



c09-c-105

3015

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2014

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. Explain the two fundamental principles of surveying.
2. What is ranging? Explain indirect ranging.
3. What is optical square? How to set up right angles using optical square?
4. List any four essential instruments used for compass surveying.
5. The bearings of the lines are as follows. Find the included angles between them.

Line *AB*, bearing 60 30 , line *BC*, bearing 310 00

6. What are fundamental lines of a levelling instrument?
7. What is Bench mark? Mention any four types of Bench mark.
8. Mention any four types of instrumental error in levelling.

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9. Mention types of obstacle in chain surveying.

10. List any four important component parts of a electronic planimeter.

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) A 20 m chain used for survey was found to be 20 20 m at the beginning and 20 35 at the end of work. The areas of the plan drawn to a scale 1 cm = 8 m, was measured with the help of a planimeter and was found to be 33 50 cm². Find the true area of the field.

(b) Plot and find the area for the following cross staff survey report :

	△	
	100	D
E 45	80	
	60	30 C
F 30	40	
	20	25 B
	0	
	△	
	A	

12. (a) What are the different errors in chain survey? Explain them in detail.

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(b) Explain the following with a neat sketch :

- (i) Base line
- (ii) Check line
- (iii) Tie line

13. (a) Write any six errors due to prismatic compass.

(b) The following bearings were observed with a compass. Calculate the interior angles of the traverse *ABCDE*. Apply suitable check.

<i>Line</i>	<i>FB</i>	<i>BB</i>
<i>AB</i>	60 30	240 30
<i>BC</i>	124 00	304 00
<i>CD</i>	42 00	222 00
<i>DE</i>	185 30	5 30
<i>EA</i>	305 45	125 45

14. (a) To find the width of river, two points *P* and *Q* are fixed along a bank parallel to the river at 350 m apart. The bearings of a pole *R* on the other bank of river as observed from *P* and *Q* are 35° and 302° respectively. Determine the width of the river.

(b) What is local attraction? Explain the methods of correcting the bearing affected by local attraction.

15. (a) Compare between height of collimation method with rise and fall method.

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(b) The following staff readings were observed successively with dumpy level, the instrument is moved after third and sixth readings 1.735, 1.705, 2.080, 1.30, 0.895, 2.10, 2.45 and 2.105. Enter the above readings in a page of level book and calculate the RL of points by the rise and fall method. The first reading was held on BM 50.00. Apply usual checks.

- * **16.** A page in level book is shown in the table given below. Fill the missing data and apply usual checks :

<i>Station</i>	<i>BS</i>	<i>IS</i>	<i>FS</i>	<i>Rise</i>	<i>Fall</i>	<i>RL</i>	<i>Remarks</i>
1	2.05					120.0	BM
2	1.73		?	0.70			
3		2.45			?		
4	?		1.87	?			
5	2.00		1.63		0.50		
6		?		?		122.00	
7	- 1.30		?	0.20			
8	2.65		2.00				BM
9			?	?		119.80	

Calculate the reduced levels also.

- 17.** (a) Explain the following :
- Check levelling
 - Fly leveling
- (b) The following consecutive readings were taken with a dumpy level. The instrument was shifts after 4th and 7th readings. The first reading was taken on BM of 150.0. Enter the readings in the leveling book and calculate the reduced levels by height of instrument method. Apply usual checks.
0.55, 0.90, 1.35, 0.45, 2.10, 2.75, 1.20, 2.10, 2.80 and 0.90
- 18.** (a) Describe the method of using planimeter for determining the area of given place.
- (b) List any four uses of Abney level.
