



c14-c-106

**4020**

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

**OCT/NOV—2017**

**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. Define surveying and state its fundamental principle.
2. State different types of taxes.
3. State the uses of (a) arrow, (b) ranging rod and (c) plumb bob.
4. Define (a) base line, (b) check line and (c) tie line.
5. Define an offset and state the types of offsets.
6. The length of a line measured with a 20 m chain was found to be 196·10 m. Calculate the true length of the line if the chain was 0·2 m too short.
7. Define (a) true bearing, (b) magnetic bearing and (c) dip.

- \* 8. Convert the following reduced bearings to whole circle bearings :
- (a) N 45°15 W
- (a) S 15°45 E
- (a) N 27°36 E
9. Find the back bearing of the lines whose forebearings are (a) AB 215°45, (b) PQ 109°35 and (c) RS N 18°36 W.
10. State three uses of abney level.

**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) Distinguish between plain surveying and geodetic surveying.  
 (b) State five important rules in making field notes in surveying.
12. Define ranging and explain the method of reciprocal ranging with a sketch.
13. The following perpendicular offsets were taken from a chain from a chain line to a hedge :

Distance (m)	0	6	12	18	24	30	36
Offsets (m)	5.40	4.50	3.60	2.70	1.80	2.25	3.15

Calculate the area enclosed between the chain line and offsets by using—

- (a) Trapezoidal rule;  
 (b) Simpson's rule.

\* **14.** Explain the methods of overcoming obstacles when both vision and chaining are obstructed.

**15.** The following bearings were observed while traversing with a compass :

<i>Line</i>	<i>AB</i>	<i>BC</i>	<i>CD</i>	<i>DE</i>	<i>EA</i>
<i>Forebearing</i>	135°0	60°30	5°30	294°30	220°00

Calculate the interior angles and apply check.

**16.** The following bearings were observed while traversing with a compass :

<i>Line</i>	<i>AB</i>	<i>BC</i>	<i>CD</i>	<i>DE</i>	<i>EA</i>
<i>Forebearing</i>	72°45	349°0	298°30	229°0	135°30
<i>Back Bearing</i>	252°0	167°15	118°30	48°0	319°0

Mention which stations were affected by local attraction and find the corrected bearings.

**17.** Explain the operations involved in field in compass surveying.

**18.** Explain the uses and working principles of pantograph.

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