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Total No. of Pages :3

Seat No.	

S.E. (Civil) (Semester-IV) Examination, 2013

SURVEYING-II (Revised)

Sub. Code : 43587

Day and Date : Tuesday 14 - 05- 2013 **Total Marks : 100**

Time :10.00 a.m. to 1.00 p.m.

Instructions : 1) **Solve any three questions from each section.**

2) **Figures to the right indicate full marks.**

3) **Assume any additional data if required.**

SECTION-I

Q1) a) Derive the expression for horizontal distance, reduced level of staff station for the staff held vertical. When the line of sight is inclined downward for a tachometer. **[8]**

b) Determine the gradient from a point P to point Q. From the following observations made with a tacheometer fitted with an anallactic lens. The constant of the instrument was 100 and the staff was held vertical.

Inst. station	Staff station	Bearing	Vertical Angle	staff reading		
R	P	130°	+10° 32′	1.255	1.810	2.365
R	Q	220°	+5° 06′	1.300	2.120	2.940

Take R.L. of Inst. station R - 400 m. **[9]**

Q2) a) Explain the principal of electronic distance measurement and write in brief about Geodimeter. **[6]**

b) Two triangulation stations A and B are 50 kms apart and have elevations 243 m and 258 m respectively. The intervening ground may be assumed to have a uniform elevation of 216 m. Find the minimum height of the signal required at B. So that the line of sight may not pass nearer the ground than 3 m. **[10]**

P.T.O.

Q3) a) Explain the terms. **[6]**

i) Celestial horizon

ii) Star at culmination.

iii) Observer's meridian.

b) Explain the significance of polaris in field astronomy. **[5]**

c) What is a spherical triangle q Discuss it's properties. **[5]**

Q4) a) Explain the classification of triangulation system. Explain any one in detail. **[6]**

b) Explain the importance of signals and towers. State suitability of its. **[6]**

c) Write a note on subtense bar. **[5]**

SECTION-II

Q5) a) Explain the method of setting out a simple circular curve by the method of offsets from long chord. **[7]**

b) Two tangents intersects at chainage 1850m. The angle of intersection is 140°. Calculate all data necessary for setting out a curve of radius 300m by the deflection angle method. The peg interval may be taken as 20m. **[10]**

Q6) a) Derive an expression for the height displacements in a vertical photograph. **[7]**

b) Photographs of a certain area were taken from A and B, two camera stations, 140m apart, the focal length of camera is 150mm. The axis of camera makes an angle of 50° and 60° with base line at station A & B respectively. The image of point P appears 18.2mm to the right and 14.4 mm above the hair lines on photograph taken at A and 33.2 mm to the left on the photograph taken at B.

Calculate the distance AP and BP and elevation of P, if the elevation of the instrument axis at A is 210.735 m. **[10]**

Q7) a) Write a detailed note on application of remote sensing in civil Engineering. **[8]**

b) Write a note on Electromagnetic energy. **[8]**

Q8) Write short notes on any three: **[16]**

i) GPS and its application to civil engineering.

ii) Transition curve and shift.

iii) Flight planning for Aerial photography.

iv) Length of vertical curve and Tangent correction.

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