3221

BOARD DIPLOMA EXAMINATION, (C–09)
OCT/NOV—2016
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 sources of errors in theodolite surveying.   3

2. List the fundamental lines of a theodolite.   3

3. List the cases of omitted measurements in theodolite traversing.   3

4. State the purpose of conducting trigonometric levelling.   3

5. A staff was held vertically at distances of 40 m and 60 m from the centre of a theodolite fitted with stadia hairs and the staff intercepts with the telescope horizontal were 0·397 m and 0·597 m respectively. Calculate the multiplying and additive constants of the tacheometer.   3

6. State the objective of tacheometry.   3

7. If the tangents to a circular curve having 300 m radius intersect at an angle of 145° and the chainage of point of intersection is 1094·59 m, calculate the chainage of point of commencement of the curve.   3

8. Define *(a)* intersection angle and *(b)* length of curve. 3

9. Define photogrammetry. 3

10. State any three uses of total station. 3

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. Explain the steps involved in carrying out temporary adjustments of a theodolite. 10

12. The following are the corrected latitudes and departures of a closed traverse : 5+5

Line	Corrected coordinates (in m)			
	Latitude		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

By assuming the independent coordinates of a point *A* (+10, +5) for the North and East respectively, calculate the independent coordinates of other stations and find the area of the traverse.

13. The following observations were made whole determining the elevation of a hill top *A* :

Instrument at	Sight to	Vertical angle	Remarks
B	A	25 23	Staff reading on BM = 1·350 m
C	A	16 40	Staff reading on BM = 1·225 m RL of BM = 152·260 m Horizontal distance between *B* and *C* = 30 m

If *A*, *B* and *C* are in the same vertical plane, find the reduced level of *A*. 10

14. In the absense of stadia diaphragm, tangential observations were made to a staff held vertically on a point *P*. The vertical angles corresponding to staff readings 1·250 m and 2·375 m were 2 34 and 3 12 respectively. If the RL of the plane of collimation is 122·260 m, determine—

(a) horizontal distance of *P* from the instrument station;

(b) reduced level of *P*.   5+5

15. Two tangents, *AB* and *BC*, intersect at a point *B* at chainage of 200 m. Calculate the all necessary data for setting out a circular curve of radius 100 m and deflection angle 30° by the method of offsets from the long chord.   10

16. Explain the method of setting a simple curve by (a) offsets from the long chord and (b) successive bisection of arcs.   5+5

17. (a) List any five applications of GPS.   5

(b) List any five applications of GIS.   5

18. (a) Define remote sensing and state the function of sensors in remote sensing.   4

(b) State the principle of EDM.   3

(c) State the types of photogrammetry.   3

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