

**6021**  
**BOARD DIPLOMA EXAMINATION**  
**MARCH/APRIL - 2019**  
 \* **DIPLOMA IN CIVIL ENGINEERING**  
**SURVEYING - I**  
**FIRST YEAR EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. State various methods of measuring distances
2. Distinguish between the direct method and indirect method of chaining on sloping ground
3. Draw the conventional symbols for the following  
 a) Double Railway line    b) Metal road    c) Level crossing
4. Define closed traverse and open traverse in compass survey
5. Find the angle between the lines AB and AC if their respective bearings are  
 a)  $AB = N 76^{\circ}38'E$  &  $AC = S 53^{\circ}12'E$     b)  $AB = S 36^{\circ}12'W$  &  $AC = N 69^{\circ}48'W$
6. How do you carryout alignment of canals with the help of contour maps.
7. Define profile levelling with a neat sketch
8. Compare the line of collimation method with rise and fall method in levelling
- \* 9. Explain the procedure of elimination of parallax
10. Write short notes on Abney Level

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. Explain with a neat sketch of a line ranger, how it is used in alignment of a line.
12. Describe the types of obstacles in chain surveying by giving examples with neat sketches.

13. The following bearings were taken in a closed traverse ABCDEA. Calculate the interior angles of the traverse and apply usual check.

Line	Fore Bearing	Back Bearing
AB	N 72°45' W	S 72°45' E
BC	S 22°00' W	N 22°00' E
CD	S 78°30' E	N 78°30' W
DE	N 9°15' E	S 9°15' W
EA	N 55°15' W	S 55°15' E

14. . Distinguish between chain surveying and compass surveying
15. The following notes refer to reciprocal levels taken with a level. Find
- True difference elevation between A and B and
  - R.L of B.

Instrument at	Staff reading on		Remarks
	A	B	
A	1.155	2.595	Distance AB=500m, R.L of A is 525.500
B	0.985	2.415	

16. Explain with the aid of a neat sketch the constructional details of a dumpy level
17. a) What is a working profile? Sketch a typical one.  
b) Describe the field work to be done for profile levelling.
- 18A. Explain the classification of surveys based on the instruments used in detail
- B. Describe the method of determining the area of the plan by using electronic planimeter?

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