C16-C–304

6225

BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—2023

DCE - THIRD SEMESTER EXAMINATION

SURVEYING—II

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

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List the fundamental lines of a theodolite.

2. Write the functions of a theodolite.

3. Define the terms *(a)* swinging, *(b)* transiting and *(c)* face right.

4. Write any three uses of trigonometric levelling.

5. The angle of elevation to the top of the tower observed from the instrument station with theodolite is 35°30′. The distance between the instrument station and the tower is 200 m. What is the height of the tower?

6. Write the principle of Stadia tacheometry.

7. State the advantages of tacheometric surveying.

8. Derive the expression for degree of curve in terms of radius for a standard chord length of 30 m.

9. Define the terms *(a)* back tangent, *(b)* forward tangent and *(c)* point of tangency.

10. List any three uses of total station.

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain the procedure for measuring horizontal angles by reiteration method.

12. Draw the neat sketch of theodolite and name its component parts.

13. Find the elevation of the top of the chimney from the following data.

Instrument station	Readings on BM	Angles of elevation	Remarks
B	2.485	+15°40′	RL of BM = 145 m
C	1.940	+ 12°20′	Distance BC = 30 m

Stations B and C and the top of chimney are in the same vertical plane.

14. Explain the methods of determining the constants of a tacheometer.

15. A tacheometer with multiplying constant 100 and additive constant 0.30 was set up at a station O and the following results were obtained by keeping the staff vertical. Calculate the horizontal distance between stations O and P and the reduced level of station P.

Station	Staff station	Vertical angle	Hair readings	Remarks
O	BM	+6°00′00″	1.875, 2.150, 2.425	RL of BM
	P	–10°30′00″	1.650.1.800, 1.950	is 152.60 m

16. Calculate the ordinates from the long chord at 10 m interval to set out a simple circular curve of radius 200 m. The length of long chord is 80 m.

17. Explain the method of setting out a circular curve using two theodolite method.

18. Explain the procedure for LS and CS for proposed road using total station.

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