C09-C-305

3221

BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2013

DCE—THIRD SEMESTER EXAMINATION

SURVEYING—II

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

PART—A

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. State any six fundamental lines of theodolite.

2. Define *(a)* transiting and *(b)* swinging.

3. State any three checks on closed traverse.

4. State the principle and necessity of trigonometric leveling.

5. What is annallatic lens? State its advantages in tacheometric survey.

6. What is meant by tacheometry? State its main purpose.

7. Derive an expression for degree of curve in terms of its radius.

8. Two straights *AB* and *BC* are connected by a circular curve of 600 m radius. Calculate the *(a)* tangent length and *(b)* length of curve if the deflection angle is 36°.

9. State the principle of EDM.

10. State the importance of GPS receivers.

PART—B

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. *(a)* Explain briefly prolonging a straight line by double-sighting method.

     (b) What are the different personal errors in theodolite survey?

12. The following are the corrected latitudes and coordinates' departures of a closed traverse *ABCDA*. By assuming the independent coordinates of point *A*(10 5) for North and East respectively, calculate—

(a) the independent coordinates of other stations;

(b) the area of the traverse.

Line	Corrected Latitude		Coordinates' Departure	
	N	S	E	W
AB	9·853		1·722	
BC	2·137		10·164	
CD		11·939	1·133	
DA		0·051		13·019

13. In order to determine the RL of church spire *P*, observations were taken from two stations *A* and *B* 60 m apart, *BAP* 60 and *ABP* 50 . Angle of elevation to *P* from *A* is 23 30 . The staff reading taken on a BM of RL 250·00 when the line of sight was horizontal and instrument was 2·350 m. Determine RL of *P*.

14. 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 vertically. Calculate the reduced level of station *P* :

Instrument Station	Staff Station	Hair Readings	Vertical Angle	Remarks
O	BM	1·875 2·150 2·425	6 00	RL
	P	1·650 1·800 1·950	10 30	BM = 152·00 m

15. Determine the *(a)* radial offsets and *(b)* perpendicular offsets to be set out at 10 m internal along the tangents to locate a 320 m radius curve and the length of each chain being 20 m.

16. Calculate the necessary data to set out a right-handed circular curve of 600 m radius to connect two straights intersecting at a chainage of 3605 m by Rankine's method of deflection angles, the angle of deflection being 25° and peg interval 30 m.

17. *(a)* State any five uses of total station.

   (b) State any five applications of GIS in Civil Engg.

18. *(a)* State the uses of photogrammetry.

   (b) Write short notes on platforms and sensors in remote sensing.

★ ★ ★