

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING /
TECHNOLOGY - March 2013

SURVEYING – II
(COMMON FOR CE,AR,QS,EV and WR)

Maximum Marks : 100

Time : 3 Hrs

PART- A

(Maximum marks: 10)

- I. Answer the following questions in one or two sentences. Each question carries two marks Marks
- 1 List any two errors avoided by repetition methods.
 - 2 Distinguish between permanent adjustments and temporary adjustments of a theodolite
 - 3 List the adjustments of a closed traverse.
 - 4 What is an anallatic lens? Write its advantages.
 - 5 What are the different types of vertical curves? [5x2 =10]

PART - B

(maximum marks : 30)

- II Answer any five of the following questions. Each question carries 6 marks
- 1 Write the procedure to measure the magnetic bearing of a line using theodolite
 - 2 The coordinates of two points A&B are given below.

Points	Co-ordinates	
	Northings	Eastings
A	500.25	640.75
B	840.78	315.60

Find the length and bearing of AB.

- 3 Explain transit rule and Bowditch's rule for adjustment of traverse.
- 4 What is the principle of tacheometry? Explain.
- 5 What are the different types of curves? Give sketches of each with details
- 6 Define a transition curve? Give the advantages.
- 7 Explain the raster system formats and vector system formats to represent location in GIS [5x6=30]

PART - C

(maximum marks : 60)

(Answer one full question from each unit. Each question carries 15 marks)

UNIT I

- III Draw a neat sketch of vernier transit theodolite and mark important parts (at least 10 parts) [15]

OR

- IV Write the procedure for measurement of (1) Direct angles (2) Deflection angles (3) Magnetic bearing [15]

UNIT II

- V a Distinguish between consecutive co-ordinates and independent co-ordinates [6]
b The length and bearings of a traverse PQRS is given below

Line	Length (in m)	Bearing
PQ	235.00	343° 54'
QR	317.50	87° 52'
RS	215.00	172° 42'
SP	281.50	265° 14'

The bearing are referred to the magnetic meridian. The magnetic declination of the place is 5° 32' W. Convert the observed bearing into true bearing and hence find the closing error. [9]

OR

- VI a What do you understand by omitted measurements? [6]
b ABCD is a closed traverse in which the bearing of AD has not observed and the length of BC has been missed to record. The field records are given below.

Line	Bearing	Length (in m)
AB	$181^{\circ} 18'$	355
BC	$90^{\circ} 00'$?
CD	$357^{\circ} 36'$	408
DA	?	828

Calculate the bearing of AD and the length of BC [9]

UNIT III

- VII a What is tachemetry? What are the different systems of tacheometric Measurements [6]
b A tacheometer is used to obtain the difference of levels between two points A and B. The instrument is set up at another station C and the following observations are taken.

Staff at	Vertical angle	Stadia readings
A	$-6^{\circ} 30'$	3.500, 2.815, 2.130
B	$-8^{\circ} 30'$	1.870, 0.990, 0.110

If the Reduced Level of A is 100.000m, determine the RL of B. Also determine the horizontal distance of A from C, Take $K=50$ and $C=0.50$ [9]

OR

- VIII a Write the disadvantages of Tangential method of tacheometry. [6]
b Two observations are taken upon a vertical staff by means of a theodolite, the RL of the trunion axis of which is 154.3m. In the case of first observation the line of sight is directed to give staff reading of 1.0m and the angle of elevation is $4^{\circ} 58'$. In the second observation the staff reading is 3.5m and the angle of elevation is $5^{\circ} 44'$. Compute the Reduced Level of the staff station and horizontal distance from the instrument [9]

UNIT IV

- IX With the help of a sketch, mark all the elements of a simple curve [15]
OR
X What are the field procedure of Electronic Distance measuring equipments? Explain. [15]
