

4427

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DCE - FOURTH SEMESTER EXAMINATION
SURVEYING – III

Time: 3 Hours

Max.Marks:80

PART-A**10x3=30M**

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

- 1) Derive the formula for finding height and elevation of object when base of the object is accessible?
- 2) The stadia readings with horizontal sight on a vertical staff are 1.285 and 1.780, Determine the distance between the instrument and staff stations, if the multiplying and additive constants are 100 and 0.
- 3) State the different methods of tacheometry?
- 4) Draw the neat sketch of simple curve and show the components.
- 5) List out the different types of horizontal curves.
- 6) State the principle of Photogrammetry.
- 7) Define GIS.
- 8) State any three advantages of GPS.
- 9) List any three advantages of Total station.
- 10) List any three parts of Total station and state their functions.

PART-B

5x10=50M

- Instructions:** 1) Answer any five questions. Each question carries 10marks
2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

- 11) Determine elevation of top of an aerial pole from the following observations.

Instrument at	Vertical angle to top of aerial pole	Staff reading on BM(m)	Remarks
A	24°40'	1.835	RL of BM=150.000m
B	16°20'	1.950	Distance AB=30m A,B and top of an aerial pole are in same vertical plane.

- 12) Derive the formula to find the distance and elevation of the object when the base of the object is inaccessible and the instrument stations and object are in the same vertical plane.
- 13) In tangential Tacheometry, a target 2.5m high was held vertically over a station and vertical angles observed to the top and bottom of target. They were +3°26' and -2°24' respectively. If the bottom of the target was 1.75m above the ground. Determine the horizontal distance of the target from the instrument and ground level at the target station. Back sight reading on staff with horizontal sight was 2.560m on a BM of elevation 120.500m.
- 14) To determine the gradient between two points A and B, a tacheometer was set up at another station C and the following observations were taken with staff held vertical.

Instrument at	Staff Station	Vertical angle	Hair Readings
C	A	+4°20'	1.300, 1.610, 1.920
	B	+0°10'40"	1.100, 1.410, 1,720

*

The horizontal angle ACB is $35^{\circ}20'$. Determine the gradient between A and B. $K=100$, $C=0$. RL of A = 130.000m

- 15) Two tangents intersect at a point B of chainage 2160m. The intersection angle being 144° and the radius of curve is 300m. Calculate (i) Tangent length, (ii) Curve length, (iii) Length of long chord, (iv) Chainage at point of curve and (v) Chainage at point of tangency.
- 16) Two tangents intersect at a point B of chainage 1500m. The deflection angle being 30° . Calculate the data for setting out a simple circular curve of radius 300m. Also prepare the table.
- 17) a) Write a short note on GPS (5M)
b) Explain the use of Stereoscope in Photogrammetry. (5M)
- 18) Explain staking out a point, line and an arc using Total station.

* * *

*

*