



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

InSem Examination-II Summer 2025	
Exam Seat No.:	
Academic Year: 2024-2025	Semester: IV
Class: SY	Program: B.Tech
Branch Code: CIV	Pattern: 2023
Name of Course: Surveying	Course Code: 2304212
Max. Marks: 30	Duration: 1 Hr.15 Min.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 pages.
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome of the Question/sub-question.

Marks CO

Question No. 1

- 1 a) State the principle of prismatic compass and explain the components in detail. (7) CO1, CO2

Question No. 2

- 2 a) The bearings in the quadrantal system observed while traversing with a compass and chain are given below. Find the local attraction at the affected stations and also the corrected bearings. (8) CO1, CO2

Line	FB	BB
AB	S 36 ⁰ 15' E	N 36 ⁰ 15' W
BC	S 44 ⁰ 30' W	N 45 ⁰ 30' E
CD	N 71 ⁰ 45' W	S 71 ⁰ 00' E
DE	N 14 ⁰ 00' E	S 14 ⁰ 30' W
EA	N 61 ⁰ 15' E	S 51 ⁰ 00' W

OR

- 2 b) The bearings observed at the stations of a closed traverse are given below. Check whether the bearings are correct. If not, correct the bearings.

(8) CO1,
CO2

Line	FB	BB
AB	122°15'	302°15'
BC	66°00'	243°45'
CD	308°15'	133°00'
DA	198°00'	15°30'

Question No. 3

- 3 a) Define the following terms:

(7) CO1,
CO2

- i) Mean sea level ii) Datum iii) Reduced level iv) Bench mark
v) Change point vi) Levelling vii) Back sight viii) Curvature

Question No. 4

- 4 a) The following consecutive staff readings were taken with a dumpy level and 3m staff;

(8) CO1,
CO2

0.602, 1.234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824 and 2.722

The instrument was shifted after 4th and 8th reading. Determine the reduced levels of all the points if the reduced level of the first point was 200.000 m. Use collimation plane method and apply usual arithmetic check.

OR

- 4 b) The following records refer to an operation involving reciprocal levelling.

(8) CO1,
CO2

Instrument at	Staff reading on		Remarks
	A	B	
A	1.150	2.590	Distance AB = 500 m
B	0.980	2.410	RL of A = 525.00 m

Find: 1) The true RL of B

2) The combined correction for curvature and refraction.

3) The collimation error

..... End of question paper.....