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C16-C-105

6021

BOARD DIPLOMA EXAMINATION, (C-16)

JANUARY/FEBRUARY—2022

DCE - FIRST YEAR EXAMINATION

SURVEYING - I

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

- 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. State the principle of surveying. 3
2. Define (a) base line and (b) check line.  $1\frac{1}{2} \times 2 = 3$
3. Draw the conventional signs for (a) chain line, (b) culvert and (c) bench mark.  $1 \times 3 = 3$
4. State the purpose of compass survey. 3
5. Convert the following quadrantal bearings into whole circle bearing :  
(a)  $N56^{\circ}00'E$   
(b)  $S83^{\circ}15'W$   $1\frac{1}{2} \times 2 = 3$
6. Define (a) line of collimation and (b) turning point.  $1\frac{1}{2} \times 2 = 3$
7. List the fundamental lines of dumpy level.  $1\frac{1}{2} \times 2 = 3$

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8. A lamp at the top of a light house is visible just above the horizon from a station at a sea level. The distance of the lamp from the station is 32 km. Find the height of the light house. 3
9. State any three uses of a contour map.  $1\frac{1}{2}\times 2=3$
10. List any three minor instruments.  $1\frac{1}{2}\times 2=3$

**PART—B**

$10\times 5=50$

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain the indirect method to measure the distance on sloping ground. 10
12. Calculate the area of the plot for the following entries made in the filed book of cross staff survey. 10

	92	$\Delta H$
27 G	79	
	68	28 D
20 F	57	
	47	19 C
20 E	36	
	26	11 B
	0	$\Delta A$

13. (a) Draw the sketch of a prismatic compass. 4
- (b) Explain the various parts of a prismatic compass. 6

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- 14.** The following are the observed bearings of the lines of a traverse taken with a compass in a place where the local attraction was suspected. Determine the corrected bearings of the lines. 10

Line	Fore bearing	Back bearing
AB	70°00'	250°00'
BC	120°00'	298°30'
CD	178°15'	358°15'
DE	290°00'	111°30'

- 15.** Explain the temporary adjustments of a levelling instrument. 10

- 16.** (a) State the purpose of reciprocal levelling. 3

- (b) In levelling across a river two points A and B were fixed on opposite banks. The observed readings were tabulated below. Find the reduced level of B. 7

Level near	Staff at A	Staff at B	Remarks
A	3.285	2.825	RL of A = 99.485 m
B	2.780	2.210	

- 17.** Describe the characteristics of contours. 10

- 18.** (a) List the names of the surveys classified based upon the object of survey. 5

- (b) State the uses of an Abney level. 5

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