



c14-c-106

**4020**

**BOARD DIPLOMA EXAMINATION, (C-14)**

**MARCH/APRIL—2016**

**DCE—FIRST YEAR EXAMINATION**

**SURVEYING—I**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

3×10=30

**Instructions :** (1) Answer **all** questions.

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

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State any three purposes of conducting surveying.
2. List any three instruments used for taking linear and angular measurements. 1½+1½
3. Briefly describe the principle of chain surveying.
4. Write any three situations under which the chain surveying is unsuitable.
5. The distance between two points measured with a 20 m chain was recorded as 327 m. It was afterwards found that the chain was 3 cm too long. What was the true distance between the points?
6. What is the purpose of running check lines and tie lines in chain surveying?

/4020

1

[ *Contd...*

[WWW.MANARESULTS.CO.IN](http://WWW.MANARESULTS.CO.IN)

7. Differentiate between (a) true meridian and magnetic meridian and (b) true bearing and magnetic bearing. 1½+1½
8. Compute the back bearings from the given fore bearings :
- (a) S 79° 04 E
- (b) N 88° 12 W
- (c) N 28° 12 E
9. Distinguish between closed traverse and open traverse in compass surveying.
10. State the uses of any three minor instruments used in surveying.

**PART—B**

10×5=50

**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. (a) Explain the general classification of land surveying. 7  
 (b) Write the three types of engineering surveys carried out in connection with Civil Engineering works. 3
12. (a) What are the duties of the leader in chain surveying? 2  
 (b) Explain the method of reciprocal ranging with a neat sketch. 8
13. The following perpendicular offsets were taken from a chain line to a hedge :

<i>Chainage</i> (in m)	0	15	30	45	60	70	80	100	120	140
<i>Offset</i> (in m)	7·60	8·50	10·70	12·80	10·60	9·50	8·30	7·00	6·40	4·40

Calculate the area between survey line and the hedge, and the end offsets by (a) Trapezoidal rule and (b) Simpson's rule. 10

14. (a) List the <sup>\*</sup>obstacles in chain surveying. 2

(b) A 30 m chain was tested before the commencement of the days work and found 5 cm too long. After chaining a distance of 1600 m it was checked again and found to be 10 cm too long. At the end of days work after chaining 3000 m the chain was found to be 18 cm too long. Find the true distance measured. 8

15. (a) Define local attraction. How is it detected? 2

(b) Define closing error in a compass traverse. Explain how it is adjusted using graphical method. (Bowditch rule) 8

16. The following fore and back bearings were observed with a compass. Where do you suspect the local attraction? Find the corrected bearings : 10

<i>Line</i>	<i>Fore Bearing</i>	<i>Back Bearing</i>
<i>AB</i>	44 15	222 30
<i>BC</i>	105 30	286 45
<i>CD</i>	194	14
<i>DE</i>	255 45	76
<i>EA</i>	304	124 15

17. The bearings of the sides of a traverse *ABCDEA* are given below. Sketch and compute the interior angles of the traverse and apply usual checks : 10

<i>Line</i>	<i>Fore Bearing</i>	<i>Back Bearing</i>
<i>AB</i>	110 15	290 15
<i>BC</i>	35 30	215 15
<i>CD</i>	276 30	96 30
<i>DE</i>	195 30	15 30
<i>EA</i>	132 15	312 15

18. (a) Explain how you can measure the vertical angle using Abney level. 6

(b) List any eight applications of electronic planimeter. 4

\*\*\*