



C14-C-106

4020

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2018

DCE—FIRST YEAR EXAMINATION

SURVEYING-I

Time : 3 hours]

[Total Marks : 80

PART—A

10 × 3=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 sentence.

1. State any three purposes of surveying. 3
2. State the stages of survey operations. 3
3. What is a well-conditional triangle? Why is it necessary to use? 1+2
4. Sketch the conventional signs for the following : 1×3=3
(a) Chain lime (b) Beachmark (c) Wire fencing
- * 5. What precautions a surveyor should observe in booking the field work in field book of a chain survey? 3
6. The length of a line measured with a chain having 20 meters was found to be 400 meters' the chain was found to be 10 cms too short. Find the true length of line. 3
7. Convert the following whole circle bearings into quadrantal bearings.
(a) 283° 45' (b) 150° 15' (c) 283° 45' 1×3=3

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8. List any three instrumental errors in compass survey. 1×3=3
9. The magnetic bearing of a line is $56^{\circ} 34'$. Calculate true bearing if magnetic declination is $5^{\circ} 16'$ East. 1×3=3
10. State any three uses 'Abney level'.

PART-B

10 × 5=50

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

11. (a) Discuss in brief the principles of surveying. 4
 (b) State the classifications of survey based on instruments used. 6
12. (a) Explain the method of chaining on sloping ground. 4
 (b) List out the instruments used in a chain survey and explain briefly the use of each instrument. 6
13. In passing an obstacle in the form of a pond, stations *A* and *D*, on main line, were taken on the opposite sides of the pond. On the left of *AD*, a line *AB*, 225 meter long was laid down, and second line *AC*, 275 meter long, was ranged on the right of *AD*, the points *B*, *D* and *C* being in the same straight line. *BD* and *DC* were then chained and found to be 125 meters and 137.5 meters respectively. Find the length of *AD*. 10
14. The following offsets were taken from a survey line to a curved boundary line.

Distance (in m)	0	20	40	60	80	120	160	200	240	270	300
Offset (in m)	12	10	8	6	4	5	7	8	10	11	13

Find the area between survey line, the curved boundary line and the first and last offsets by —

- (a) Trapezoidal rule
- (b) Simpson's rule 5+5

15. (a) Define the following the terms : 2+2

- (i) True and magnetic bearings
- (ii) Whole circle and reduced bearings

(b) Define local attraction. How do you detect it? 6

16. The following bearings were observed in running a closed traverse. Sketch and compute the interior angles of the traverse and apply the usual check: 10

Line	F.B.	B.B
AB	110° 15'	290° 15'
BC	35° 15'	215° 15'
CD	276° 30'	96° 30'
DE	195° 30'	15° 30'
AE	132° 15'	312° 15'

17. The following bearings were observed in running a closed traverse: 10

Line	F.B.	B.B
AB	74° 00'	254° 00'
BC	91° 00'	271° 00'
CD	166° 00'	343° 00'
DE	177° 00'	00° 00'
AE	189° 00'	9° 00'

At what stations do you suspect the local attraction?
Determine correct bearings.

18. (a) What is pantagraph? Explain the working principle of a pantagraph with a neat sketch. 6

(b) What is the use of Planimeter? 2

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