TED (15) – 2011

REVISION 2015

SECOND SEMESTER DIPLOMA EXAMINATION IN CIVIL ENGINEERING

(MODEL QUESTION PAPER)

SURVEYING I

(Time: 3 hours)

(Maximum Marks: 100) Marks

PART A

(Maximum Marks: 10)

I Answer all questions in one or two sentences. Each question carries 2 marks.

1. List the different types of chains.
2. Explain the term local attraction.
3. Define the term meridian.
4. Define the term axis of bubble or bubble line.
5. List the classification of leveling. (5x2=10)

PART B

(Maximum Marks: 30)

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

1. Describe plane and geodetic surveying.
2. List the accessories used in plane table surveying and discuss their functions.
3. Convert the following whole circle bearing into quadrantal bearing.
   a) 42˚00 □ b) 132˚30 □ c) 270˚00 □ d) 328˚30 □
4. Define bench mark and mention different types of bench marks.
5. In order to find the difference in elevation between two points A and B, a level was set up on the line AB, 70m from A and 1290m from B. The readings obtained on staff held at A and B were 0.645 and 3.930m respectively. Find the true difference in elevation between A and B.
6. Sketch representative contours around a hill and a pond.
7. List the fundamental lines of dumpy level and state the adjustments of telescope. (5x6=30)

PART C

(Maximum Marks: 60)

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

MODULE I

III a) Explain the procedure for continuing chaining on the following obstructions.

i) Pond ii) river iii) building 9

b) a) List the various types of chains in common use. 6

OR

IV a) Describe with the aid of a neat sketch the intersection method of plane table surveying. 9

b) Explain the method of setting out right angle from a survey line using cross staff. 6

MODULE II

V a) The following bearings were observed in running a closed traverse.

Line	Fore bearing	Back bearing
AB	75˚ 45□	254˚ 25□
BC	115˚ 15□	296˚ 30□
CD	165˚ 35□	345˚ 35□
DE	224˚ 45□	44˚ 15□
EA	304˚ 50□	125˚ 35□

At what stations do you suspect the local attraction and apply correction. 9

b) Explain the procedure for the adjustment of closing error of a compass traverse by graphical method. 6

OR

VI a) Define the term magnetic declination. Convert the following true bearing into magnetic bearing, if the declination is 1˚ 30 □ W

i) 91˚ 30 □ ii) 142˚ 00 □ iii) 184˚ 30 □ iv) 340˚ □ 00 □ 9

b) Explain local attraction and its detection 6

MODULE III

VII a) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth, and eighth readings.

2.115, 1.605, 1.005, 2.190, 2.865, 1.255, 0.705, 1.985, 1.035, and 2.675m.

Enter the readings in a level field book form and determine the reduced levels of the points by rise and fall method when the first reading was taken with a staff held on a bench mark of 535.000 m. 9

b) List and explain the functions of the parts of a dumpy level. 6

OR

VIII a) Determine the level difference between the points A and B, with the following observations taken with a dumpy level and a leveling staff using rise and fall method. 9

Station	BS	IS	FS	Remarks
A	1.250			
	0.925		1.850	CP
		2.120		
		2.810		
	1.855		3.210	CP
B			2.340	BM =+80.000

b) Describe different types of leveling staff. 6

MODULE IV

IX a) Explain longitudinal sectioning and cross sectioning. 9

b) Define the terms i) contour interval ii) Horizontal equivalent and iii) contour 6

OR

X a) The area within the contour line at the site of reservoir and the face of the proposed dam are as follows.

Contour	Area (m^2)
101	1100
102	13200
103	96000
104	151000
105	853000
106	968000
107	1376000

Taking 101 as the bottom level of the reservoir and 107 as the top level, calculate the capacity of the reservoir using Prismoidal rule. 9

b) Describe the procedure of cross sectioning. 6
