Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2160106 **Date: 08/05/2017**

Subject Name: Avionics

Time: 10:30 AM to 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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	DME is based on which type of radar?	
	2	VOR operates in which frequency range?	
	3	What thickness of micro channel plates are used in night vision goggles?	
	4	Image intensifier works on which phenomenon?	
	5	Define Doppler effect.	
	6	To define the destination airport on the FMC route page how many character code is required?	
	7	Define avionics.	
	8	Write an application of Night vision goggles.	
	9	Which material is used as a photocathode for better intensification in NVG?	
	10	Which navigation aid is used for height measurement while you are flying below 25000 ft?	
	11	GPS having constellation of _____ satellites.	
	12	Localizer is located at_____.	
	13	Radar works on which frequency range?	
	14	Write a name of Indian GPS system.	
Q.2	**(a)**	Write a short note on Air born early warning system.	**03**
	(b)	Write down a short note on VORTAC.	**04**
	(c)	Explain Electronic counter measures in brief.	**07**
		OR	
	(c)	Explain Instrument landing system in brief with proper sketch.	**07**
Q.3	**(a)**	Explain Fly-by-wire system with suitable block diagram.	**03**
	(b)	Write a short note on Radar altimeter.	**04**
	(c)	Explain process of flight deck design according to human factor engineering with suitable block diagram.	**07**
		OR	
Q.3	**(a)**	Enlist the avionics instruments which can be located in cockpit.	**03**
	(b)	Write down difference between primary radar and secondary radar.	**04**
	(c)	Explain VOR navigation in brief.	**07**
Q.4	**(a)**	Explain Errors of Distance measuring equipment.	**03**
	(b)	Explain Doppler radar in brief with its application.	**04**
	(c)	Explain Global positioning system in brief.	**07**
		OR	
Q.4	**(a)**	Explain Head-up display with neat sketch.	**03**

	(b)	Explain physical characteristics of human which are kept in mind while designing any cockpit.	**04**
	(c)	Explain the system which is used at the time of air traffic to alert the pilot in any hazardous condition.	**07**
Q.5	**(a)**	Shortly Explain about Avionics architecture of digital avionics system.	**03**
	(b)	Explain error of very high frequency omnirange in brief.	**04**
	(c)	Explain Radar Ground proximity warning system with suitable diagram.	**07**
		OR	
Q.5	**(a)**	Discuss the errors of Speech recognition in brief.	**03**
	(b)	Explain Non directional beacon in brief.	**04**
	(c)	Explain Air born weather radar in brief with suitable diagram.	**07**

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