C14-C-**404**

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BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2018

DCE—FOURTH SEMESTER EXAMINATION

SURVEYING-III

Time : 3 Hours] [*Total Marks* : 80

PART—A 3×10=30

Instruction : (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. State different cases which come under trigonometrical levelling.

2. State the principle of Tacheometry.

3. What is anallactic lens? State the advantages of using anallactic lens in tacheometer.

4. List out the different types of horizontal curves.

5. Define the terms

(*a*) Point of curve

(*b*) Point of Tangency

6. State the principle of EDM equipment.

7. List out the three segments of GPS.

8. State any three uses of Total Station.

9. State any six components of Total Station.

10. Define GIS.

PART—B 10×5=50

Instruction : (1) Answer any **five** questions and each question carries **ten** marks.

(2) Answers should be comprehensive and the criteria for valuation is the content but not the length of the answers.

11. Determine elevation of top of tower (A) from the following observations.

Instrument at	Sight to	Vertical angle	Staff Reading on BM (m)	Remarks
P	A	18°20′	1.650	RL of BM = 150.000m
Q	A	10°40′	1.550	Distance PQ = 20m A, P and Q are in same vertical plane

12. Find the RL of church spire C from the following observations taken from two stations A and B, 50m apart. Angle BAC=60°: Angle ABC=50°: Angle of elevation from A to the top of Spire "C"=30°: angle of elevation from B to Spire "C"=29°; Staff readings taken on BM of RL 20.00m from A & B are 2.500m and 0.490m respectively.

13. (*a*) State any three disadvantages of tangential tacheometry.

(*b*) Two distances of 50m and 300m were accurately measured on a fairly level ground. The intercepts on a vertically held staff were 0.490m and 2.990m respectively. Calculate the tacheometric constants of the instrument.

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

Instrument at	Staff Station	Verticai Angle	Hair Readings
C	A	5°20′	1.750, 2.500, 3.250
	B	3°40′	0.950, 1.350, 1.750

Determine the length of line AB and also RL of B, if RL of A = 500.000m. Multiplying constant =100 and additive constant = 0.

15. (*a*) List out the methods of curve setting in field. 4

(*b*) Calculate the necessary data to set out a circular curve of radius 100m and deflection angle 30° by the method of offsets from long chord (take interval = 5m). 6

16. Two tangents intersect at a point B of chainage 380m. The deflection angle being 36°. Calculate the data for setting out a simple circular curve of radius 300m by Rankine's method of deflection angles with a peg interval of 30m. Also prepare the table if theodolite used was having 20" least count.

17. Explain how traversing is done using Total Station.

18. (*a*) State any five applications of GPS in Civil Engineering.

(*b*) Explain briefly the types of terrestrial photogrammetry.

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