TED (10)–3022

(REVISION—2010)

Reg. No.....

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THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—MARCH, 2012

SURVEYING–II

(Common for CE, AR, QS, EV 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. Define the term swinging the telescope.
2. Write the equation of transit rule for balancing the traverse.
3. What is meant by tangential tacheometry ?
4. State the concept at angle of intersection.
5. What are the different components of remote sensing system ?

(5×2=10)

PART—B

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

1. Explain how you will take the measurement of deflection angles.
2. What do you mean by face left and face right observations ? How can you change the face of the theodolite ? Which error is eliminated by both face observations ?
3. What do you understand by omitted measurement ? What are the various cases ?
4. An instrument was set-up at 'P' and the angle of elevation to a vane of 4 m above the foot of the staff held at 'Q' was 9°30'. The horizontal distance between P and Q are 2000 m. Determine the RL of the staff station 'Q', the RL of instrument axis was 2650.380 m.
5. Describe the method of setting out simple curve by offset from long chord.
6. List the application of photogrametry.
7. Write the equation of determining horizontal distance by the tangential method of tacheometry in different cases.

(5×6=30)

Mark

PART—C

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

UNIT—I

III 1. State any five operations that can be performed by a theodolite, while setting the instrument at every station. Explain procedure of any two operations. 8

2. Write the fundamental lines of theodolite and any two relationship. 7

OR

IV 1. Describe briefly how would you measure the horizontal angle by reiteration method. 6

2. List the permanent adjustment of theodolite. How will you perform the adjustment of plate level of theodolite ? 9

UNIT—II

V 1. Explain how the area of the traverse can be computed by using independent co-ordinate. 6

2. The following are the observations of a closed traverse :

Line	Length (m)	Bearing
AB	305	65°
BC	320	140°
CD	185	208°
DA	484.14	305°

Find the consecutive co-ordinates of the lines and interior angles of the same. Also apply checks, for the closed traverse. 9

OR

VI 1. State the Gale's traverse table. Draw the Gale's traverse table. 6

2. Adjust the following traverse by applying the transit rule :

Line	Latitude (m)	Departure (m)
AB	+130.00	+285.00
BC	+830	–345.50
CD	+385.20	–395.00
DE	–790.50	+728.30
EA	–593.50	–271.50

Marks

UNIT—III

VII 1. How can you determine the tacheometer constant ? Explain with sketch. 5

2. The top of the chimney (Q) was sighted from two stations 'P and R'. The station P and R being in line with top of the chimney. The angle of elevation from P to the top of the chimney was 38°21' and that from R to the top of the chimney was 21°18'. The staff reading on BM at P and R were 1.870 m and 1.640 m respectively. The horizontal distance between P and R was 27.00 m and the RL of BM was 112.70 m. Find the RL of the top of the chimney and horizontal distance from P to the chimney. 10

OR

VIII 1. The staff held vertical is observed with an ordinary theodolite and the angles of elevation of two well defined points which are 10 m apart. What is the horizontal distance of the staff from the instrument, when the difference of the targets of the angles of elevation α_1 and α_2 is 0.033. 5

2. A tacheometer was setup at a station P and the following reading were obtained on a vertically held staff :

Instrument station	Staff station	Vertical angle	Hair reading	Remarks
P	BM	–4°22'	1.050 1.105 1.160	RL of BM = 1958.300 m
	Q	+10°0'	0.950 1.055 1.160	

The constant of the instrument were 100 and 0.10. Find the horizontal distance PQ and the RL of Q. 10

UNIT—IV

IX 1. Explain the different types of aerial photogrametry. 6

2. Write the brief description about distomat. 3

3. Caiculate the perpendicular offsets at 15 m intervals along the tangents to locate the curve having a radius of 360m. 6

OR

X 1. Discuss about Electronics theodolite. 5

2. Two targets intersect at chainage 1190 m. The deflection angle being 36°. Calculate all data necessary for setting out a curve with a radius of 300 m, by Rankine's deflection angle method. 10