



c09-c-105

3015

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—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. Name the instruments used for taking linear and angular measurements in surveying.
2. What are well-conditioned triangle and ill-conditioned triangle in chain surveying?
3. State the functions of arrows, offset rod and chain.
4. What do you mean by the indirect method of chaining on a sloping ground?
5. Define closed traverse and open traverse in compass survey.

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6. Convert the following reduced bearing into whole circle bearing :
- (a) N 55° 30' E
 - (b) N 70° 45' W
 - (c) S 30° 30' E
7. Define the following terms :
- (a) Reduced level
 - (b) Line of collimation
 - (c) Axis of telescope
8. Write briefly about interpolation of contours.
9. Explain curvature correction and refraction correction in levelling.
10. Write a short note on 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. The following offsets were taken at 5 m intervals from a survey line to a curved boundary :

2.10 m, 3.15 m, 3.60 m, 4.58 m,

7.85 m, 6.45 m, 4.65 m, 3.14 m

Compute the area between the survey line, irregular boundary, first and last offsets by (a) trapezoidal rule and (b) Simpson's rule.

12. What are the precautions to be taken while entering the measurements and details in chain field book?
13. A closed compass traverse $ABCD$ was conducted and the following bearings were obtained :

<i>Line</i>	<i>Fore bearing</i>	<i>Back bearing</i>
AB	42 30	222 30
BC	122 50	302 50
CD	182 10	2 10
DA	323 50	143 50

Calculate the interior angles of the traverse and apply check.

14. The following table gives fore bearing and back bearing of sides of a closed compass traverse :

<i>Line</i>	<i>Fore bearing</i>	<i>Back bearing</i>
AB	N 55 00 E	S 54 00 W
BC	S 67 30 E	N 66 00 W
CD	S 25 00 W	N 25 00 E
DE	S 77 00 W	N 75 30 E
EA	N 64 30 W	S 63 30 E

Where do you suspect the local attraction? Find the correct bearings.

15. The following notes refer to reciprocal levels taken with a level :

<i>Instrument at</i>	<i>Staff reading on</i>		<i>Remarks</i>
	<i>A</i>	<i>B</i>	
A	1.155	2.595	Distance AB 500 m
B	0.985	2.415	RL of A 525.500

Find the (a) true difference in elevation between A and B and (b) RL of B .

16. (a) How to align the roads with the help of contour maps? 5
(b) Explain with a neat sketch, the method of grid contour. 5
17. (a) Explain the fundamental lines of dumpy level. 5
(b) State the relations between the fundamental lines. 5
18. Describe the method of determining the area of the plan by using electronic planimeter.
