

01792

**Diploma in Civil Engineering / Advanced Level
Certificate in Civil Engineering
DCLEVI/ACCLEVI**

Term-End Examination

December, 2011

BET-023 : ELEMENTS OF SURVEY

Time : 2 hours

Maximum Marks : 70

Note : *Question number 1 is compulsory. Attempt any four questions from the remaining. All questions carry equal marks.*

1. Fill in the blanks : 7x2=14

- (a) Least count of Levelling staff is _____.
- (b) Fore bearing of a line AB is $S\ 43^{\circ} - 15'W$.
Back bearing of the same line will be _____.
- (c) Number of links in a 20 m chain _____.
- (d) Prismatic compass is used to measure _____.
- (e) The Elevation difference between two consecutive lines of contain is called _____.
- (f) Plane table survey is used for _____ area.
- (g) Sum of External Angles of a closed traverse is _____.

2. Define the following terms :

7x2=14

- (a) Contour interval
- (b) Horizontal Equivalent
- (c) Swinging of telescope
- (d) Transiting
- (e) Line of sight
- (f) Magnetic Dip
- (g) Magnetic Declination

3. What do you mean by three point problem ? 14
What are the methods of solving it ? Explain any one of them with neat sketches.

4. During the compass survey a traverse ABCDE 14
was run. The bearing as measured are recored in table given below. Compute the interior angles of traverse. Also calculate closing error if any.

Side	AB	BC	CD	DE	EA
F.B.	106° - 19'	27° - 06'	279° - 42'	193° - 17'	126° - 32'
B.B.	286° - 19'	207° - 06'	99° - 42'	13° - 17'	306° - 32'

- 5. (a) Explain the advantages and disadvantages of plane table survey. 6
- (b) What are the factor affecting contour interval ? 4
- (c) Differentiate between cross staff and optical square. 4

6. Following readings were taken during a levelling exercise. The instrument was shifted after 5th and 8th reading. Enter the reading in the regular field book format and find RL of different stations. RL of the starting station is 100.00 m.
2.432, 3.446, 3.013, 2.006, 0.847, 2.689, 2.784, 1.667, 0.974, 0.832 and 0.168. 14
7. (a) Make the conventional sign of the following : 7
- (i) Electric Pole
 - (ii) Railway line
 - (iii) Canal
 - (iv) Tree
 - (v) Building
 - (vi) Well
- (b) What are the methods of plane table survey ? 7
Explain one of them.
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