

TED (06)-1006

Reg.No.....

(REVISION—2006)

Signature.....

FIRST AND SECOND SEMESTER DIPLOMA EXAMINATION IN CIVIL
ENGINEERING—OCTOBER, 2010

SURVEYING—I

[Time : 3 hours

(Maximum marks : 75)

PART—A

(Maximum marks : 15)

Marks

I Answer the following questions in one or two sentences :

1. Define surveying.
2. Differentiate between plane surveying and geodetic surveying.
3. What do you mean by bearing of a line ?
4. Name the different meridian used in compass surveying.
5. List the different methods of plane table surveying.
6. What is meant by centering ?
7. Define the term line of collimation.
8. Define the terms curvature and refraction.
9. Differentiate between contour interval and horizontal equivalent.
10. What are the uses of a Ceylon Ghat Tracer ?

(10×1½=15)

PART—B

(Maximum marks : 60)

(Answer *one* full question from each unit)

UNIT—I

- II (a) What are the points to be considered in selection of stations for chain surveying ? 6
- (b) A steel tape was standardized at 30 m at 18°C. A line was measured as 460.4 m with temperature during measured as 30°C. Calculate the true distance of the line coefficient of thermal expansion for steel is 0.0000112 per degree rise of temperature. 6

OR

- III (a) Draw a typical page of a chain survey field book. 6
- (b) A survey line CDE crosses a river, D being on the bank of and E on the opposite bank. A perpendicular DF=150 m is ranged at D on the left. From F, bearing of E and C are observed to be 25° and 115° respectively. If the change of C is 1250 m and that of D is 1620 m, find the change of E. 6

UNIT—II

Marks

- IV (a) Explain the different systems adopted for expressing bearings in compass survey. 6
 (b) The bearing of one side of a plot in the shape of a regular pentagon is 70° . Find the bearings of the other sides of the plot when traversed in clockwise direction. 6

OR

- V (a) What is meant by a closing error in a closed traverse? How would you adjust it graphically? 6
 (b) Following bearings were observed in running a compass traverse. At what stations do you suspect local attraction? Find the corrected bearings. 6

Line	Observed bearing
AB	N $46^\circ 10'$ E
BA	S $46^\circ 10'$ W
BC	S $60^\circ 40'$ W
CB	N $61^\circ 20'$ E
CD	S $10^\circ 30'$ E
DC	N $8^\circ 50'$ W
DA	N $79^\circ 40'$ W
AD	S $80^\circ 40'$ E

UNIT—III

- VI (a) Describe the advantages and disadvantages of plane table survey. 6
 (b) Describe the method of orienting the plane table by magnetic needle. What are the limitations of this method? 6

OR

- VII (a) List out the instruments required for a plane table survey. Giving the function of each. 6
 (b) Explain the procedure for solving two point problem in plane table surveying. 6

UNIT—IV

- VIII (a) Explain the different types of levels used in levelling. 6
 (b) Following is the page of a level field book. Fill the missing reading and calculate the R.L. of the stations and apply the usual check:

Station	Staff readings			Rise	Fall	R.L.	Remark
	B.S.	I.S.	F.S.				
...							
		151.265	
		2.855			...		
...			...		0.125	150.125	
		1.705		0.265			
				0.525		
Sum	2.87			

OR

- IX (a) Discuss the temporary adjustments of the dumpy level.
 (b) Explain the various sources of error in levelling.

6
6

UNIT—V

- X (a) Describe the procedure for plotting the cross-sectioning.
 (b) Describe with neat sketch the principle and uses of a clinometer.

6
6

OR

- XI (a) The following reciprocal levels are taken with one level :

Level at	Readings on	
	A	B
A	1.156	2.597
B	0.987	2.418

Calculate the true difference of level between A and B.

6
6

- (b) Explain the various uses of contours.

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