CBCS SCHEME

USN

18MN33

Third Semester B.E. Degree Examination, Jan./Feb. 2023
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 principles and classification of surveying. **(10 Marks)**

b. A 30m chain was found to be 0.15m too long after chaining a distance of 5000m it was found to be 0.3m too long after measuring a total distance of 10000m. At the start of the work, the chain was tested and found to be exactly 30m in length. Find out the correct length of the measured distance. **(10 Marks)**

OR

2 a. Explain the various instruments for measuring distances and explain the various obstacles in taping. **(10 Marks)**

b. A chain line PQR crosses a river, the points Q & R are on the near and distant banks respectively. A line QS of 80m is set out at right angles to the chain line at Q. The bearings of S to the stations R and Q were 65° & 110° respectively. Find out the width of the river. **(10 Marks)**

Module-2

3 a. Calculate the included angles A, B and C of a triangle from the following data :

Side	F.B	B.B
AB	45°	225°
BC	130°	310°
CA	270°	90°

(10 Marks)

b. Following are the coordinates of lines AB, BC, CD and DA in a theodolite traversing. Adjust the traverse by applying the transit rule.

Line	Lat	Dep
AB	123.35	35.68
BC	93.82	205.68
CD	-177.44	70.11
DA	-39.21	-312.25

(10 Marks)

OR

4 a. Explain the method of measuring horizontal and vertical angles. **(10 Marks)**

b. Correct the following bearings taken in a compass survey for a closed traverse ABCDE for the observational errors : Table 4(b). **(10 Marks)**

Line	F.B	B.B
AB	83°	260°
BC	141°	320°
CD	170°	350°
DE	240°	58°
EA	328°	153°

Table Q4(b)

Module-3

5 a. Following consecutive staff reading were taken with a level along a sloping ground line AB at a regular distance of 20m by using 4m leveling staff.
0.352 , 0.787 , 1.832 , 2.956 , 3.758 , 0.953 , 1.756 , 2.738 , 3.872 , 0.812 , 2.325 and 3.137.
Rule out a page of level field book and enter the above readings R.L of point A is 320.288.
Calculate the R.L of all points by rise and fall system and workout the gradient of line AB. **(10 Marks)**

b. Determine the effect of curvature and refraction. **(10 Marks)**

OR

6 a. Explain the different methods of leveling. **(10 Marks)**

b. Following consecutive readings were taken on a continuously sloping ground at 30m interval with a dump level and 4m leveling staff 0.585 on A , 0.936 , 1.953 , 2.846 , 3.644 , 3.938 , 0.962 , 1.035 , 1.035 , 1.089 , 2.534 , 3.844 , 0.956 , 1.579 , 3.016 on B. The elevation of A was 520.450m. i) Prepare a page of level book ii) Calculate the R.L of all points by R & F method iii) Determine the gradient of line AB iv) Checks. **(10 Marks)**

Module-4

7 a. Explain the characteristics of contours with suitable sketch. **(10 Marks)**

b. Explain Radiation method of plane table surveying. **(10 Marks)**

OR

8 a. Explain the Indirect method of locating contour. **(10 Marks)**

b. Explain Intersection method of plane table surveying. **(10 Marks)**

Module-5

9 a. Explain the method of determining area by offsets at equal intervals. **(10 Marks)**

b. Following perpendiculars offsets were taken from a chain line to a curved boundary line at intervals of 10m. 0 , 7.83 , 5.26 , 6.45 , 7.33 , 7.87 , 8.23 , 0.
Compute the area between the chain line the curved boundary line and the end offsets by
i) Average Ordinate rule ii) Simpson's rule. **(10 Marks)**

OR

10 a. Explain the General methods of calculations of volumes for embankments and cuttings. **(10 Marks)**

b. Explain the method of determining volume
i) Spot level method ii) Contour. **(10 Marks)**

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