TED (10)–3002

(REVISION—2010)

Reg. No. .....

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SECOND SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—MARCH, 2013

SURVEYING — I

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

[*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 different types of chains used in survey.
2. What are the methods used in plane tabling ?
3. Convert the following whole circle bearing into quadrantal bearings :

   (a) 328°30′ (b) 147°20′
4. Differentiate between contour interval and horizontal equivalent.
5. Define profile leveling. (5x2=10)

PART—B

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

1. What are the points to be kept in mind while selecting the survey stations ?
2. The distance between two points measured with a 30 m chain was recorded as 458 m. It was afterwards found that the chain was 50 mm short. Find the true distance between the points.
3. The bearing of the lines of a traverse ABCDEA are 290°45′, 25°48′, 196°12′, 175°24′, 112°18′. Compute the internal angles.
4. Explain the different types of meridians in compass survey.
5. What is the effect of curvature of earth in leveling ? Give the value of correction for curvature.
6. Explain the various types of leveling staffs.
7. Define and discuss about the terms profile leveling and cross sectioning.

(5x6=30)

Marks

PART—C

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

Unit – I

III (a) Two points in a long survey line are not inter visible. Explain about the ranging of the line. 7

(b) What are the advantages and disadvantages of plane tabling ? 8

Or

IV (a) A field was surveyed by a chain and the area was found to be 6270 ares. If the chain used is 1.2% too long, what is the corrected area of the field ? 7

(b) Explain with neat sketch the radiation method in plane tabling. 8

Unit – II

V (a) Explain the term closing error. How we can solve it ? 7

(b) The value of magnetic declination at a place is 5°20′ W. Convert the following magnetic bearings into true bearings :

(i) S 46°20′E (ii) S 78°40′W. 8

Or

VI (a) What do you mean by the term magnetic declination ? Explain. 5

(b) Below are the bearings observed in traversing with a compass :

Line	FB	BB
AB	80°30′	260°30′
BC	351°15′	173°00′
CD	32°15′	208°
DE	106°15′	287°45′
EF	99°	280°
FG	209°30′	29°30′

At what stations do you suspect local attraction ? Find the corrected bearings of the lines. 10

Unit – III

VII (a) Define BM. What are its classifications ? 4

(b) Define the terms change point and datum. 4

(c) The following staff readings were taken with a level. The instrument was moved after the fourth and the seventh readings. Calculate reduced levels of the points and find the level difference between the first and last points. The first reading was taken on a BM + 75.00 OM. Use HC method :

0.835, 2.625, 1.050, 2.165, 1.850, 0.785, 1.375, 2.150, 0.755, 2.200. 7

Or

Marks

VIII (a) List the errors that may occur in leveling. 6

(b) The following staff readings were taken with a level. The instrument was moved after fourth, sixth and eighth readings. Calculate the RL of the points, if the first reading was taken by a staff held on a BM + 100.00. Use rise and fall method :

0.765, 1.825, 1.050, 1.885, 1.850, 0.995, 1.375, 2.250, 0.765, 2.800. 9

UNIT – IV

IX (a) With the help of simple sketches explain the characteristics of contour lines. 7

(b) In a reciprocal leveling across a river two pegs A & B were fixed. With the instrument near Peg A, the staff reading at A & B are 1.550 and 0.710 respectively. With the instrument near Peg B, staff readings at B & A are 1.520 and 2.270 respectively. Calculate the true difference of level between A & B. Also illustrate the answer by a neat sketch. 8

OR

X With the help of sketches explain the various methods of locating contours. 15