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C16–C–306

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DCE—THIRD SEMESTER EXAMINATION

SURVEYING—III

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. Define *(a)* contour and *(b)* contour interval.

2. Define *(a)* transiting and *(b)* telescope inverted.

3. List the fundamental lines of a transit theodolite.

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°23 . The back sight taken on a nearby BM of RL 152·260 was 1·225 m. Determine the RL of the top of the chimney.

5. The stadia readings with horizontal sight on a vertical staff held 50 m away from a techeometer were 1·284 and 1·780 m. The focal length of object glass was 25 cm. The distance between the object

glass and turning axis of the tacheometer was 15 cm. Calculate the stadia intercept.

6. List different methods of curve setting in the field.

7. If the radius of curve is 300 m, calculate the degree of curve for standard chord length 30 m.

8. Write the principle of an EDM equipment.

9. State the components of GIS.

10. List the types of photogrammetry.

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. *(a)* State any five uses of a countour map.

(b) State any five characteristics of contour.

12. The following are the corrected latitudes and depature of the survey lines of a traverse *ABCD* are as follows :

Line	*Length* (in m)	*Departure* (in m)
AB	+204·60	+113·90
BC	–234·90	+205·80
CD	–150·70	–86·00
DA	+181·00	–233·70

Assume independent coordinates of the most westerly station *A* is to be (+200, +100). Calculate its area by independent co-ordinates method.

13. A closed traverse was conducted round an obstacle and the following observation were made, work out the missing quantities :

Line	*Length* (in m)	*Bearing*
AB	500	98°30
BC	620	30°20
CD	468	298°30
DE	?	230°00
EA	?	150°10

14. Find the elevation of the top of the church spire *A* from the following data :

Instrument at	*Sight to*	*Vertical angle*	*Remarks*
A	*A*	+25°23	Staff reading on BM = 1·35 m
C	*A*	+16°40	Staff reading on BM = 1·225 m

RL of BM = 152·260, BC = 30 m

The stations *A*, *B*, *C* are in the same vertical line.

15. A tacheometer was set up at station *A* and the following readings were obtained on a vertically held staff :

Station	*Staff station*	*Vertical angle*	*Hair readings*	*Remarks*
A	BM	–2°18	3·225, 3·550, 3·875	RL of BM = 437·655 m
A	B	+8°36	1·650, 2·515, 3·380	

Calculate the horizontal distance from *A* to *B* and the RL of *B* if the constants of the insturment were 100 and 0·4 m.

16. If the tangents to a circular curve having 500 m radius intersect at an angle is 120° and the chainage of point of intersection is 1520·50 m, calculate the—

(a) tangent distance;

(b) degree of curve;

(c) length of long chord;

(d) length of curve.

17. Determine the offsets from the tangents at intervals of 20 m to locate 400 m radius circular curve by *(a)* radial offsets and *(b)* perpendicular offsets. Take, deflection angle = 30°.

18. Write short notes on the following :

(a) GPS

(b) Distomat

(c) Photogrammetry

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