C16-**C-304**

6225

BOARD DIPLOMA EXAMINATIONS

SEPTEMBER/OCTOBER - 2020

DCE – THIRD SEMESTER

SURVEYING-II

Time: 3 hours Max. Marks: 80

PART – A **3 X 10 = 30**

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

1. Write any 2 described relation between fundamental lines of theodolite?
2. The algebraic sum of latitude and departures of a closed traverse were -1.5m and 0.9m respectively, find the length and direction of closing error.
3. What is meant by face left and face right of theodolite? How do you change of face.
4. Name the instruments used in trigonometrical leveling and state their functions.
5. In order to determine the R.L of the top of a tower the theodolite was set up at a distance of 27m from tits base. The vertical angle measured to the top of the chimney was 22^0. The back sight taken on a nearby B.M. of R.L 132.500m was 0.825m.Determine the R.L of the top of the tower.
6. What is meant by tacheometry? List the instruments needed for Tacheometry?
7. What are the advantages of Tacheometry?
8. Define the following terms
   a) Point of tangency b) Forward Tangent c) Point of intersection
9. List different methods of curve setting by linear methods using chain and tape.
10. State any six components of total station.

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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. Explain briefly the steps involved in Temporary adjustments of a theodolite.

12. a) Define the terms Latitude and Departure.

b) Explain the method of prolonging a straight line with a theodolite.

13. The following observations were made to determine the elevation of top of a chimney 'P'. Find the R.L of the point P.

Instruments at	Sight to	Vertical Angle	Remarks
A	P	26^0 32'	Staff reading on B.M 0.655
B	P	16^0 15'	Staff reading on BM 0.825
			R.L of BM is 137.00
			Distance AC=22.0m

14. A tacheometer was set up at an intermediate station R on the line PQ and the following reading were obtained.

Staff Station	Vertical Angle	Staff Readings		
P	-4^0 33'	0.535	1.620	2.915
Q	$+3^0$ 16'	1.015	1.825	2.830

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

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15. The following observation were made on a vertically held staff with a tacheometer set up at an intermediate point on a straight line PQ.

Staff Station	Vertical Angle	Staff intercept(m)	Axial Hair Reading (m)
P	$-6^0 23'$	2.540	2.225
Q	$-7^0 42'$	1.315	2.530

The instruments was fitted with an anallatic lens and has a constant of 100. Compute the horizontal length PQ and the R.L of Q given that P has a R.L of 235.20m.

16. Two straight intersect at a chainage 1220 m and the angle of intersection is 110^0. If the radius of the simple curve to be introduced is 600m. Find

i)Tangent distance ii) Chainage at point of commecenment

iii) Changing at point of tangency iv) Length of Long Chord

v) Mid ordinate

17. Two tangents intersects at point B of chainage 380.00 m, the deflection angle being 36^0. Calculate all the data necessary for setting out a simple circular curve with radius of 300m by Rankine's method of deflection angle. Take peg interval 30m.

18. Explain resection method using total station.