

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—OCTOBER, 2013

SURVEYING-II

(Common for CE, AR, QS, EN and WR)

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. In which condition the method of re-iteration is resorted to ?
2. What are the methods of traversing by a theodolite ?
3. Define latitude and departure.
4. Write short notes on stadia tacheometry.
5. Define remote sensing.

(5×2=10)

PART—B

II Answer *any five* questions. Each question carries 6 marks.

1. List the fundamental lines of a transit theodolite.
2. What errors are eliminated by repetition method of angular measurements by a theodolite ?
3. Explain : (i) Transit rule (ii) Bowditch's rule for adjustments of traverse.
4. What is an anallatic lens ? What are its advantages ?
5. What is the tangential method of tacheometry ? Write its disadvantages.
6. What is a compound curve ? Explain with sketch.
7. What is meant by GIS and for what purpose will it be used ?

(5×6=30)

PART—C

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

UNIT – I

III What are the permanent adjustments of a transit theodolite ?

15

OR

IV Write short notes on :

- (i) Transiting
- (ii) Swinging the telescope
- (iii) Face left and Face right
- (iv) Balancing a traverse.

15

UNIT – II

- V (a) What do you understand by omitted measurements ? 6
- (b) The length and bearing of the sides of a closed traverse ABCD are given below. Calculate the length and bearing of line DA.

Line	Length in m	Bearing
AB	70.80	140°15'
BC	195.90	36°25'
CD	35.20	338°45'

9

OR

- VI (a) Explain the checks on an open traverse. 6
- (b) The following table gives the latitudes and departures of the sides of a closed traverse ABCD.

Side	Latitude		Departure	
	N	S	E	W
AB	107.4		62.0	
BC		122.6	102.9	
CD		77.9		45.0
DA	93.1			119.9

Compute the independent co-ordinate and hence the area of the traverse. 9

UNIT – III

- VII Derive an expression for horizontal distance D of a vertical staff from a theodolite with stadia diaphragm, when the line of sight is inclined. Also find the expression for vertical component V . 15

OR

- VIII (a) What is tacheometry ? What are the different system of tacheometric measurements ? 6
- (b) A Tacheometer is used to obtain the difference of levels between two points A and B. The instruments are set up at another station C and the following observations are taken :

Staff at	Vertical angle	Stadia reading
A	-6°30'	3.500, 2.815, 2.130
B	-8°30'	1.870, 0.990, 0.110

If the RL of A is 100, determine the RL of B. Also determine the horizontal distance of A from C, take $k = 50$ and $C = 0.50$. 9

UNIT – IV

- IX Explain with a neat sketch, the procedure of setting out a simple curve by offsets perpendicular to tangent method. 15
- OR
- X List the steps required for initial settings (general settings) of a Total station. 15