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Question Paper Code: 54106

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fourth Semester

Civil Engineering

01UCE406 – SURVEYING - II

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What is meant by curve ranging?
2. List out the different kinds of transition curves.
3. State the principle of triangulation.
4. Name the different corrections to be applied to length of a base line.
5. What are different classifications of error?
6. What is meant by most probable values?
7. Write the sources of error.
8. What is an EDM?
9. Define sounding.
10. What is azimuth?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the different elements of a simple curve with neat sketch and brief on its notations. (16)

Or

(b) (i) What are transition curves? How will you determine the length of transition curves? (8)

(ii) Explain the procedure for calculating the length of valley curve. (8)

12. (a) Two triangulation stations *A* and *B* are 50km apart. The elevation of *A* is 205.5m and that of *B* is 232.2m. The intervening ground may be assumed to have a uniform elevation of 175m. Determine the height of the signal at *B* if the line of sight is required to pass at least 3m above ground. (16)

Or

(b) Explain any two mechanical solutions and one graphical solution to three point problem. (16)

13. (a) (i) What is meant by weight of an observation and enumerate laws of weights giving examples. (8)

(ii) Explain the general principles of least squares. (8)

Or

(b) Form the normal equation for X_1 , Y_1 & Z in the following equations with respective weights

$$\begin{aligned} 3x + 3y + z - 4 &= 0 & \text{wt} - 2 \\ x + 2y + 2z - 6 &= 0 & \text{wt} - 3 \\ 5x + y + 4z - 21 &= 0 & \text{wt} - 1 \end{aligned} \tag{16}$$

14. (a) (i) Summarize the care and maintenance of total station instruments. (10)

(ii) Discuss about the modern positioning system. (6)

Or

(b) Form the normal equation for X_1 , Y_1 & Z in the following equations with respective weights

$$\begin{aligned} 3x + 3y + z - 4 &= 0 & \text{wt} - 2 \\ x + 2y + 2z - 6 &= 0 & \text{wt} - 3 \\ 5x + y + 4z - 21 &= 0 & \text{wt} - 1 \end{aligned} \tag{16}$$

15. (a) (i) What are parallax and refraction and how do they affect the measurements of vertical angles in astronomical work? (8)
- (ii) Write a detailed note: (1) Sidereal time and (2) Solar apparent time. (8)

Or

- (b) Elaborate about the equipments needed for sounding. (16)
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