TED (10)–3022

(REVISION—2010)

Reg. No. .....

Signature .....

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—MARCH, 2014

SURVEYING - II

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

[*Time* : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

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

1. What is meant by right face and left face observation of Theodolite ?
2. Define the terms Latitude and Departure of a survey line.
3. Distinguish between a Theodolite and Tacheometer.
4. What is a transition curve ?
5. Define remote sensing. (5x2=10)

PART—B

(Maximum marks : 30)

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

1. Describe the different types of Theodolite ?
2. State the fundamental lines and their relations of a Theodolite.
3. Briefly explain how the bearing of a line is determined using a Theodolite.
4. Explain any two rules which are used to adjusting the error of closure in a closed traverse.
5. What is the difference between Stadia Tacheometry and Tangential Tacheometry ?
6. Define Photogrametry, what are its types ?
7. List the major application of GIS in Civil Engineering. (5x6=30)

PART—C

(Maximum marks : 60)

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

UNIT – I

III (a) Write the procedure for measurement of horizontal angle by Reiteration method. 7

(b) What are the temporary adjustments of a Theodolite ? How will you do it ? 8

OR

Marks

IV (a) What are the errors eliminated by Repetition method ? 7

(b) Explain any two methods of prolongation of a straight line. 8

UNIT – II

V (a) Mention the 4 cases of omitted measurements. 6

(b) The following table gives the lengths and bearings of the four lines of a closed Theodolite Traverse ABCDE. Determine the length and bearing of the fifth line EA:

Line	*Length*	*Bearing*
AB	194.1m	85°30′
BC	201.1m	15°00′
CD	165.4m	285°30′
DE	172.6m	195°30′
EA	?	?

9

OR

VI (a) What is the difference between consecutive co-ordinate and independent co-ordinate ? 6

(b) The following are the corrected consecutive co-ordinates of a closed traverse. Calculate the area of the traverse by independent co-ordinate method :

Line	*Latitude*	*Departure*
AB	+77.062	+312.139
BC	+248.421	+101.734
CD	+123.993	–254.686
DE	–197.161	–280.333
EA	–252.315	+121.146

9

UNIT – III

VII (a) Explain how the vertical angles are measured using a Transit Theodolite. 6

(b) Find the R.L of top of a tower from the following data :

Inst. Station	*Reading on B.M.*	*Vertical Angle*	*R.L.of B.M*	*Distance AB in M*	*Remarks*
A	1.578	10° 12′	543.075	30m	A and B in line with the top of tower
B	1.269	8° 20′			

9

OR

VIII (a) Write the procedure for determination of Tacheometric constant. 6

(b) A Tacheometer was set up at station C and the following readings were obtained on a staff vertically held. Calculate the horizontal distance CD and R.L. of D, when the constants of instruments are 100 and 0.15.

Inst. Station	*Staff Station*	*Vertical Angle*	*Hair readings*	*Remarks*
C	B.M	–5° 20′	1.150, 1.800, 2.450	R.L of B.M 750.5000
	D	+8° 12′	0.750, 1.500, 2.250	

9

Marks

UNIT – IV

IX (a) Explain with sketches different types of horizontal curves. 7

(b) Two straights intersect at chainage 2500 meters and the angle of intersection is 120°. If the radius of the simple curve to be introduced is 600m, find the following :

(i) Tangent distances

(ii) Chainage of point of commencement

(iii) Chainage of the point of tangency

(iv) Length of long chord 8

OR

X (a) Explain the different components of a remote sensing system. 7

(b) What are the advantages of G.P.S. ? 8