TED (10) – 3022

(REVISION —2010)

Reg. No. .....

Signature .....

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING / TECHNOLOGY — MARCH, 2015

SURVEYING - II

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

[*Time* : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

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

1. What are the fundamental line of transit theodolite ?
2. What is meant by changing the face of a theodolite ?
3. Define the term departure of a survey line.
4. What are the different methods of tacheometry ?
5. What are the two categories of E.D.M. instrument ?

(5x2=10)

PART—B

(Maximum marks : 30)

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

1. Explain the procedure of measuring the bearing of a line with a transit theodolite.
2. What are the temporary adjustments of a theodolite ?
3. Explain traversing by the method of included angle.
4. What is a tacheometer ? What are the disadvantages of tangential method ?
5. What is an annalataic lense ? What are the advantages of annalatic lense ?
6. What are the different types of areal photographs ?
7. What are the components of a G.P.S. receiver ?

(5x6=30)

[160]

Marks

PART—C

(Maximum marks : 60)

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

UNIT – I

III (a) Differentiate between swinging and transiting the telescope. 6

(b) What are the errors eliminated by repetition method ? 9

OR

IV Explain clearly the procedure of measurement of horizontal angles by repetition. 15

UNIT – II

V (a) State bowditches rule and transit rule. 6

(b) In a closed theodolite traverse survey the following details are noted and some of the observations were found to be missing. Calculate the missing data.

Line	*Length(m)*	*W.C.B.*
AB	194.1	85° 30'
BC	201.1	15° 00'
CD	165.4	285° 30'
DE	172.6	195° 30'
EA	?	?

9

OR

VI (a) What is meant by latitude and departure of a survey line ? 6

(b) The following are the latitudes and departures of the lines of a closed traverse ABCD.

Line	*Latitude*	*Departure*
AB	−232.2	−88.8
BC	+13.6	+116.4
CD	+161.0	+34.4
DA	+57.6	−62.0

Compute the area of the traverse. 9

Marks

UNIT – III

VII (a) Derive an expression for a horizontal distance D of a vertical staff from a tacheometer, if the line of sight is horizontal and the staff held vertical. 6

(b) A tacheometer fitted with an annalatic lense and the multiplying constant was 100. The staff held vertical. Calculate the reduced level of P and the distance OP.

Instrument station	*Staff station*	*Hair reading*	*Vertical angle*	*Remarks*
O	BM	1.750	−5°30'	RL of
		1.950		BM=500.000
		2.150		
O	P	1.500	+9°30'	
		1.650		
		1.800		9

OR

VIII (a) What is tacheometry ? What are the different system of tacheometric measurements ? 6

(b) A tacheometer is used to obtained 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 readings*
A	−6°30'	3.500, 2.815, 2.130
B	−8°30'	1.870, 0.990, 0.110

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

UNIT – IV

IX (a) What are the theoretical conditions that a transition curve should fulfill. 6

(b) Derive the exact equation for getting out the offset distance from long chord to set out a curve by the method of offsets from long chord. 9

OR

X (a) Distinguish between terrestrial photogrammetry and areal photogrammetry. 6

(b) What are the basic functions of E.D.M. instrument. 9