

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2024**

SURVEYING II

[Note: - Missing data if any may be assumed.]

[Maximum Marks: **100**]

[Time: **3 Hours**]

PART-A

[Maximum Marks: **10**]

- I. (Answer *all* questions in one or two sentences. Each question carries **2** marks)
1. State Swinging of telescope.
 2. Distinguish between latitude and departure.
 3. State on additive and multiplying constants of a tacheometer.
 4. State mid ordinate of a curve.
 5. Mention various methods of setting out of a simple curve. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

- II. (Answer *any five* of the following questions. Each question carries **6** marks)
1. Explain the temporary adjustments of a transit theodolite.
 2. Discuss the procedure of measurement of horizontal angle by repetition method.
 3. Write a note on omitted measurements and list the general cases of omitted measurements.
 4. Compare consecutive and independent coordinates.
 5. Explain the procedure for measuring the vertical angle with a theodolite.
 6. Explain different Systems of tacheometry.
 7. List the components of a GPS receiver. (5 x 6 = 30)

PART-C

[Maximum Marks: **60**]

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

UNIT – I

- III. a. Briefly explain the following technical terms.
- (i) Transiting (ii) Telescope normal (iii) Telescope inverted (iv) Vertical axis. (8)
- b. Write down the procedure for measuring bearing of a line using theodolite. (7)

OR

- IV. a. List the fundamental lines of a theodolite and write the desired relation between them. (7)
b. Which method will you prefer to measure 4 horizontal angles from a single station O?
Write down the procedure for the method. (8)

UNIT – II

- V. a. The following angles were measured in running a closed traverse ABCDEA in clockwise direction.

A) $291^{\circ}33'$ B) $225^{\circ}13'$ C) $211^{\circ}36'$ D) $300^{\circ}26'$ E) $231^{\circ}12'$.

Compute the bearings of the remaining sides of the traverse, given that the observed bearing of AB as $10^{\circ}12'$. (8)

- b. Differentiate open and closed traverses. Write down the checks applied in closed traverse. (7)

OR

- VI. a. Discuss the Gales Traverse Table and its preparation. (8)
b. The following are the lengths and bearings of the sides of a closed traverse PQRS.
Calculate the length and bearing of line SP.

Line	Length	Bearing
PQ	70.80	$140^{\circ}15'$
QR	195.90	$36^{\circ}25'$
RS	35.20	$338^{\circ}45'$

(7)

UNIT- III

- VII. a. Derive the distance and elevation formula in stadia tacheometry for horizontal line of sight. (7)

- b. Determine the RL of top of Chimney from the following observations. Station A, B and Top of Chimney are in the same vertical plane.

Inst. Station	Reading on BM	Vertical Angle	RL of BM	Distance AB in m	Remarks
A	1.578	$10^{\circ}12'$	543.075	30 m	A & B in line with the top of chimney
B	1.269	$8^{\circ}20'$			

(8)

OR

- VIII. a. Write brief notes on anallactic lens, its functions, advantages and disadvantages. (7)
- b. An instrument was set up at P and the angle of elevation to a vane 4 m above the foot of the staff held at Q was $9^{\circ}30'$. The horizontal distance between P and Q was known to be 2000m. Determine the RL of the staff station Q, given that RL of the instrument axis was 2650.38m. (8)

UNIT - IV

- IX. a. Explain different types of curves with the help of neat sketches. (8)
- b. List out different operations that can be performed using Total Station. (7)

OR

- X. a. Write short notes on remote sensing and its applications. (7)
- b. Explain the following with the help of a neat figure:
- i) Back Tangent ii) Forward Tangent iii) Point of Curve iv) Point of tangency. (8)
