

CBCS SCHEME

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18MN33

Third Semester B.E. Degree Examination, July/August 2022 Mine Surveying - I

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the procedure to measure the linear distance between two points when there is an obstacle to chaining and ranging (minimum 5 cases). (10 Marks)
- b. A survey line ABC cuts the banks of a river at B & C and to determine the distance BC, a line BE (60m) long was set out roughly parallel to the river. A point D was then found in CE produced and middle point F of DB was determined. EF was then produced to G, making FG equal to EF & DG produced to cut the survey line in H. GH & HB was found to be 40m & 80m long respectively. Calculate the distance from B to C. (10 Marks)

OR

- 2 a. Discuss the methods of chaining in uneven / slopping ground. (10 Marks)
- b. The length of a survey line was measured with a 20m chain equal to 1200m. If the length is again measured with a 25m chain, it is 1212m. On comparing the 20m chain with the test gauge, it was 1 decimeter too long. Find the actual length of the 25m chain used. (10 Marks)

Module-2

- 3 a. Calculate the interior angles of traverse provided the bearings of the sides of the traverse ABCDE are given as follows :

Line	F.B	B.B
AB	97° 15'	277° 15'
BC	12°	192°
CD	271° 30'	91° 30'
DE	189° 15'	9° 15'
EA	124° 45'	304° 45'

(10 Marks)

- b. Explain the method of determining the horizontal angle using Reiteration method. (10 Marks)

OR

- 4 a. Explain the methods of balancing the traverse. (10 Marks)
- b. Explain the method of determining the horizontal angle using Reiteration method. (10 Marks)

Module-3

- 5 a. The following consecutive readings were taken with a dumpy level : 0.894 , 1.643 , 2.896 , 3.016 , 0.954 , 0.692 , 0.582 , 0.251 , 1.532 , 0.996 , 2.135. The instrument was shifted after the fourth and the eighth readings. The first reading taken on the staff held on the Bench mark of R.L. 820.765m. What is the difference of level between the first and last points? (10 Marks)

- b. Determine the effect of curvature, refraction and combined on measurement of elevation.

(10 Marks)

OR

- 6 a. The following consecutive readings were taken with a dumpy level : 0.895 , 1.645 , 2.895 , 3.015 , 0.955 , 0.695 , 0.585 , 0.250 , 1.535 , 0.955 , 2.135. The instrument was shifted after the fourth and eight readings. The first reading was taken on the staff on the bench mark of R.L. 820.765m. Calculate the RL with usual check and find the gradient of the first and last position between the measured distance of 120.50m. (10 Marks)
- b. Explain the Temporary adjustments of leveling. (10 Marks)

Module-4

- 7 a. Explain the characteristics of contour. (10 Marks)
- b. Explain the Indirect method of locating the contour. (10 Marks)

OR

- 8 a. Explain the Radiation method of determining the area by plane table. (10 Marks)
- b. Explain the Intersection method of determining the area by Plane table. (10 Marks)

Module-5

- 9 a. The following perpendicular affects were taken from a chain line to an irregular boundary :

Chainage (m)	0	10	25	42	60	75
Offset (m)	15.5	26.2	31.8	25.6	29	31.5

- Calculate the area between the chain line, the boundary and the end offsets. (10 Marks)
- b. Explain the method determining the Volume from Spot levels. (10 Marks)

OR

- 10 a. Explain the methods of determining the area from a baseline for an irregular boundary at regular intervals. (10 Marks)
- b. A railway embankment is 10m wide with side slopes $1\frac{1}{2}$ to 1. Assuming the ground to be level in a direction transverse to the centre line, calculate the volume contained in a length of 120m, the centre heights at 20m intervals being in meters 2.2 , 3.7 , 3.8 , 4.0 , 3.8 , 2.8 , 2.5. (10 Marks)
