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B.E /B.Tech (Full Time) DEGREE END SEMESTER EXAMINATION, APRIL/MAY 2011

GEOINFORMATIC ENGINEERING BRANCH

SIXTH SEMESTER (Regulation 2008)

GI9351 Satellite Geodesy

38

Time: 3 Hours

Maximum Marks: 100

Answer All Questions

PART A – (10 X 2 = 20 Marks)

1. What is Perturbing Force? List the Perturbing Forces.
2. Define the terms: Geodetic Height and Geoid Height.
3. The average orbital distance of Mars is 1.52 times the average orbital distance of the earth. Find the time for Mars to orbit the Sun.
4. What is anti spoofing?
5. Differentiate Broadcast Ephemerides and Precise Ephemerides.
6. How can receiver clock bias error be eliminated from carrier phase measurement?
7. Why are satellites at an elevation 10° or below from the horizon eliminated from the positioning solution?
8. Why Initialization is necessary in Kinematic Survey?
9. Write short note on RINEX format.
10. How many pseudorange observations will be observed using a 5sec epoch rate, for a total of 25 min. with 9 usable satellites?

PART – (5 X 16 = 80 Marks)

11. i. What is Doppler effect? Derive the observation equation of position by Doppler shift. (12)
ii. Discuss the different types of satellite cameras employed in determination of Direction. (4)
 - 12a. i. Explain Kepler's laws of planetary motion. (12)
ii. Discuss the necessity of different time systems employed in Satellite Geodesy. (4)
- (OR)
- 12b. i. What are the geodetic coordinates of a point that has X, Y, Z geocentric coordinates of 1054144.395m, 6125412.356m, and 1426588.073m respectively? (12)
ii. Describe the basic concept of Satellite Geodesy. (4)

- 13a. i. Explain three segments of NAVASTARGPS. (16)
(OR)
- 13b. i. What errors affect the accuracy of satellite positioning? Explain in detail. (8)
ii. Discuss the different types of GPS Receivers and GPS Antennas. (8)
- 14a. i. Discuss the structure of the Navigation Data. (8)
ii. Explain the different survey methods employed in GPS Survey. (8)
(OR)
- 14b. i. Explain the steps involved in GPS software package with flow diagram. (10)
ii. What are the different methods used for solving ambiguities? Explain any one method in detail. (6)
- 15a. i. Explain the trilateration adjustment procedure in control survey. (12)
ii. Write short notes on WAAS and GAGAN. (4)
(OR)
- 15b. i. What are the applications of GPS? Explain any two applications in detail. (8)
ii. Discuss the concepts of satellite altimetry. (8)