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Question Paper Code : 21234

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fourth/Fifth Semester

Civil Engineering

GI 3492 – TOTAL STATION AND GPS SURVEYING

(Common to : Geoinformatics Engineering)

(Regulations 2021)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Enlist the factors that affect the refractive index in total station.

2. Write any two advantages of using total station over conventional surveying instruments.

3. What are the sources of error in the total station?

4. What is meant by resection?

5. Write a short note on Anti-spoofing.

6. List the various types of GPS receivers.

7. Write the different softwares available for OPS data post processing.

8. What is meant by multipath error?

9. What are the different types of traversing in the total station?

10. List the uses of contour maps.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the deviation of Refractive Index (RI) for various atmospheric conditions.

Or

(b) Discuss in detail about the properties of wave propagation at lower and higher frequencies.

12. (a) Elaborate on measuring principle and working principle of total station with neat sketches.

Or

(b) Explain the concept of Missing Line Measurement (MLM) and Remote Elevation Measurement (REM) using total station with suitable examples.

13. (a) State and explain Kepler's law of motion with respect to satellite orbital motion.

Or

(b) Explain the signal structure of GPS with neat sketches.

14. (a) Discuss the concept of long baseline processing in differential GPS with a neat sketch.

Or

(b) Explain the concept of parameter estimation in GPS.

15. (a) With the help of total station, how is traversing and trilateration done? Briefly explain.

Or

(b) Elucidate on a detailed concept of rapid, static and kinematic methods of GPS measurement with neat sketches.

PART C — (1 × 15 = 15 marks)

16. (a) As a surveyor, you are given a job of performing the survey work like preparation of layout of a building using total station. How will you proceed this job using total station? Explain the step by step procedure in detail.

Or

(b) How will you determine the co-ordinates using GPS? Explain in detail.

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