

23/5/13 FN
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Reg. No. :

Question Paper Code : 23228

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

Fourth Semester

Civil Engineering

CE 1254/070100008 — SURVEYING — II

(Regulation 2004/2007)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term 'Stadia theodolite'.
2. What is the principle of subtense method?
3. Write short note on 'quadrilaterals'.
4. State the effect of curvature.
5. What is error in surveying?
6. List the methods used to adjust a level net.
7. Define 'zenith'.
8. What is meant by dip correction?
9. State the requirements of an aerial camera.
10. Define the term 'legal values'.

PART B — (5 × 16 = 80 marks)

11. (a) What is constant of a tacheometer? Determine the constant of stadia theodolite by the both methods.

Or

- (b) The readings were taken on a vertical staff with a tacheometer fitted with an anallatic lens and having constant of 100.

Staff Station	Bearings	Staff readings	Vertical angle
A	47° 16'	0.920 1.500 2.080	+8° 00'
B	227° 16'	0.840 2.000 3.160	-5° 00'

Calculate the relative level of the ground at A and B and the gradient between A and B.

12. (a) Briefly explain the field work of triangulation survey.

Or

- (b) How do you determine the R.L. of the elevated points with inaccessible? Discuss with suitable sketch.
13. (a) Write notes on :
- (i) Systematic error
 - (ii) Weight of an observation
 - (iii) Most probable value.

Or

- (b) The following angles were measured for two connected triangles ACD and BCD.
- $A = 67^{\circ} 26' 54''$; $B = 53^{\circ} 38' 36''$; $C = 127^{\circ} 26' 33''$; $D = 111^{\circ} 00' 36''$
 $C_1 = 61^{\circ} 20' 44''$; $C_2 = 66^{\circ} 58' 46''$; $D_1 = 48^{\circ} 29' 53''$; $D_2 = 17^{\circ} 36' 26''$
- If the measured values of equal weights, adjust the values of the angles.
14. (a) A star was observed at western elongation at a station A in latitude $55^{\circ} 30' N$, and longitude $53^{\circ} 30' W$. The declination of the star was $61^{\circ} 20' 34'' N$ and its right ascension 10 h, 58 m, 38 s., the G.S.T. of G. M. N. being 4 h, 39 m, 35 s. The mean observed horizontal angle between the referring object P and the star was $66^{\circ} 12' 40''$. Find (i) the altitude of the star at elongation, (ii) the azimuth of the line A P, and (iii) the local mean time of elongation.

Or

- (b) Explain the principle methods of determining the azimuth by observation on a circumpolar star at elongation.
15. (a) Briefly describe about the various stages of aerial photograph in photogrammetry.

Or

- (b) What is meant by current? How do you measure the current and discharge? Discuss in detail.