

6225

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DCE – THIRD SEMESTER

SURVEYING - II

Time: 3 hours

Max Marks: 80

PART – A

10X3= 30M

Instructions: 1. Answer **all** questions.
2. Each question carries five marks.
3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. What are the fundamental lines of transit theodolite.
2. Define the following terms
a) Line of collimation b) Line of sight c) Vertical Axis.
3. State the temporary adjustments of a theodolite.
4. State the principle and necessity of conducting trigonometric leveling.
5. In order to determine the R.L of the top of chimney the theodolite was set up at a distance of 30m from its base. The vertical angle measured to the top of the chimney was 28° The back sight taken on a near by B.M. of R.L 148.500m was 1.125m. Determine the R. L. of the top of the chimney.
6. State the principle of Tachometer.
7. The distance of 50m and 300m were accurately measured out and the intercepts on the staff between the outer stadia were 0.49 at the former distance and 2.99 at the later. Find out the constants of the Tacheometer.
8. Draw a neat sketch of simple curve and name its elements.
9. If the radius of curve is 300m, calculate the degree of curve.
10. List any three uses of total station.

PART – B

5 X 10 = 50

Instructions:

1. Answer any **Five** questions
2. Each question carries **TEN** Marks.
3. Answer should be comprehensive and Criteria for Valuation is the content but not the length of the answer.

11. Draw a neat sketch of a theodolite and name the component parts.
12. a) Explain the method of measuring angles by reiteration method.
b) Write about the instrumental errors in theodolite surveying.
13. The following observations were made to determine the elevation of tower. A is the top of the tower. Find the R.L of point A.

Instrument at	Sight to	Vertical angle	Remarks
B	A	$22^{\circ} 40'$	Staff reading on B.M 1.270
C	A	$15^{\circ} 25'$	Staff reading on BM 1.370 R.L of BM is 145.000 Distance BC = 25.6m.

14. A tacheometer was set up at an intermediate station C on the line AB and the following readings were obtained.

Staff station	Vertical Angle	Staff Readings		
A	$-5^{\circ} 22'$	0.425	1.540	2.805
B	$+3^{\circ} 22'$	0.925	1.760	2.720

The instrument was fitted with an anallatic lens and has a constant of 100.
Find the gradient of the line joining station A and B.

15. The following observations were made on a vertically held staff with a tachometer set up at an intermediate point on a straight line AB.

Staff station	Vertical Angle	Staff intercept (m)	Axial Hair Reading
A	$-7^{\circ} 32'$	2.720	2.400
B	$-7^{\circ} 54'$	1.425	2.720

The instrument was fitted with an anallatic lens and has a constant of 100. Compute the horizontal length AB and the R.L of B given that A has a R.L of 120.00 metres.

16. If the tangents to a circular curve having 400m radius intersect at an angle of 120° and the chainage of point of intersection is 1430.5 m calculate
- Tangent distance
 - chainage of T_2
 - Length of long chord
 - Length of curve.
17. A simple curve has a radius of 300m and a long chord of length 120m. Calculate offsets to the curve from the long chord at 10m intervals.
18. Explain how traversing is done using a total station.

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