W - 558

Total No. of Pages : 3

Seat No.	

S.E. (Civil) (Part - II) (Semester - IV) Examination, May - 2014

SURVEYING - II

Sub. Code : 43587

Day and Date : Saturday, 17 - 05 - 2014 **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) Use of non-programmable calculator is allowed.

4) Assume any additional data if required and state them clearly.

5) Draw neat sketches wherever necessary.

SECTION - I

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

b) In order to determine the RL of station B, two observations are taken by a theodolite from station A - one to a BM and the other to station B. The observations are as under.

Instrument station	staff station	target	vertical angle	staff Reading	Remarks
A	BM	Lower Upper	– 10°0' – 7°0'	0.655 2.655	RL of BM is
A	B	Lower Upper	– 5°0' + 4°0'	1.250 3.200	510.500 m

Find the distance between bench mark and station B and also RL of station B. **[9]**

P.T.O.

Q2) a) Explain the different steps to be followed in Triangulation work. **[6]**

b) From an eccentric station 'S' which is 12.25 m to the west of main triangulation station B, the following angles were measured

$\angle BSC = 76°25'32"$, $\angle CSA = 54°32'20"$. The stations S and C are to the opposite sides of the line AB. Calculate the correct angle $\angle ABC$ if the lengths AB and BC are 5286.5 m and 4932.2 m respectively. **[10]**

Q3) a) Define the terms : **[6]**

i) Rational Horizon

ii) Sensible Horizon

iii) Visible Horizon

b) Describe the procedure of locating Polaris in the clear sky. **[5]**

c) Describe Earth's co-ordinate system. **[6]**

Q4) Write short notes on : **[16]**

a) Uses of total station

b) Systems of Triangulation

c) Astronomical Triangle

d) Measurement of distance with subtense bar

SECTION - II

Q5) a) Explain the detail field procedure of setting out circular curve by offsets from chord produced. **[6]**

b) Two tangents intersect at chainage of 1200 m, the deflection angle being 36°. Calculate all the data necessary for setting out a curve with a radius of 300 m by offsets from chords produced. Take peg interval being 30 m. **[11]**

Q6) a) Draw the neat sketch of vertical curve, state formulae for chainages and RL'S of key points in curve. **[6]**

b) What is flight planning and what factors affects the scale of Photography. **[6]**

c) Explain with neat sketch Mirror Stereoscope. **[5]**

Q7) a) What is idealized remote sensing system? **[5]**

b) What do you understand by Global Positioning System? **[6]**

c) What are the objectives of a GIS? **[5]**

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

a) Transition Curve and Shift

b) Parallax bar

c) Remote sensing observation Platform

d) Mosaics