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.

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 :

Line	Fore bearing	Back bearing
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 :

Line	Fore bearing	Back bearing
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 :

Instrument at	Staff reading on		Remarks
	A	B	
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.

★ ★ ★