

PART A

1. Infer the purpose of an optical Square?
2. Define well- conditioned triangle.
3. Write the formula to calculate the area in multi leveled section.
4. Predict the errors eliminated in measurement of horizontal angle by method of repetition?
5. Point out the formula to calculate the amount of earth work volume.
6. What are offsets? Name the types
7. Interpret Well conditioned and Ill conditioned Triangles
8. How do you calculate the capacity if reservoir from the contour map
9. What are the errors eliminated in measurement of horizontal angle by method of repetition
10. What is mean by ranging line

PART B

1. An embankment of width 10 m and side slopes 1 ½:1 is required to be made on a ground which is level in a direction transverse to the centre line. The central heights at 40 m intervals are as follows:  
0.90,1.25,2.15,2.50,1.85,1.35, and 0.85  
Estimate the volume of earth work according to  
i) Trapezoidal formula  
ii) Prismoidal formula
2. Describe the construction and working of an optical square with a neat sketch.
3. Explain the steps to be carried out in field work of chain surveying.
4. Give a list of sources of error in chain survey and say which of these are cumulative and which are compensating..
5. 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) the average –ordinate rule
6. The following offsets are taken from a survey line to a curved boundary line:

<b>Distance</b>	0	5	10	15	20	30	40	60	80
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<b>(m)</b>									
<b>Offsets (m)</b>	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.

7. An embankment of width 10 m and side slopes 1 1/2:1 is required to be made on a ground which is level in a direction transverse to the centre line. The central heights at 40 m intervals are as follows:

1.90, 2.25, 3.15, 4.50, 2.85, 1.35, and 0.85

Estimate the volume of earth work according to

i) Trapezoidal formula

ii) Prismoidal formula

8. The following offsets were taken from a chain line to an irregular boundary line at an interval of 10 m:

1, 3.50, 4.50, 5.60, 4.60, 2.20, 0 m

Compute the area between the chain line, the irregular boundary line and the end of offsets by:

a) mid ordinate rule

b) the average –ordinate rule

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

<b>Distance (m)</b>	0	5	10	15	20	30	40	60	80
<b>Offsets (m)</b>	3.50	4.80	5.60	6.20	7.10	5.70	4.80	3.90	1.20

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.

10. What are the methods of ranging, explain in detail