

TED (10)-3022

Reg. No. ....

(REVISION—2010)

Signature .....

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

**SURVEYING – II**

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

[Time : 3 hours

(Maximum marks : 100)

**PART—A**

(Maximum marks : 10)

Marks

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

1. What is meant by Transiting ?
2. Distinguish between Consecutive co-ordinate and independent co-ordinate.
3. What is the difference between Stadia Tacheometry and Tangential Tacheometry ?
4. Name the different types of horizontal curves.
5. What is meant by a Total Station ?

(5×2=10)

**PART—B**

(Maximum marks : 30)

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

1. List the essential parts of a Theodolite.
2. Describe the temporary adjustments of a Theodolite.
3. What is meant by balancing the traverse ?
4. State any four disadvantages of Tangential Tacheometry.
5. What is an annallatic lens and what are its advantages ?
6. List out the applications that can be done in Civil Engineering by remote sensing.
7. What are the elements of circular curve ?

(5×6=30)

**PART—C**

(Maximum marks : 60)

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

**UNIT—I**

- III (a) What are the errors that are eliminated by Reiteration method ? 6
- (b) State the fundamental lines of a Theodolite and explain their relationship. 9

OR

- IV (a) Write the procedure of measurement of horizontal angle by repetition method. 7  
 (b) Explain the procedure of prolonging a straight line by double sighting method. 8

## UNIT—II

- V (a) Define the terms latitude and Departure of a survey line. 6  
 (b) In a closed traverse ABCDE, the length of line AB and the bearing of line EA could not be measured in the field. From the field data, calculate the missing measurements :

Side	Length	Bearing
AB	?	95°
BC	140 m	27° 28'
CD	163 m	317° 30'
DE	173 m	260°
EA	201 m	?

OR

- VI (a) Explain Transit rule. 6  
 (b) The following data was obtained during a theodolite traversing, Balance the traverse by Bowditch's method :

Side	Length (M)	Latitude		Departure	
		N	S	E	W
AB	250	107.97	—	3.77	—
BC	123	14.39	—	249.37	—
CD	256	—	122.94	4.12	—
DA	108	0	—	—	256.00

## UNIT—III

- VII (a) Derive an expression for finding the height and distance when base of the object is accessible. 6  
 (b) The following observations were made determining the elevation of entry tower of a temple. Find the R.L. at the top of the tower :

Instrument at	Sight to	Vertical Angle	Remarks
B	A	+25° 23'	Staff reading on BM – 1.350
C	A	+16 40'	Staff reading on BM – 1.225 Length of BC = 30 m

OR

- VIII (a) Describe Tacheometric leveling. 6
- (b) A tacheometer is setup at an intermediate point on a traverse course PQ and the following observations are made on a vertically held staff. The instrument is fitted with an annallatic lens and the multiplying constants 100. Compute the length between P and Q. Also find the RL of Q if RL of P 350.50 m :

Staff station	Vertical Angle	Staff intercept	Axial hair Reading
P	+9° 30'	2.250	2.105
Q	+6° 00'	2.055	1.875

## UNIT—IV

- IX (a) What are the difference between O.D.M and E.D.M. ? 6
- (b) Two straight lines AB and BC intersect at chainage 2060 m. The intersection angle being 140°. Calculate the radius and chainage of the tangent points of a circular curve connecting the two lines if  $D = 6^\circ$ . 9

OR

- X (a) Distinguish between terrestrial photogrametry and areal photogrametry. 7
- (b) Define :
- (i) Long chord (iii) Tangent distance
- (ii) Point of tangency (iv) Vertex. 8