

6225

BOARD DIPLOMA EXAMINATION, (C-16)

OCTOBER/NOVEMBER—2023

DCE - THIRD SEMESTER EXAMINATION

SURVEYING—II

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.
(4) Assume suitable data if necessary.

1. List the component parts of Theodolite.
2. Define latitude and departure of a survey line.
3. Distinguish between consecutive coordinates and independent coordinates.
4. State the different cases that come under trigonometric leveling.
5. What is meant by index error and how can it be eliminated?
- * 6. What is tacheometry? State its main purpose.
7. Distinguish between fixed hair and movable hair methods in tacheometry.
8. Establish a relationship between the degree of simple curve and its radius.
9. Define the term (a) point of commencement, (b) long chord and (c) subchord.
10. Write any three advantages of total station.

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PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
 (2) Each question carries **ten** marks.
 (3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** Explain in detail, the measurement of horizontal angle by using the method of repetition with a Theodolite. Also draw the appropriate tabular form for recording the observation.
- 12.** The latitudes and departures of the lines of a closed traverse are given below. Calculate the area of traverse :

LINE	NORTHING	SOUTHING	EASTING	WESTING
AB		157.2	154.8	
BC	210.5		52.5	
CD	175.4			98.3
DA		228.7		109

- 13.** Determine the elevation of top of an aerial pole from the following observations :

INST AT STATION	READING ON BM	ANGLE OF ELEVATION	REMARKS
A	1.266	10° 48'	RL OF BM = 248.36 m Distance AB = 30 m
B	1.086	+7° 12'	

Stations A, B and top of the aerial pole are in the same vertical plane.

- 14.** Derive distance and elevation formulae for fixed hair method in tacheometry for inclined sights when the staff held vertical with a neat sketch.

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15. A tachometer was setup at station A and the following observations were obtained on a vertically held staff :

Station	Staff Station	Vertical Angle	Hair Readings	Remarks
A	BM	-2° 18'	3.225, 3.550, 3.875	RL OF BM = 437.655 m
A	B	+8° 36'	1.650, 2.515, 3.380	

16. Calculate the radial offsets to be set out at 10 m interval along the tangents to locate a 320 m radius curve. Take deflection angle equal to 20° and length of each chain being 20 m.
17. Calculate the necessary data to set out a right-handed circular curve of 600 m radius to connect two straights intersecting at a chainage of 3605 m by Rankine's method of deflection angles, the angle of deflection being 25° and peg interval is 30 m.
18. Explain resection method using total station.

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