



c16-c-106

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**BOARD DIPLOMA EXAMINATION, (C-16)
MARCH/APRIL—2018
DCE—FIRST SEMESTER EXAMINATION**

SURVEYING—I

Time : 3 hours]

[Total Marks : 80

PART—A

2×15=30

- Instructions :** (1) Answer *any fifteen* questions.
(2) Each question carries **two** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define surveying and levelling.
2. List out the classification of surveys based on object of survey.
3. List the three types of engineering surveys carried out in connection with civil engineering works.
4. Differentiate between map and plan.
5. Draw the conventional signs of bridge and wall with gate.
6. Explain the functions of arrow and plumb-bob.

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7. Explain the principle of chain surveying.
8. Distinguish between perpendicular offset and oblique offset.
9. List the sources of errors in chaining.
10. Define subsidiary station and tie station.
11. List the duties of leader.
12. List any four points for selection of survey stations.
13. How is chaining carried out on a sloping ground?
14. The distance between two points, measured with a 30 m chain was recorded as 547 m. It was afterwards found that the chain was 6 cm too long. What was the true distance?
15. Write any four conditions in which compass survey is preferred.
16. Calculate the back bearing for the fore bearing of a line :
 - (i) 310 30
 - (ii) 60 45
17. State any two parts and their functions of prismatic compass.
18. Convert the following reduced bearings to whole circle bearing :
 - (i) N 75 30 E
 - (ii) S 25 00 W
19. Define the terms (a) true meridian and (b) magnetic meridian.
20. The magnetic bearing of line AB is S42 E and the magnetic declination is 8 20 E. What is the true bearing of line AB?

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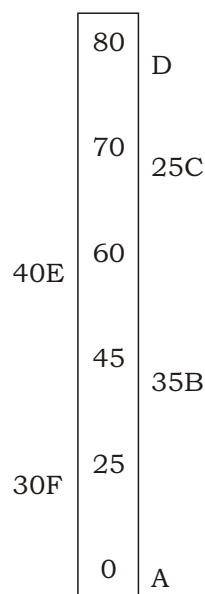
PART—B

10×5=50

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

- 21.** Write down the general classification of surveying. 10
- 22.** List out the instruments used in chain surveying and explain briefly the use of each instrument in chain survey. 5+5
- 23.** (a) Name the different types of chains and state where they are used. 5
(b) State any five points to be remembered while recording field book. 5
- 24.** (a) What are the types of obstacles in chaining? Explain briefly by any one method how chaining is continued when a river comes across. 2+3
(b) Plot the following cross staff survey of a field and calculate its area : 5

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25. The following perpendicular offsets were taken from the centre line of a road to a hedge :

<i>Offset no.</i>	1	2	3	4	5	6	7	8	9
<i>Offset (in m)</i>	4	6	5	7	5	4	3	4	6
<i>Distance (in m)</i>	0	15	30	45	60	80	100	110	120

Calculate the area between the centre line and hedge by applying (a) trapezoidal rule and (b) Simpson's rule. 10

26. The bearing of the sides of a traverse *ABCDEA* are given below :

<i>Line</i>	<i>Fore bearing</i>	<i>Back bearing</i>
<i>AB</i>	50 00	230 00
<i>BC</i>	170 00	350 00
<i>CD</i>	230 00	50 00
<i>DE</i>	310 00	130 00

Sketch and compute the interior angles of the traverse. 10

27. (a) What do you mean by closing error in compass survey? 3
 (b) Write the precautions to be taken in compass survey. 7

28. The following fore bearings and back bearings were observed with a compass :

<i>Line</i>	<i>Fore bearing</i>	<i>Back bearing</i>
<i>AB</i>	72 45	250 00
<i>BC</i>	349 00	167 15
<i>CD</i>	298 30	118 30
<i>DE</i>	229 30	48 00
<i>EA</i>	135 30	319 00

Find out the station affected by local attractions and work out the corrected bearing. 10
