C14–C–304

4228

BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2017
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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the following :　　　　　　　　1+1+1=3

(a) Levelling

(b) Foresight

(c) Backsight

2. Define benchmark. List the types of benchmark.　　　3

3. Define the following terms :　　　　　　　1+1+1=3

(a) Change point

(b) Line of collimation

(c) Reduced level

4. List any three types of levelling staffs. 3

5. If a levelling staff is placed at a distance of 800 m from the instrument, find—

(a) correction for curvature;

(b) correction for refraction. 1½+1½=3

6. Define contour and contour gradient. 3

7. What is meant by face left and face right of theodolite? 3

8. List the fundamental lines of transit theodolite. 3

9. Define the following terms : 1½+1½=3

(a) Changing face

(b) Telescope inverted

10. State any four important parts in a transit theodolite and mention their functions. 3

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PART—B 10×5=50

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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 readings were observed successfully on a continuous sloping ground :

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0·605, 1·105, 1·895, 2·300, 0·950, 1·340,
1·975, 0·760, 1·785, 0·905 and 1·235

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The RL of first point was 120·650 m. Find the RL of other stations by using rise and fall method and apply arithmetical checks. 10

12. *(a)* What are the sources of errors in levelling? 5

(b) Compare the collimation method with rise and fall method. 5

13. The following details refer to reciprocal levels taken with a dumpy level :

| Instrument at | Staff readings on | | Remarks |
	A	B	
A	1·505	2·875	Distance between *A* and *B* = 1150 m
B	0·750	1·895	RL of *B* = 100·000 m

Find *(a)* the RL of *A*, *(b)* the combined error for curvature and refraction and *(c)* the collimation error in the instrument. 10

14. A page of an old level book was required to be consisted but found to be damaged. Find out the missing readings marked with a cross and complete the level book page : 10

Station	BS	IS	FS	HI	RL	Remarks
1	3·400			×	×	BM
2		×			192·00	
3	3·900		2·550	×	×	Change point
4		3·400			191·300	
5		×			197·000	Staff inverted
6			×		192·300	Last point

15. What is meant by interpolation of contours? What are the various methods of interpolating contours? Explain briefly. 10

16. Explain the procedure of measurement of horizontal angle by reiteration method. 10

17. The following are the corrected latitudes and departures of a closed traverse *ABCD*. By assuming the independent coordinates of a point *A* (+100, +100) for North and East respectively, calculate—

(a) independent coordinates of other stations;

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(b) find the area of the traverse. 10

Line	Latitude		Departure	
	N	S	E	W
AB	108	—	04	—
BC	15	—	249	—
CD	—	123	04	—
DA	00	—	—	257

18. The table below gives the lengths and bearings of the lines of a traverse *ABCDE,* the length and bearings of *EA* having omitted. Calculate the length and bearing of *EA* : 10

Line	Length in M	Bearing
AB	204·00	87°30
BC	226·00	20°20
CD	187·00	280°00
DE	192·00	210°30
EA	?	?

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