

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

SURVEYING – I

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define the term - Ranging.
2. Differentiate between true bearing and magnetic bearing.
3. Define the term Bench mark.
4. List the classification of levelling.
5. State the equation for correction for curvature.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. With the help of neat sketch explain reciprocal ranging.
2. A 612m long line measured by means of 20m chain was found to be 610.2m. What was the actual length of the chain ?
3. Convert the following WCB to reduced bearing.

(a) 192° 30'	(b) 76° 10'
(c) 288° 40'	(d) 150° 12'
4. The following are the fore bearing of the lines of a closed traverse ABCD. AB-N 48° 16' E, BC-S 60° 50' E, CD - S 14° 16' W, DA- N 85° 0' W. Calculate the interior angles of the traverse and apply the check.
5. Determine the correction for curvature, correction for refraction and combined correction for curvature and refraction for a distance of 8200m.
6. Describe the grid or square method of contouring.
7. Write the procedure of collimation adjustment of a dumpy level. (5×6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) Explain with the help of sketches the intersection method of plane table survey. 7
- (b) A river flowing from west to east. For determining the width of the river two points A and B are selected on the southern bank such that $AB = 85\text{m}$. A point P is selected on the other bank of the river such that $\angle PAB$ is 50° and $\angle PBA$ is 76° . Calculate the width of the river. 8

OR

- IV (a) List the points to be kept in mind while selecting the survey stations and arranging the frame work. 7
- (b) Find the area in square meter from the following field book entries.

	250	E
D40	200	
C 60	115	
	100	48B
	0	A

8

UNIT — II

- V (a) Define the term meridian. List the different types. Explain any two. 7
- (b) In a closed traverse ABCDA, the bearing of the line AB was measured as 136° . The included angles are $\angle A 22^\circ 30'$, $\angle B 76^\circ$, $\angle C 178^\circ$ and $\angle D 83^\circ 30'$. Calculate the bearing of all other lines. 8

OR

- VI (a) Define the term local attraction. What is its effect on included angles? 7
- (b) A traverse was observed with the following bearings. Find out the stations affected by local attraction. Also compute the correct bearings and tabulate them.

<u>Line</u>	<u>F.B</u>	<u>B.B</u>
AB	N $67^\circ-0'$ E	S $67^\circ-0'$ W
BC	S $35^\circ-30'$ E	N $35^\circ-0'$ W
CD	S $45^\circ-30'$ W	N $44^\circ -00'$ E
DE	S $75^\circ-30'$ W	N $76^\circ -30'$ E
EA	N $15^\circ-30'$ E	S $15^\circ -30'$ W

8

UNIT — III

- VII (a) List the names of different types of bench marks. Explain any two. 7
- (b) The following consecutive readings were taken with a dumpy level 1.895, 1.500, 1.865, 2.570, 2.990, 2.020, 2.410, 2.520, 2.960, 3.115. The level was shifted after fourth, sixth and eighth readings. The RL of the first point was 30.50. Find the highest and lowest points. Use HC method. 8

OR

- VIII (a) With the help of figures, explain the terms. 8
- (i) Simple levelling (ii) Differential levelling
- (b) The following readings were taken with a dumpy level on a continuously sloping ground at a common interval of 30m 0.500, 1.300, 1.725, 2.935, 3.800, 0.725, 2.205, 3.200 and 4.025. Find the gradient of the line joining first and last point. The RL of the first point is 150.00m use rise and fall system. 7

UNIT — IV

- IX (a) Explain any two methods of interpolation of contours. 8
- (b) The observer at a height of 40m above mean sea level just sees a Luminous object on the top of a hill. The distance between the observers station and the hill is 100km. What is the height of the hill ? 7

OR

- X (a) Explain profile levelling. 7
- (b) Explain indirect method of locating contours. 8
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