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(REVISION ---2010)

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Reg. No.

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)

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)

(5x6=30)

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?

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.

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

Or

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

UNIT - II

V (a) State bowditches rule and transit rule.

(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)	<i>W.C.B.</i>	
AB	194.1	85° 30'	
BC	201.1	15° 00'	
CD	165.4	285° 30'	
DE	172.6	195° 30'	
EA	?	?	

OR

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

(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.

Marks

6

9

15

6

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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.
 - (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
0	BM	1.750	-5°30'	RL of
	* ************************************	1.950		BM=500.000
	. U	2.150		
0	Р	1.500	+9°30'	
		1.650		
	i al da	1.800		

OR

- VIII (a) What is tacheometry? What are the different system of tacheometric measurements?
 - (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
Α	-6°30'	3.500, 2.815, 2.130
В	-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.

$U_{NIT} - IV$

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

OR

- X (a) Distinguish between terrestrial photogrammetry and areal photogrammetry.
 - (b) What are the basic functions of E.D.M. instrument.