

CBCS SCHEME

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18CV35

Third Semester B.E. Degree Examination, Dec.2023/Jan.2024 Basic Surveying

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Briefly explain classification of survey based on objective of survey. (06 Marks)
- b. With a neat sketch explain any two methods of obstacles to chaining but not for ranging. (06 Marks)
- c. Define Precision, Accuracy, Plan and Map. (08 Marks)

OR

- 2 a. Explain indirect ranging reciprocal ranging. (06 Marks)
- b. Explain sloping ground distance measurement using indirect method. (06 Marks)
- c. What is surveying? Explain classification based in nature of field of survey. (08 Marks)

Module-2

- 3 a. Differentiate between Prismatic compass and Surveyor compass. (10 Marks)
- b. The following bearing were observed with a compass with neat sketch calculate interior angles.

Line	AB	BC	CD	DE	EA
FB	60°	120°	50°	210°	300°

(10 Marks)

OR

- 4 a. Define Dip, magnetic declination isoclinic line, and isogonics lines. (08 Marks)
- b. Following are the observation taken form a closed traverse, balance the traverse by Bowditch rule.

Line	AB	BC	CD	DE	EA
Length	200m	130m	100m	250m	320
Latitude	-173.2	0	86.6	250	-154.9
Departure	100	130	50	0	-280

(12 Marks)

Module-3

- 5 a. Briefly explain temporary adjustment of leveling. (08 Marks)
- b. The following consecutive readings were taken with a level and 3 meter staff on continuously sloping ground at a common interval of 20 meters.
0.602, 1.234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824, 2.722.
The RL of first pt was 192.122. Rule out page of a level field book and enter the above readings. Calculate the reduced levels of the point and also the gradient of the line joining the first and last point (Rise and fall method). (12 Marks)

OR

- 6 a. Define Bench mark, Datum, Mean sea level and Reduced level. (10 Marks)
 b. Following reading have been taken from the page of an old level book. Reconstruct the page. Fill up missing quantizes and apply the usual checks :

Point	BS	IS	FS	Risc	Fall	RL	Remarks
1	3.125						B.M
2	X		X	1.325		125.005	T.P
3		2.320			0.055	X	
4		X				125.350	
5	X		2.655			X	T.P
6	1.620		3.205		2.165	X	T.P
7		3.625				X	
8			X			122.590	T.B.M

(10 Marks)

Module-4

- 7 a. What is orientation of plane table? Explain the various methods of orientation. (10 Marks)
 b. Explain radiation method of plane table surveying with a neat sketch. (10 Marks)

OR

- 8 a. What is resection? What are the different methods of resection? Explain any one method. (10 Marks)
 b. With a neat sketch explain two point problems. (10 Marks)

Module-5

- 9 a. With the help of neat sketch list the characteristics of contour. (10 Marks)
 b. The following perpendicular offset were taken at 10m intervals from a survey line to an irregular boundary line :
 3.25, 5.60, 4.20, 6.65, 8.75, 6.20, 3.25, 4.20 and 5.65.
 Calculate area by trapezoidal rule and Simpson's rule. (10 Marks)

OR

- 10 a. Define contours. What are the factors governing the choice of proper contour intervals? (10 Marks)
 b. Plot the following cross staff survey of a field ABCDEFG and calculate its area.

	750	D
	650	210E
C180	490	
	300	250F
B160	180	
	100	50G
	0	A

(10 Marks)
