

KATHMANDU UNIVERSITY
End Semester Examination
July/August 2024

Level : B.Arch.
Year : II
Time : 2 hrs. 30mins.

15 JUL 2024

Course : CIEG 232
Semester : I
F. M. : 40

SECTION "B"

[4Q. × 4 = 16 marks]

Attempt *ANY FOUR* Questions. Assume suitable data if necessary.

1. What is Surveying? Explain various source of error in Surveying. [1+3]
2. In passing an obstacle in the form of pond, stations A and D, on the main line were taken on the opposite sides of the pond. The line AB, 200 m long and a second line AC, 250 m long was ranged on the left and right side of the line AD respectively. The points B, D and C being in the same straight line. BD and DC were then chained and found to be 125m and 150m respectively. Find the length of AD. [1+3]
3. Explain the process of Reciprocal Levelling with necessary diagram. [4]
4. A steel tape of nominal length 30m, was used to measures a line AB suspending it between supports. If the measured length was 29.861m when the slope angle was $3^{\circ}45'$ and the mean temperature and tension were 10°C and 100 N respectively. Determine the correct horizontal length. The standardized length of the tape was 30.004m at 20°C and 44.5N Tension. The weight of the tape was 0.15 N/m and cross-sectional area 2mm^2 [6]
5. List out the fundamental lines of the Theodolite. Explain briefly the relation between them with proper sketch. [1+3]

SECTION "C"

[4Q. × 6 = 24 marks]

Attempt *ALL* Questions. Assume suitable data if necessary.

6. The following bearings were taken in running the compass traverse.

Line	F. B	B. B
AB	S $37^{\circ}30'$ E	N $37^{\circ}30'$ W
BC	S $43^{\circ}15'$ W	N $44^{\circ}15'$ E
CD	N $73^{\circ}00'$ W	S $72^{\circ}15'$ E
DE	N $12^{\circ}45'$ E	S $13^{\circ}15'$ W
EA	N $60^{\circ}00'$ E	S $59^{\circ}00'$ W

- Compute the interior angle and correct them for observational errors. Assuming the observed bearing of the line AB to be correct, adjust the bearing of the remaining sides. [6]
7. Define Orientation in Plane Table Surveying. Explain the Intersection and Traversing method of Plane Table Survey with appropriate sketch. [1+5]

P.T.O.

8. Write short notes on (*ANY THREE*) [3×2=6]
- a. Types of Bearing System
 - b. Temporary Adjustment in Theodolite
 - c. Two Peg Test
 - d. Indirect Ranging
9. The following consecutive reading were taken with a level and 4 m staff on a continuously slopping ground at common interval of 30m. The readings are 0.85 (On A), 1.545, 2.335, 3.115, 3.825, 0.455, 1.380, 2.055, 2.855, 3.455, 0.585, 1.015, 1.850, 2.755, 3.845 (on B)
- The RL of A was 380.500 m. Make entries in a level book and apply the usual checks. Determine gradient of AB [6]

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Marks Scored:

Level : B.Arch.

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Exam Roll No. :

Time: 30 mins.

Course : CIEG 232

Semester : I

F. M. : 10

Registration No.:

Date

1.5 JUL 2024

SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose and encircle the most appropriate option from each set of choices

- Which of the scale is the largest one?
a. 1 cm = 50 m b. 1:42000 c. RF=1/300000 d. 1 cm=50 km
- The bearing of line AB is $152^{\circ} 30'$ and angle ABC measured clockwise is $124^{\circ} 28'$.
a. $28^{\circ} 52'$ b. $N60^{\circ}W$ c. $N60^{\circ}E$ d. $96^{\circ} 58'$
- Geodetic survey is done for area _____
a. Greater than 260 sq.km b. Less than 260 sq. km
c. Greater than 100 sq. km d. Less than 100 sq. km
- A Pond is an obstacle to _____
a. Chaining not to ranging b. ranging but not to chaining
c. Both chaining and ranging d. neither ranging nor chaining
- The length of the Gunter's chain is _____
a. 20ft b. 66 ft c. 66m d. 100 m
- If N is the number of sides of a traverse, while traversing clockwise the sum of the included angles should be _____
c. 360° b. $(2n+4) \times 90$ c. $(2n-3) \times 90$ d. $(2n-4) \times 90$
- The area of the plot was measured with a 30 m chain and found to be 5000 sq.m. It was afterward detected that the chain was 10cm too short. The true area of the field is _____
a. 4025.52 sq. m b. 4821.526 sq. m c. 5021.265 sq. m d. 4966.72 sq. m
- The triangle is said to be ill condition triangles if the angles are _____
a. greater than 30° and greater than 120° b. less than 36° and greater than 150°
c. less than 30° and greater than 120° d. greater than 36° and greater than 150°
- The convenient direction which is assumed as a meridian for measuring bearings of survey lines, is known as _____
a. Arbitrary meridian b. True Meridian
c. Magnetic Meridian d. Grid Meridian.

