



c09-c-305

**3221**

**BOARD DIPLOMA EXAMINATION, (C-09)  
SEPTEMBER/OCTOBER - 2020  
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. Explain the direct method of prolonging a straight line with a transit theodolite.
2. Define the terms latitude and departure of a survey line.
3. State Bowditch rule and transit rule in theodolite survey.
4. In order to determine the RL of the top of the chimney the theodolite was set up at a distance of 30 m from its base. The vertical angle measured to the top of the chimney was  $25^{\circ} 23'$ . The backsight taken on a near by BM of RL 152.260 was 1.225 m. Determine the RL of the top of the chimney.
5. State the principle of tacheometry.

- \* 6. The staff intercepts at 40 m and 60 m distance were observed to be 0.397 and 0.597 respectively. Calculate the multiplying and additive constants of a tacheometer.
7. Draw a neat sketch of simple curve and name its elements.
8. Define degree of curve and state the relation between radius and degree of curve.
9. Distinguish between plane table photogrammetry and terrestrial stereophotogrammetry.
10. State the three uses of GIS in Civil Engineering.

**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. State the sources of errors of theodolite survey.
12. Explain traversing with theodolite by included angle method with a neat sketch.
13. Find the elevation of the top of the chimney with the data given below :

<i>Inst. at</i>	<i>Reading on BM (in m)</i>	<i>Angle of elevation</i>	<i>Remarks</i>
A	0.860	18° 36'	RL of BM = 421.380 m
B	0.950	10° 12'	Distance AB = 50 m

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

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- 14.** Determine the difference in elevation between the points *A* and *B* from the following observations made with a tacheometer fitted with anallatic lens. The constant of the instrument was 100 and staff was held vertically :

<i>Inst. station</i>	<i>Staff point</i>	<i>WCB</i>	<i>Vertical angle</i>	<i>Staff readings</i>
<i>P</i>	<i>A</i>	320° 40	10° 32	1.360, 1.915, 2.470
	<i>B</i>	50° 40	5° 60	1.065, 1.885, 2.705

- 15.** Describe the method of setting out a circular curve using two theodolites method. (Deflection angles)
- 16.** Determine the offsets to be set out at 10 m interval along the tangents, to locate a 320 m radius curve, by using perpendicular offsets, the length of each chain being 20 m.
- 17.** Explain how the LS and CS of a road are located on the ground using total station.
- 18.** Write short notes on (a) distomat and (b) electronic theodolite.

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