



c09-c-105

**3015**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**MARCH/APRIL—2018**

**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. Write two fundamental principles of surveying.
2. List the precautions to be taken while entering the field book.
3. Draw the conventional symbols for the following :
  - (a) Double railway line
  - (b) Metal road
  - (c) Level crossing
4. List different types of cross-staff.
5. Find the angle between the lines *AB* and *BC* if their respective bearings are
  - (i) *AB* = N 76° 38 E and *AC* = S 53° 12 E
  - (ii) *AB* = S 36° 12 W and *AC* = N 69° 48 W
6. Define local attraction and state the methods for elimination of local attraction.

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7. Define <sup>\*</sup> (a) line of collimation, (b) axis of telescope and (c) vertical axis.
8. If a levelling staff is placed at a distance of 800 m from the instrument, find—  
 (a) correction for curvature ( $C_c$ );  
 (b) correction for refraction ( $C_r$ ).
9. From an instrument a back sight on a vertical staff held on a BM was observed to be 2.300 m and the foresight was 3.315 m on a point  $B$ . The RL and BM was 250.750, find the RL of point  $B$ .
10. Name any three types of minor instrument and their uses.

**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 chain line  $AB$  is obstructed by a big pond and the point  $A$  and  $B$  are on either side of pond. At  $A$ , a line  $CAD$  was ranged out. The distance  $AD = 320$  m,  $AC = 280$  m,  $DB = 530$  m and  $CB = 485$  m are measured. Find the distance  $AB$ .
12. (a) Write briefly about a metric chain.  
 (b) Explain the construction and operation of optical square with the help of neat sketch.
13. (a) Distinguish between closed and open traverses.  
 (b) Name any five component parts of prismatic compass giving their functions.
14. Define magnetic declination and explain the different variations in declination.
15. (a) What is a profile levelling? Sketch a typical one.  
 (b) Describe the fieldwork to be done for profile levelling.

- 16.** Define <sup>\*</sup> contour gradient and explain the procedure of finding contour gradient.
- 17.** Draw the sketch of dumpy level and mention its parts.
- 18.** Explain the working principle of electronic planimeter with neat sketch.

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