

TED (10)–3002

(REVISION—2010)

Reg. No. ....

Signature .....

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

**SURVEYING—I**

(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. Name the line which joints subsidiary stations on the main line in chain surveying.
2. What is the process of putting the plane table into some fixed direction, so that line representing a certain direction on the plan is parallel to that direction on the ground ?
3. Where the zero degree graduation on the graduated ring of prismatic compass ?
4. Which is the smallest division of the levelling staff ?
5. The vertical distance between any two consecutive contours is known as ? (5x2=10)

**PART—B**

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

1. What are the functions of chain, tape and cross-staff ?
2. List the instruments used in plane table survey.
3. Explain the procedure to calculate included angles from bearing with examples.
4. How the local attraction influenced in compass survey and how it detected ?
5. What are the adjustment done at every set-up of levelling instruments ?
6. Distinguish between two methods of booking and reducing the elevation of points from the observed staff readings.
7. Mention the characteristics of contours.

(5x6=30)

**PART—C**

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

**UNIT – I**

- III (a) How you would range a line between two points which are not intervisible ? 8
- (b) How will you conduct chaining on uneven or sloping ground ? 7

OR

- IV (a) Prepare a survey plan and determine the area of the field from following observations :

	D	
	750	
	650	210 E
C 180	490	
	300	250 F
B 160	180	
	100	50 G
	0	
	A	

- (b) Explain with neat sketch, radiation method of plane table surveying.

UNIT – II

- V (a) Draw the neat sketch of prismatic compass and identify the parts.  
 (b) Plot a traverse with help of following observations taken by a prismatic compass and apply the checks :

Line	Fore bearings
AB	60° 30'
BC	122° 0'
CD	46° 0'
DE	205° 30'
EA	300° 0'

OR

- VI (a) How will you plot a building using compass traverse ? Explain with help of sketch.  
 (b) Following fore and back bearings were observed in running a compass traverse. At what stations do you suspect local attraction and determine the corrected bearings :

Line	F.B.	B.B
AB	45° 45'	226° 10'
BC	96° 55'	227° 05'
CD	29° 45'	209° 10'
DE	324° 48'	144° 48'

UNIT – III

- VII The following staff readings were observed successively with level, the instrument having been moved forward after the second, fourth and eighth readings :

0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 4.125, 0.120, 1.875, 2.030, 3.765.

The first readings was taken with the staff held upon a bench mark of elevation 132.135. Enter the readings in level book from and reduce the levels. Apply the usual checks. Find also the difference in level between the first and last points.

OR

- VIII (a) Discuss the various type of bench mark. Marks  
8  
(b) What are effects of curvature and refraction in levelling ? 7

## UNIT – IV

- IX In running fly levels from bench mark RL 183.215 the following readings were obtained :

B.S. 1.215    2.035    1.980    2.625

F.S. 0.965    3.830    0.980

From the last position of the instrument five pegs at 20 metres intervals are to be set out on a uniform rising gradient of 1 in 40, the first peg is to be have a R.L. of 181.580. Work out the staff readings required for setting the tops of the pegs on the given gradient.

15

OR

- X Explain the various methods of interpolating the contours.

15

MADIN Polytechnic College