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8-11-19 AN
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Question Paper Code : 91296

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Fourth Semester
Civil Engineering
CE 6404 : SURVEYING – II
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A (10×2=20 Marks)

1. Define quadrilaterals in triangulation.

2. Define geodetical observations.

3. State the principle of least squares.

4. What are true and most probable values ?

5. What are the advantages and disadvantages of total station ?

6. What are the types of accuracy of total station ?

7. Expand the term GPS.

8. What is meant by Selective Availability ?

9. What are the function of transition curve ?

10. Define hydrographic surveying.

PART – B (5×13=65 Marks)

11. a) Explain the various tape corrections to be made while calculating the length of the base.

(OR)

b) A Nominal distance of 30 m was set out with a 30 m steel tape from a mark on the top of one peg to a mark on the top of another, the tape being in catenary under a pull of 100 N and at a mean temperature of 70°F. The top of one peg was 0.25 m below the top of the other. The top of the higher peg was 460 m above the sea level. Calculate the exact horizontal distance between the marks on the two pegs and reduce it to mean sea level, if the tape was standardized at a temperature of 60°F in catenary under a pull of (i) 80 N (ii) 120 N (iii) 100 N.

Take radius of earth = 6370 km

Density of tape = $7.86 g/cm^3$

Section of tape = 0.08 sq. cm.

Co-efficient of expansion = 6×10^{-6} per 1° F

Young's modulus = 2×10^7 N/cm^2.

12. a) i) What is meant by weight of observation ? Enumerate laws of weight giving examples.

ii) The angle of triangle ABC were recorded as follows :

A = 77°14'20" wt – 4

B = 49°40'35" wt – 3

C = 53°04'52" wt – 2

Give the corrected value of angles.

(OR)

b) Find the most probable values of angles A and B from the following observations.

A = 9°48'36.6" wt – 2

B = 54°37'48.3" wt – 3

A + B 104°26'28.5" wt – 4

13. a) Explain the fundamental measurement system of total station.

(OR)

b) Briefly describe the working and measuring principle of microwave system total station.

14. a) Write a note on the different segments of the GPS. **(13)**

(OR)

b) Write a note on the Signal Structure. **(13)**

15. a) i) A simple curve is to have a radius of 300 m. The tangents intersect at chainage of 1192.00 m and the deflection angle at intersection is 50, 5°. Find the tangent distance, chainage of beginning and end, length of long chord, degree of the curve and the number of full and sub chord. **(8)**

ii) How a Reconnaissance survey for railway project is conducted ? **(5)**

(OR)

b) Explain the various sounding methods. **(13)**

PART – C **(1×15=15 Marks)**

16. a) What are the various applications of Surveying in Civil Engineering ? **(15)**

(OR)

b) What are the various applications of Hydrographic Surveying ? **(15)**