TED (10) -3002
(Revision -2010)

N20-R01915

Reg.No………………..............
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – NOVEMBER -2020.

SURVEYING-I

(Maximum Marks : 100) [Time : 3 hours]

PART–A

(Maximum marks: 10) Marks

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

1. Write the principles of surveying.
2. List the instruments used in plane tabling.
3. Differentiate between fore bearing and back bearing.
4. State the two systems of reduction of level.
5. Define the term horizontal equivalent. (5x2=10)

PART - B

(Maximum Marks : 30)

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

1. Plot the following cross staff survey of field and calculate its area in sq.m.

	△ C	
	250	
D 20	200	
E 30	120	
	100	50 B
	0	
	△ A	

2. State any six instrumental error that may occur in plane table survey.
3. Convert the following quadrantal bearing to whole circle bearing.

   (i)N36^{o}30’E, (ii) S48^{o}30’E, (iii) S27^{o}00’W, (iv)N13^{o}13’E

4. Explain with neat sketch open traverse and closed traverse in compass survey.
5. Distinguish between simple leveling and differential leveling.

6. An observer standing on the deck of a ship just sea the light house is 25m above sea level. Find the distance of observer from the light house. Observer's position is at 5m above sea level.
7. Explain the different uses of contour maps. [5x6 =30]

PART - C

(Maximum marks : 60)
(Answer one full question from each unit. Each full question carries 15 marks)

UNIT I

III (a) Describe with the aid of a neat sketch the radiation method of plane table survey. (7)

(b) Explain how the distance on the slopping ground is measured by direct method(stepping method) in chain survey. (8)

OR

IV (a) Describe briefly the advantages and disadvantages of plane table survey. (7)

(b) There is a tower 'T' on the other bank. A point 'C' is selected opposite to the tower. CB is setout right angle on the line CT at C with optical squire. Line BC is produced to A and the angle CBT and CAT measured were 30° and 45°. If the length of the line AB=250m. Find the width of the river. (8)

UNIT- II

V (a) Distinguish between
(i)True meridian and Magnetic meridian.
(ii)Dip and Declination.
(iii) Whole circle bearing and Quart rental bearing. (9)

(b) The true bearing of a line $55^\circ 30'$. Find the magnetic bearing of the line if the magnetic declination is (i)$2^\circ 10'$East, (ii)$3^\circ 30'$W. (6)

OR

VI (a) The following bearings were observed with a compass. Calculate the interior angles and check them.

Line	F.B
AB	$64^{o}30'$
BC	$13^{o}00'$
CD	$147^{o}00'$
DE	$210^{o}30'$

(9)

(b) State the difference between prismatic compass and surveyor's compass. (6)

UNIT- III

VII (a) Define bench mark. What are the different types of bench mark, explain briefly. (6)

(b) Following is a page of an old level field book in which certain entries are missing. Prepare a new page of a level field book and fill the missing entries apply usual check.

Station	B.S	I.S	F.S	Rise	Fall	R.L	Remarks
1	2.345					200.000	B.M
2	1.650		x	0.035			
3		2.210			x		
4	x		1.850	x			
5	1.850		1.925		0.455		
6		x		x			
7	1.690		1.140	X			
8			x		x		

(9)

OR

VIII (a) Define the terms.

(i)Reduced level (ii)Line of collimation (iii)Change point (6)

(b) The following readings were observed succeeding with a leveling instrument. The instrument was shifted after 5^{th} and 11^{th} readings. Draw up a page of level book and determine the R.L of the various points if the R.L of the point which the first reading is taken 150.000 use the rise and fall method. The readings are 0.585, 1.010, 1.735, 3.295, 3.775, 0.350, 1.300, 1.795, 2.575, 3.375, 3.895, 1.735, 0.635, 1.605. (9)

UNIT – IV

IX (a) Write characteristics of contours. (8)

(b) The area within the contour line at the site of reservoir are as follows.

Contour	Area(sqm)
101	1100
102	13200
103	963000
104	151000
105	853000
106	968000
107	1376000

Taking 101 as the bottom level of the reservoir and 107 at the top level calculate the capacity of reservoir using trapezoidal formula. (7)

OR

X (a) What do you mean by permanent adjustment of a dumpy level? (6)

(b) Write the procedure for reciprocal leveling and obtain the expression for error in collimation. (9)

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