Code No. 3330

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) II-Semester (Main & Backlog) Examination, May / June 2017

Subject : Global Positioning System (Elective – III)

Time : 3 hours   Max. Marks : 75

Note: *Answer all questions from Part-A. Answer any FIVE questions from Part-B.*

PART – A (25 Marks)

1	Compare VDOP and PDOP.	2
2	What is the principle involved in Trilateration?	3
3	Calculate the vertical ionospheric delay and slant factor for the satellite vehicle observed with an elevation angle of 30^0 and slant delay of 12.5m.	3
4	Explain the significance of UERE.	2
5	What do you mean by C/A and P-codes?	2
6	Why spread spectrum technology is used in GPS?	3
7	List out the salient features of LAAS.	3
8	What are the applications of WADGPS?	2
9	How GPS can be used in Marine applications?	2
10	Compare the orbital aspects of GLONASS and GALILEO.	3

PART – B (50 Marks)

11 a)	Discuss in detail about the Keplerian elements with a neat diagram.	6
b)	Explain in detail about GPS and UTC time.	4
12 a)	If the pseudorange measurements on the GPS frequencies f_1 = 1575.45MHz and f_2 = 1227.60MHz are p_1 = 23525863.60400m and p_2 = 23525871.73040m respectively, determine the ionospheric group delay on L_1 frequency.	4
b)	With a neat diagram explain ECI, ECEF and WGS-84 systems.	6
13 a)	Why data formats are required with respect to GPS? Explain in detail about GPS navigation data format.	6
b)	Explain about the GPS signal structure.	4
14 a)	What is the necessity of GAGAN system? Discuss the operation of GAGAN with a neat architectural diagram.	7
b)	Compare SBAS and GBAS.	3
15 a)	Discuss in detail the applications of GPS/Psuedolite and GPS/cellular systems.	5
b)	Explain about the signal structure of GLONASS and GALILEO systems.	5
16 a)	With a neat diagram explain the principle of operations of GPS.	6
b)	Illustrate the concept involved in spoofing.	4
17	Write short note on :	
a)	GPS in Military and Space application	5
b)	GPS orbits	5

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