TED (10)–3022

(REVISION—2010)

Reg. No ....

Signature ....

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

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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