Code: 20EC4703A

IV B.Tech - I Semester – Regular / Supplementary Examinations OCTOBER 2024

GLOBAL POSITIONING SYSTEMS
(ELECTRONICS & COMMUNICATION ENGINEERING)

Duration: 3 hours   Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level   CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Explain Block I, Block II, Block III in space segment phase development.	L2	CO1	7 M
	b)	Compare GPS and GALILEO system in all aspects.	L4	CO4	7 M
OR					
2	a)	Draw the functional block diagram of the Master Control Station. Also explain the functions of each block.	L2	CO1	10 M
	b)	Distinguish User Segment, Control Segment and Space Segment.	L4	CO4	4 M
UNIT-II					
3	a)	Classify GPS signal structure and also explain the characteristics of P-code.	L2	CO1	7 M

	b)	Illustrate in detail the GPS single frequency code receiver. List the signal processing functions of the GPS receiver.	L3	CO2	7 M
		OR			
4	a)	Explain Pseudo range measurements in GPS system.	L2	CO1	7 M
	b)	Illustrate in detail about the GPS dual frequency code receiver and its advantages over single frequency code receiver.	L3	CO2	7 M

UNIT-III

5	a)	Discuss in detail the various errors affecting the GPS accuracy and methods to overcome or minimize the errors.	L2	CO1	8 M
	b)	Compare Delta Error, Epsilon Error and Orbital Error.	L3	CO2	6 M
		OR			
6	a)	Explain in detail about GPS Ephemeris Errors.	L2	CO1	8 M
	b)	Demonstrate the satellite receiver and clock error in detail.	L3	CO2	6 M

UNIT-IV

7	a)	Explain RINEX format of observation and navigation data files.	L2	CO1	7 M
	b)	Explain in detail about NMEA 0183 standard format.	L2	CO3	7 M
		OR			

8	a)	Explain the Header section and Data section in NGS-SP3 GPS standard formats.	L2	CO1	7 M
	b)	Illustrate in detail about RTCM SC 104 standard format.	L3	CO3	7 M

UNIT-V

9	a)	Explain any four real time applications of GPS that you come across in your life.	L2	CO1	7 M
	b)	Distinguish Various GPS applications related to forestry and natural recourses.	L4	CO4	7 M

OR

10	a)	List the GPS applications for the Precision farming and explain at least two applications as examples in detail.	L2	CO1	7 M
	b)	Compare the GPS Applications of utility Industry and precision farming.	L4	CO4	7 M