Hall Ticket Number:

Code No. : 42322

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
B.E. (ECE) IV Year II-Semester Examinations, May-2019
Global Positioning Systems (Elective – III)

Time: **3 hours**   Max. Marks: **70**

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Q.No.	Stem of the question	M	L	CO	PO
	Part-A (10 × 2 = 20 Marks)				
1.	Compare Vertical Dilution Precision (VDOP) and Position Dilution of Precision (PDOP).	2	2	1	2
2.	What is the difference between solar time and siderial time?	2	1	1	1
3.	Explain the terms Ellipsoid and Geoid.	2	1	2	1
4.	Define GPS Receiver Clock errors.	2	2	3	2
5.	List different carrier frequencies of GPS signals?	2	1	1	1
6.	What is the significance of carrier phase tracking?	2	3	1	2
7.	Classify GPS augmentation systems.	2	2	4	2
8.	Explain the principle of Differential GPS.	2	2	3	2
9.	What are the services provided by the galileo signals?	2	5	1	1
10.	What is the need for GPS integration with other systems?	2	6	4	1,2
	Part-B (5 × 10 = 50 Marks)				
11. a)	Discuss various steps involved in the satellite position determination.	5	2	1	1
b)	List out the importance of Dilution of Precision (DOP) and explain when we will get better Global Dilution of Precision (GDOP).	5	4	1	2
12. a)	Explain in detail about various error sources in GPS.	6	1	3	2
b)	List out the parameters of World Geostatic System (WGS)-84 co-ordinate system used in GPS.	4	2	2	2
13. a)	Explain GPS signal structure with neat block diagram mention the modulation scheme used with GPS.	7	1	1	1
b)	Differentiate between spoofing and anti-spoofing.	3	3	4	2
14. a)	Discuss the operation of GAGAN with a neat architectural diagram.	6	2	1	1
b)	Compare Space Based Augmentation System (SBAS) and Ground Based Augmentation System (GBAS).	4	3	5	1
15. a)	Differentiate between GLONASS and GALILEO systems.	4	3	1	1
b)	Discuss various types of GPS integration systems.	6	2	4	1,2

				M	L	CO	PO
16.	a)	Explain User Equivalent Range Error (UERE) of GPS and Julian day with suitable examples.		6	2	3	2
	b)	Distinguish between Earth Centric Inertial (ECI) system and ECEF coordinate systems.		4	3	2	2
17.		**Answer any *two* of the following:**					
	a)	Write about carrier phase measurements		3	3	1	2
	b)	List out the salient features of Local Area Augmentation System (LAAS).		3	2	3	2
	c)	Determine all the GLONASS system carrier frequencies from its fundamental frequency?		4	3	1	1

M: Marks; L: Bloom's Taxonomy Level; CO: Course Outcome; PO: Programme Outcome

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	65
2	Knowledge on application and analysis (Level-3 & 4)	32
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	3

@@@