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C14-C-304

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**BOARD DIPLOMA EXAMINATION, (C-14)  
OCTOBER/NOVEMBER-2018  
DCE – THIRD SEMESTER EXAMINATION**

**SURVEYING – II**

*Time : 3 Hours ]*

[ Total Marks: 80

**PART-A**

3X10=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 (a) Backsight (b) Foresight (c) Change point.
2. What are fundamental lines of a dumpy level?
3. What is benchmark? List any two types of benchmarks.
4. State any three natural sources of errors in leveling.
5. An observer standing on the bridge of a ship just sees the mast of another ship. If the height of the observers eye above sea level is 38m and that of the mast of the other ship is 48m, what is the distance between the two ships?
6. State any three uses of contours.
7. Define (a) Latitude (b) Departure.
8. Define (a) Face left observation (b) Face right observation (c) Transiting.
9. State any three instrumental errors in Theodolite Surveying.
10. What is closing in a traverse and list out the rules for balancing closed errors?

## PART-B

10X5=50

**Instructions** :

1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. Explain the temporary adjustments of leveling with neat diagrams.
12. The following readings were observed successfully with a level. The instrument was shifted after 5<sup>th</sup> and 11<sup>th</sup> readings 0.585, 1.010, 1.735, 3.295, 3.775, 0.350, 1.300, 1.795, 2.575, 3.375, 3.895, 1.735, 0.635, 1.605. Determine the R.L. of various points if the R.L of the point on which the first reading was taken is 136.440. Use rise and fall method.
13. The following consecutive readings were taken with a dumpy level and a 4m leveling staff continuously sloping ground at 30m interval. 0.680, 1.455, 1.855, 2.330, 2.885, 3.380, 1.055, 1.860, 2.265, 3.540, 0.835, 0.945, 1.530, 2.250. The reduce level of the starting point was 80.750.
  - a) Carryout reductions of heights by collimation method.
  - b) Apply the arithmetic check.
  - c) Determine the gradient of the line joining first and last point.
14. Explain the characteristics of contours with neat sketches.
15. The area within the contour lines at the site of the reservoir and the face of the proposed dam are follows:

Contour (m)	350	352	354	356	358	360	362
Area (m <sup>2</sup> )	300	10,500	76,000	1,45,000	2,70,000	4,15,000	4,70,000

Taking 350 as bottom level of reservoir and 362 as the F.R.L. Find the volume of water in the reservoir in cubic meters using

- (a) Trapezoidal rule
- (b) Prismoidal rule.

16. Name the parts of a transit theodolite with a neat diagram.
17. The following are the lengths and bearings of the sides of a closed traverse PQRSP. The length and bearing of the line SP is missing

Line	Length (m)	Bearings
PQ	70.80	$140^{\circ} - 15'$
QR	195.90	$36^{\circ} - 25'$
RS	35.20	$338^{\circ} - 45'$

Compute the length and bearing of the line SP.

18. The following are the corrected latitudes and corrected departures of a closed traverse ABCDA. By assuming the independent coordinates of point A (+10, +05). For north and east respectively. Calculate

(a) Independent co-ordinates of other station.

(b) Find the area of the traverse

Line	Corrected co-ordinates			
	Length (m)		Departures	
	N	S	E	W
AB	9.853		1.722	
BC	2.137		10.164	
CD		11.939	1.133	
DA		0.051		13.019

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