



SNS COLLEGE OF TECHNOLOGY
COIMBATORE-35
DEPARTMENT OF AGRICULTURE ENGINEERING
19AGB201- SURVEYING AND LEVELING



16 MARKS

UNIT I

1. Explain: Survey instruments, their care and adjustment.
2. Explain the classifications of surveying?
3. Write short notes on tape corrections
4. Explain the principles of Surveying.
5. Write short notes on enlarging and reducing figures
6. What are the methods and instruments used in setting out perpendiculars explain in detail.
7. Explain the various methods of obstacles in chaining.

UNIT II

1. What is mean by plotting? Explain the procedure and instruments used for plotting.
2. Describe the steps to be carried out in field work of chain surveying.
3. Write short notes on :
 - a. An Engineers chain.
 - b. Cross staff.
4. Give a list of sources of error in chain survey and say which of these are cumulative and which are compensating.
5. Describe the construction and working of an optical square with a neat sketch.
6. What are the methods of Ranging? Explain in detail.

UNIT III

1. The following offsets are taken from a survey line to a curved boundary line:

Distance (m)	0	5	10	15	20	30	40	60	80
Offsets (m)	2.50	3.80	4.60	5.20	6.10	4.70	5.80	3.90	2.20

Find the area between the survey line, the curved boundary line, and the first and the last offsets by Trapezoidal rule and Simpson's rule.

2. The following are the corresponding data to an irregular cross section. The width of the road at formation level is 6m and side slope is 1: 1. Calculate the cross sectional area.

LEFT	CENTRE	RIGHT	
<u>+2.25</u> 5.50		<u>+6.20</u> 4.5	<u>+7.0</u>
<u>+3.20</u> 3.00	<u>+3.75</u> 0		9.0



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3. An embankment of which 10m and side slope 3/2:1 is required to be made on a ground which is level in a direction transverse to the center line. The central heights at 40m intervals are as follows. 0.90, 1.25, 2.15, 2.50, 1.85, 1.35 and 0.85. Calculate the volume of earthwork by trapezoidal and prismoidal rule.
4. Explain the mass haul diagram with its characteristics and uses.
5. The following offsets were taken at 15m intervals from a survey line to an irregular line: 3.50, 4.30, 6.75, 5.25, 7.50, 8.80, 7.90, 6.40, 4.40, 3.25 m. Calculate the area enclosed between the survey line, the irregular boundary line, and the first and last offsets, by: The mid-ordinate rule, The average- ordinate rule, The trapezoidal rule and Simpson's rule.
6. Describe the three indirect method of locating contours.
7. The offsets taken at 5 m intervals from a chain line to a curved boundary are: 0, 4.6, 6.5, 6.8, 5.2, 3.5, 2.2 m. Calculate the area between the chain line, the curved boundary line and the end offsets using Simpson's rule.
8. The following offsets were taken from a chain line to an irregular boundary line at an interval of 10 m:
0, 2.50, 3.50, 5.00, 4.60, 3.20, 0 m
Compute the area between the chain line, the irregular boundary line and the end of offsets by:
 - a) Mid ordinate rule
 - b) Average –ordinate rule
 - c) Trapezoidal rule
 - d) Simpson's rule

UNIT IV

1. Explain the prismatic compass with neat diagram?
2. Explain Bearings
 - True Meridian & Bearings
 - Magnetic Meridian& Bearings
 - Arbitrary Meridian& Bearings.
3. What are the instruments used in plane table surveying. Explain in detail.
4. What are the methods of plane table surveying? Explain any two methods.
5. Explain two point problem and three point problem in plane table surveying.
6. Explain the method of radiation and intersection in plane table surveying?
7. Explain the method of traversing in plane table surveying?
8. State the advantages and disadvantages of plane tabling.
9. List the various types of errors in plane tabling. And also state the precautionary measures to



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overcome them.

10. Discuss the advantages and disadvantages of plane table surveying over other methods of surveying.
11. Explain the merits and demerits of Plane tabling.
12. List the common errors in plane tabling and the precautions to be taken.

UNIT V

1. What are the types of Bench Mark? Explain in detail.
2. Explain temporary and permanent adjustment of spirit level.
3. What are the errors in levelling?
4. Explain in detail about Precise levelling.
5. Draw the neat sketch of dumpy level, mention the parts and explain their functions.
6. Discuss the effects of curvature and refraction correction in leveling and derive the expression for these corrections.
7. List out the temporary and permanent corrections of the leveling
8. Find the correction for Curvature correction and Refraction correction for a distance of 1200m. Also find the combined correction for the distance of 3400m.
9. Explain: (i) Reciprocal leveling (ii) Fly leveling (iii) Differential leveling (iv) Simple leveling and state where each is used.
10. What is meant by sensitiveness of bubble? How is it determined?
11. Explain the procedure for conducting longitudinal section (LS) with neat sketch.
12. Explain the procedure for conducting Cross-section (CS) with neat sketch.
13. Explain the characteristics of contour with neat diagram.
14. What are the methods of contouring? Explain in detail.
15. What are the methods of interpolation of contours? Explain in detail.