



C14-C-304

4228

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—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.

1. List any six component parts of dumpy level. ½×6=3
2. Define the following : 1½×2=3
 - (a) Change point
 - (b) Vertical axis
3. Define BM. List different types of benchmark. 1+2=3
4. List the permanent adjustments of dumpy level. 1½×2=3
5. List different errors occur in dumpy levelling. 3
6. Give any three characteristics of contour. 3
7. Define the following : 1½×2=3
 - (a) Changing the face
 - (b) Line of collimation
8. List various fundamental lines in transit theodolite. 3

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9. List any three ^{*} instrumental errors in transit theodolite surveying. 3
10. List different types of transit theodolite and write any four uses of them. 1+2=3

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

11. (a) List any four points that should be observed while booking readings. 4
- (b) Find the RLS of various points *B* to *F* by rise and fall method and also do the arithmetic checks, if the RL of point *A* = 100.000 m and staff readings from *A* to *F* are 0.385, 0.58, 0.76, 0.97, 1.24 and 1.44. 6
12. (a) Derive expressions for curvature errors, refraction errors and combined corrections. 6
- (b) The observer at a height of 30 m above mean sea level just sees horizontal objects on the top of a hill. The distance between the observer station and the top of the hill is 90 km. What is the height of the hill? 4
13. (a) List the errors that can be eliminated in reciprocal levelling. 2
- (b) The following reciprocal levels were taken with a dumpy level :

Instrument at	Staff reading at		Remarks
	A	B	
A	1.156	2.597	Distance AB = 1200 m
B	0.987	5.418	RL of A = 625.555 m

Find (a) the true level between *A* and *B*, (b) RL of *B*, (c) the combined correction for curvature and refraction, and (d) the error in collimation adjustment of level. 8

14. List different adjustments in levelling. Explain briefly the temporary adjustments. 2+8=10

15. What is meant by 'interpolation of contours'? List different methods. Explain graphical method. 2+3+5=10

16. Explain the measurement of a vertical angle and give the proforma. 8+2=10

17. (a) List the types of omitted measurement of a closed traverse. 2

(b) The following are the lengths and bearings of the sides of a closed traverse *ABCDEA* :

<i>Line</i>	<i>Length</i>	<i>Bearing</i>
<i>AB</i>	730.00	S 60°00 E
<i>CD</i>	1245.27	N 37°42 W
<i>DE</i>	940.00	S 55°24 W
<i>EA</i>	575.00	S 02°42 W

Compute the length and bearing of side *BC*. 8

18. (a) Explain any one method of prolonging a straight line using theodolite. 6

(b) Give formulas for the adjustment of a traverse by (a) Bowditch's rule and (b) transit rule. 4
