Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 1722704 **Date: 05-06-2013**

Subject Name: Global Positioning System

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 GPS? State and explain the objective of GPS. Also write history of GPS in brief.	**07**
	(b)	List out the important component of the GPS. And explain each of them in detail.	**07**
Q.2	**(a)**	Explain in detail GPS reference system WGS84.	**07**
	(b)	List and explain different GPS system used in real environment.	**07**
		OR	
	(b)	List out all types of error occurred in GPS System and explain Any three of them in detail.	**07**
Q.3	**(a)**	List out the major application of the GPS System and explain any two application in detail.	**07**
	(b)	Draw and explain each part of GPS receiver.	**07**
		OR	
Q.3	**(a)**	List all types of antenna used in the GPS system and explain any two of them in detail.	**07**
	(b)	Properly explain with the required figure and equation the concept of velocity determination with Doppler observation.	**07**
Q.4	**(a)**	Properly explain different types of carrier frequencies used in GPS.	**07**
	(b)	Explain the concept of dilution of precision in brief. Also explain HDOP and VDOP in short	**07**
		OR	
Q.4	**(a)**	Properly explain the concept of single, double and triple differences in detail for the measurement.	**07**
	(b)	Write How to eliminate the ionosphere error using dual frequency signal and explain it properly.	**07**
Q.5	**(a)**	What is pseudo range ? Properly explain how GPS receiver calculate pseudo range	**07**
	(b)	Properly explain interference and jamming.	**07**
		OR	
Q.5	**(a)**	What is anti spoofing and select availability ? Properly explain it. Also write the significance of the same.	**07**
	(b)	Properly explain primary equipment and software product used in GPS component	**07**

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