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C16-C-105**6021****BOARD DIPLOMA EXAMINATION, (C-16)****OCTOBER/NOVEMBER—2023****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. Differentiate between plan and map.
2. Define offset and mention the types of offset.
3. Define (a) baseline, (b) checkline and (c) tieline.
4. Define (a) magnetic meridian, (b) forebearing and (c) dip.
5. Convert the following reduced bearings to whole circle bearings :
(a) N 46°30'E
(b) N 60°30'W
(c) S 80°0'E
6. Define (a) level surface, (b) datum and (c) horizontal line.
7. Explain error due to refraction.
8. State any three applications of contour maps.
9. What are the different corrections applied in levelling?
10. List the minor instruments used in surveying.

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PART—B

10×5=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.** (a) Discuss in brief the fundamental principles of surveying. 5
(b) What are the applications of electronic planimeter? 5
- 12.** (a) Explain the method of chaining on sloping ground. 4
(b) List out the instruments used in a chain survey and briefly explain about any four instruments. 6
- 13.** The following perpendicular offsets were taken from a chain line to a curved boundary line : 10

Distance (m)	0	5	10	15	20	30	40	60	80
Offset (m)	2.5	3.8	4.6	5.2	6.1	4.7	5.8	3.9	2.2

Find the area between the survey line, the curved boundary line and the first and last offsets by (a) Trapezoidal rule and (b) Simpson's rule.

- 14.** A closed compass traverse PQRSP is run with prismatic compass in a clockwise direction. 10

Line	Forebearing	Back bearing
PQ	50°0'	230°0'
QR	170°0'	350°0'
RS	230°0'	50°0'
SP	310°0'	130°0'

Calculate the included angles of traverse PQRSP and apply the usual checks.

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- 15.** What do you mean by closing error in compass surveying? Explain the method of correcting the closing error by Bowditch rule. 10
- 16.** The following consecutive readings were observed with levelling instrument. The instrument was shifted after fifth and eleventh readings :
0.585, 1.010, 1.735, 3.295, 3.775, 0.350, 1.300, 1.795, 2.575, 3.375, 3.895, 1.735, 0.635 and 0.605.
Draw a page of level book and enter the readings. Determine the R.Ls of various points, if the R.L. of point on which the first reading was taken is 136.440 by Rise and Fall method. Apply check. 10
- 17.** What is reciprocal levelling? Explain reciprocal levelling with a neat sketch. 10
- 18.** (a) Describe briefly the temporary adjustments of dumpy level. 6
(b) List the fundamental lines of dumpy level. 4

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