

KERALA AGRICULTURAL UNIVERSITY
B.Tech (Agrl.Engg) 2014 Admission
IInd Semester Final Examination-June/July -2015

Cat. No: Lwre.1202

Title: Surveying and Levelling: (1+2)

Marks: 50.00

Time: 2 hours

I Define

(10 x 1=10)

1. Offset
2. Ranging
3. Declination
4. Sensitivity of bubble tube
5. Height of instrument
6. Contour
7. Transiting
8. Latitude of a line
9. Trapezoidal rule for area
10. Trunnion axis

II Write short notes on any FIVE questions

(5 x 2=10)

1. Principles of surveying
2. Three point problem
3. Profile leveling
4. Reiteration method
5. Planimeter
6. Tangential tacheometry
7. Simpson's rule

III Write short essays on any FIVE questions

(5 x 4=20)

1. A road actually 1410 m long was found to be 1406 m when measured by a defective 30m chain. How much correction does the chain need
2. The whole circle bearings of the sides of a traverse ABCDEF are as follows. Compute the interior angles

Line	AB	BC	CD	DE	EF	FA
Bearing	290° 45'	250° 48'	196° 12'	175° 24'	112° 18'	30° 00'

3. Briefly explain the methods of orienting a plane table.
4. Briefly explain the temporary adjustments of a theodolite.
5. Explain the effect of curvature and refraction correction in leveling.

6. A tacheometer fitted with an analectic lens was used to observe the following:

Inst. Stn.	Staff Stn.	W.C.B.	Vertical angle	Hair readings
C	A	40°	12°	0.410, 0.680, 0.950
C	B	310°	10°	0.330, 0.820, 1.310

The staff was held vertically. Determine the length, bearing and gradient of line AB.

7. Plot the cross staff survey of a field and calculate the area PQRSTU (All dimensions in meters)

100	T		
U 20	80	15	S
	50	30	R
V 35	40		
	15	20	Q
	0	P	

IV. Answer any one of the following:

(1 x 10 = 10)

- The following consecutive readings were taken with a dumpy level: 1.895, 1.500, 1.865, 2.570, 2.990, 2.020, 2.410, 2.520, 2.960, 3.000 and 3.210. The level was shifted after fourth, sixth and ninth readings. The reduced level at first point was 50.000m. Rule out a page as a level book. Reduce the levels using collimation method.
- The area within the contour lines at the site of a reservoir and along the face of a proposed dam are as follows:

Contour	100	103	106	109	112	115	118
Area(sq.m)	1000	12800	16600	18800	24400	30600	38400

Assuming 100m as the bottom level of the reservoir and 118m as the water level, calculate the capacity of the reservoir.