What is Microwave Landing Systems (MLS) ? How does it differ from Instrument Landing System (ILS)?	07
		OR	
Q.3	(a)	What is Global Positioning Systems (GPS)? How does this system work? Explain with the help of a simple diagram. Is all information available to all the people?	07
	(b)	What is Tactical Air Navigation (TACAN)? What is VORTAC? Briefly explain TACAN antenna.	07
Q.4	(a)	What is meant by Avionics Architecture? What different systems have been used in the integration of the avionics system? What are their relative advantages & disadvantages?	07
	(b)	What is meant by Digital communication & Networking in the aircraft? What is Fly-By-Wire Flight Control system?	07
		OR	
Q.4	(a)	What are Head-Up Displays & Helmet Mounted Displays? What are their	07

advantages over CRT displays?

Q.4	(b)	What is Satellite communication systems? How does it function? What are it's advantages and disadvantages?	07
Q.5	(a)	What is avionics? Which all systems comprise of avionics? What is their purpose? Explain each of them briefly.	07
	(b)	What is electronic warfare? What are it's elements? What is Airborne early warning system? How does it help in electronic warfare?	07
Q.5	(a)	What difficulties were faced in the initial days of flying over long distance, during night and bad weather? How were they overcome?	07
	(b)	What is LORAN-C? Briefly explain it. How the system is designed to work over the earth.	07

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