



c09-c-305

**3221**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**OCT/NOV—2017**

**DCE—THIRD SEMESTER EXAMINATION**

**SURVEYING—II**

*Time* : 3 hours ]

[ *Total Marks* : 80

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**PART—A**

3×10=30

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

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

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

1. State the relationship of fundamental lines of a theodolite.

2. State the various methods of traversing with a theodolite.

3. How balancing of a traverse is done by Bowditch method?

4. State the necessity of trigonometric leveling.

5. State the various types of tacheometry.

6. How are the tacheometric constants found in the field?

7. Write a short note on the length of the curve and apex distance.

- \* 8. List out the different angular methods of curve setting.
9. State the basic principle of photogrammetric surveying.
10. State the importance of GPS receivers.

**PART—B**

10×5=50

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

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

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

11. The following are the lengths and bearings of a closed traverse ABCDA. Calculate the length and bearing of the line DA :

<i>Line</i>	<i>Length (in m)</i>	<i>Bearing</i>
AB	76·80	S 39° 48 W
BC	195·60	N 36° 24 W
CD	37·20	N 21° 12 E
DA	?	?

12. The latitude and departure of the lines of a closed traverse are given below. Calculate the area of the traverse by independent coordinate method :

<i>Line</i>	<i>Northing</i>	<i>Southing</i>	<i>Easting</i>	<i>Westing</i>
AB		157·2	154·8	
BC	210·5		52·5	
CD	175·4			98·3
DA		228·7		109·0

- \* 13. The angle of elevation of the top of the tower observed from the instrument station with a theodolite is 30° 45'. The distance between the instrument station and the tower is 200 m. What is the RL of top of the tower, if the BS taken on a nearby BM of RL 145·300 m is 2·875 m?

- \* **14.** The following observations were made on a vertically held staff with a tacheometer set up at an intermediate point on a straight line *CD* :

<i>Staff station</i>	<i>Vertical angle</i>	<i>Staff intercept (m)</i>	<i>Axial hair reading (m)</i>
<i>C</i>	8° 36	2.880	2.505
<i>D</i>	- 8° 36	1.655	2.850

The instrument is fitted with an analytic lens. Calculate the RL of *D* given that of *C* is 527.630 m.

- 15.** Determine the perpendicular offsets at 20 m interval along the tangent to locate a simple circular curve of 250 m. Take deflection angle 40°.
- 16.** Tabulate the data required for setting out a curve by deflection angle method considering the following data :
- Angle of intersection 145°
  - Chainage of point of intersection 1580 m
  - Degree of the curve 5°
  - Least count of the theodolite 20
  - Peg interval 30 m
- 17.** Explain the components of GIS.
- 18.** State the principle and uses of total station.

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