TED (15) –3012

(REVISION — 2015)

Reg. No.....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

SURVEYING — II

[*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. Define the term transiting the telescope.
2. State the term latitude of a survey line.
3. List the different methods of tacheometry.
4. Define a transition curve.
5. Name the types of photogrammetry. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain the temporary adjustments of a transit theodolite.
2. Explain the procedure of measurement of horizontal angle by repetition method.
3. Explain Bowditch's rule and Transit rule.
4. Explain the procedure of measuring vertical angle with a theodolite.
5. Derive an expression for the horizontal and vertical distances by the tangential tacheometry method when both the angles are angles of elevation.
6. What are the elements of simple curve ?
7. What are the applications of remote sensing in civil engineering ? (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) List out the fundamental axes of a transit theodolite and mention their relationship between them, if the theodolite is in perfect adjustment. 8

(b) Explain the procedure of measurement of horizontal angle by reiteration method. 7

OR

Marks

IV (a) Explain the errors which are eliminated or minimized by repetition method. 7

(b) Explain the procedure of measuring the bearing of a line with a transit theodolite. 8

UNIT — II

V (a) Explain traversing by the method of included angles. 7

(b) In a theodolite traversing 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	345	45°
BC	320	135°
CD	210	210°
DA	?	?

8

OR

VI (a) Define an open traverse. What are the checks commonly employed in an open traverse ? 7

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

Line	*Latitude (m)*	*Departure (m)*
AB	+204.6	+113.9
BC	-234.9	+205.8
CD	-150.7	-86.0
DA	+181.0	-233.7

8

UNIT — III

VII (a) Derive an expression for the horizontal distance D of a vertical staff from the tacheometer, if the line of sight is inclined in stadia tacheometry. 7

(b) Find the Reduced level of the top of a church tower from the following data.

Instrument station	*Reading on B. M*	*Vertical angle*	*Remarks*
A	0.862	18°36′	*R. L. of B.M. = 421.380*
B	1.222	10°12′	*Distance AB = 50m.*

Station A and B and the top of the church tower are in the same vertical plane. 8

OR

Marks

VIII (a) Derive an expression for the horizontal and vertical distances by the tangential method when both the angles are angles of depression. 7

(b) A tacheometer fitted with an anallatic lense to observe the following. The staff is held vertically. Determine the length of AB.

From	*To*	*Bearing*	*Vertical angle*	*Hair readings*
C	A	320°	+12°	0.906 1.721 2.550
C	B	50°	+10°	0.744 2.199 3.654

8

UNIT — IV

IX (a) What are the different types of horizontal curves ? 3

(b) Two straights intersect at a chainage (80 chains + 17.00m). The deflection angle is 11° and the radius of the curve is 574m. Calculate all the data necessary for setting out a simple curve by the method of deflection angles. The peg interval is 30 m. 12

OR

X (a) Name the different parts of a Total Station. 5

(b) What are the different applications of G. I. S. in Civil Engineering ? 5

(c) What are the components of a G. P. S. receiver ? 5

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