

Enrollment No

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*Kadi Sarva Vishwavidyalaya****L.D.R.P. Institute of Technology & Research, Gandhinagar*****B.E. (Civil) Semester-IV, Mid Semester Examination, February, 2015**

Subject Code-CV-401

Subject: Advanced Surveying

Date: 28/02/2015

Time: 10:00 am to 11:30 pm

Total Marks: 30

Instructions:

- (1) All questions are compulsory
- (2) Figures to the right indicate full marks.
- (3) Indicate clearly, the options you attempt along with its respective question number.

- Q-1 (A) Explain the field procedure of tacheometric survey which you have carried out in detail (05)
- (B) Define weight of an observed quantity? Discuss various laws of weights with examples. (05)
- Q-2 (A) Derive the formulas for distance and elevation in the fixed hair method for line of sight inclined & staff is held vertical and measure angle is that of elevation. (05)
- (B) The altitude of two proposed stations A and B, 100 km apart are 420 m and 700 m respectively. The intervening obstruction situated at P, 70 km from A has an elevation of 478 m. Ascertain if A and B are intervisible and if necessary find by how much B should be raised so that the line of sight must nowhere be less than 3.10 m above the surface of the ground. (05)

OR

- Q-2 (A) What is base line? Describe the procedure of its extension with neat sketch. (05)
- (B) Following observations were taken with tacheometer fitted with an anallatic lens having value of tacheometer constant to be 100. (05)

Instrument station	Staff station	R.B.	Vertical angle	Staff Readings
O	P	N 37 ° W	+ 4° 12'	0910,1.510,2.110
O	Q	N 23 ° E	+ 5° 42'	1.855,2.705,3.555

Calculate horizontal distances between P & Q.

Q-3 (A) What is triangulation? Write short notes on Principles of triangulation. (05)

(B) The following tcheometetric observations were made with an anallatic (05)
telescope having multiplying constant is 100 on a vertically held staff. If R.L
of B.M. is 100.000M

Find the R.Ls of stations A, P& Q.

Instrument station	Height of axis	Staff station	Vertical angle	Hair readings
A	1.480	B.M.	- 1°54'	1.020,1.720,2.420
A	1.480	P	+ 2°36'	1.220,1.825,2.430
Q	1.500	P	+ 3°06'	0.785,1.610,2.435

OR

Q-3 (A) Determine the most probable values of A, B and C from the following (05)
observations of equal weight.

$$\angle A = 30^\circ 24'25.3''$$

$$\angle B = 40^\circ 15'14.2''$$

$$\angle C = 70^\circ 39'41.3''$$

The angles fulfill the condition $A+B=C$

(B) Enlist special minor & major instruments use in Surveying. Write Short note (05)
on Penta Graph with sketch.

***** *All The Best* *****