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Question Paper Code : 21203

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Fourth Semester

Civil Engineering

CE 2254 / CE 45 / CE 1254 / 080100021 – SURVEYING – II

(Regulation 2008)

(Common to PTCE 2254 – Surveying II for B.E. (Part – Time) Second Semester – Civil Engineering – Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the advantages of Tacheometric surveying?
2. Why is an anallatic lens provided in a tacheometer?
3. Describe signals.
4. List out corrections for tape.
5. Define most probable value.
6. Define correlates.
7. Describe the Azimuth.
8. Write the equation of time.
9. Define Hydrographic surveying.
10. Define EDM.

PART B — (5 × 16 = 80 marks)

11. (a) Explain basic System of Tacheometric Measurements with neat sketch. (16)

Or

(b) In tacheometer survey made with an instrument whose constant are 100 and 0.5 the staff was inclined so as to be normal to the line of sight for each reading. Two sets of readings were as given below. Calculate the gradient between the staff stations P and Q the R.L of station R is 41.800 m. (16)

Instrument Station	Height of instrument axis	Staff Station	Bearing	Vertical Angle	Stadia Reading
R	1.600	P	85°	+4°30'	1.000, 1.417,1.838
		Q	135°	–4°00'	1.000, 1.657, 2.313

12. (a) What is meant by triangulation? Describe Classification of triangulation. (16)

Or

(b) (i) Find the sag correction for 30 m steel tape under a pull of 80 N in three equal spans of 10 m each. Mass of one cubic cm of steel = 7.86 g/cm^3. Area of cross-section of the tape = 0.10 sq.cm (6)

(ii) Describe the different classification of signals? What are the characteristics of a good signal? (10)

13. (a) (i) Define the following terms

(1) True error

(2) Residual error

(3) Most probable error. (6)

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

$A = 77°14'20''$ weight 4

$B = 49°40'35''$ weight 3

$C = 53°04'52''$ weight 2

Give the corrected value of the angles. (10)

Or

(b) Compute the side of spherical triangle by

(i) Spherical method

(ii) Delambre's method

(iii) Legendre's method. (16)

14. (a) List out and explain the determination of meridian. (16)

Or

(b) At a certain place in longitude 138° 45' East, the star is observed East of the meridian at $6^h\ 45^m\ 1^s$ P.M. with a watch keeping local mean time. It was again observed at the same altitude to the west of meridian at $8^h\ 48^m\ 43^s$ P.M. Find the error of the watch given below.

G.S.T: at G.M.N. on that day = $9^h\ 26^m\ 12^s$; R.A of the star = $17^h\ 12^m\ 48^s$. (16)

15. (a) What is tilt distortion? Prove that, in a tilted photograph, tilt distortion is radial from isocentre. (16)

Or

(b) Explain the types of EDM instruments. (16)
