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**4228****BOARD DIPLOMA EXAMINATION, (C-14)****MARCH /APRIL-2019****DCE - THIRD SEMESTER EXAMINATION****SURVEYING-II**

Time: 3 Hours

Max.Marks:80

**PART-A****10x3=30M****Instructions:** 1) Answer **all** questions. Each question carries **3** marks.2) Answer should be brief and straight to the point and shall not exceed **five** simple sentences.

- 1) List six component parts of a dumpy level.
- 2) Define (a) Level surface (b) Datum (c) Line of collimation.
- 3) List any three types of bench marks.
- 4) State the circumstances where reciprocal levelling is used.
- 5) Define (a) Contour interval (b) Contour gradient.
- 6) Calculate the correction for curvature and refraction in a length of 1500m.
- 7) What is meant by Face left and Face right observation of a theodolite.
- 8) Define (a) Latitude (b) Departure.
- 9) State any three errors that can be eliminated by method of repetition.
- 10) List three methods of traversing using theodolite.

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## PART-B

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**5x10=50M**

**Instructions:** 1) Answer any **five** questions. Each question carries **10** marks.

2) The answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11) a) Compare between Height of Instrument method and Rise and Fall method.

b) Explain briefly (i) Fly levelling (ii) Check levelling

12) While carrying out levelling operation with a dumpy level and 4m levelling staff the following observations were recorded 0.865, 1.430, 0.315, 2.430, 1.815, 3.260, 1.750, 2.105 and 1,380. The levelling instrument was shifted after 4<sup>th</sup> and 7<sup>th</sup> readings. The first reading was on a BM of RL 100.000m. Rule out a page of levelling field book and enter above readings in correct form and compute the reduced levels by Height of Instrument method. Apply check.

13) A page of a level field book partly defaced is reproduced below. Find the missing entries marked with cross.

Station	BS	IS	FS	Rise	Fall	RL	Remarks
1	1.200					100.000	BM
2		X			0.650	X	CP1
3	1.350		1.565	X		X	
4		X		0.085		X	
5	X		X		X	X	CP2
6		X		X		100.240	
7			2.500		1.09	99.150	
<b>Total</b>	<b>4.415</b>			1.075			

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14. a) State the equipment required for carrying out levelling.  
 b) The following readings were taken using dumpy level in reciprocal levelling.

	Staff at A	Staff at B
Level near A	3.195	2.685
Level near B	2.840	2.105

If RL of station A = 30.480m find the RL of B

15. a) State four uses of contour maps.  
 b) What do you understand by interpolation of contours? What are the various methods of interpolating contours, explain any one in detail.
- 16) a) Explain the procedure of measuring horizontal angle by method of repetition.  
 b) State any four instrumental errors in theodolite.
- 17) a) Explain deflection angles method of traversing.  
 b) Explain Bowditch's rule of adjusting closing error.
- 18) The following table gives the length and bearings of the four lines of a closed theodolite traverse ABCDE. Determine the length and bearing of the fifth line EA.

Line	Length (m)	Bearing
AB	194.1	85° 30'
BC	201.1	15° 00'
CB	165.4	285° 30'
DE	172.6	195° 3'

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