

B.E. Fourth Semester (Civil Engineering) (CGS)

10184 : Surveying - I : 4 CE 04

P. Pages : 2

Time : Three Hours



AU - 2566

Max. Marks : 80

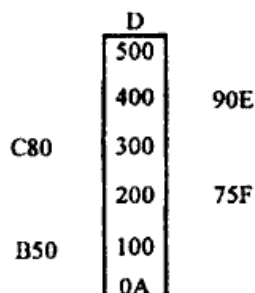
- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) Explain classification of survey. 6
b) A survey line was measured with a 20m chain. At the commencement of work chain was tested and found correct and distance measured was 4000m. It is observed that after measuring this distance chain was 20cm too long find the true distance. 8

OR

2. a) Explain principles of surveying. 6
b) What is chain and cross-staff survey find area of following, ABCDEF. 8



All dimensions are in metre.

3. a) Explain fore bearing, Back bearing, whole circle bearing and Quadrantal bearing. 6
b) The following bearings were observed with a prismatic compass. 7
- | Line | F.B. | B.B |
|------|------|------|
| AB | 75° | 255° |
| BC | 125° | 306° |
| CD | 190° | 9° |
| DA | 200° | 101° |

Where do you suspect local attraction find correct bearings.

OR

4. a) Explain magnetic declination and its radiation. 6
b) Explain how graphically error in prismatic compass traverse plotting is adjusted by Bowditch's graphical method. 7

5. a) State what do you understand by elevation of a point. Mention the instruments used for elevation measurement. Explain temporary adjustment of tilting level. 6
- b) Explain construction of Dumpy level stating its component parts. 7

OR

6. a) What are fundamental lines of dumpy level and give their desired relationship. 6
- b) Explain how you will test permanent adjustment of dumpy level. 7

SECTION – B

7. a) Differentiate between Height of Instrument method and Rise and fall method of calculating elevations of ground points. 6
- b) The following readings were taken with a dumpy level and 4m leveling staff. 1.250, 2.500, 2.750, 0.900, 1.360, 2.950, 2.450, 1.360, 0.455, 2.900. The first reading was taken on a B.M. of R.L. 400 metre. The instrument was shifted after 5th reading. Enter the readings in a page of level field book. Using H.I. method calculate elevations of staff readings. Give necessary arithmetic check. 8

OR

8. a) What is contouring. Explain any one method of contouring. 6
- b) Explain different types of obstacles encountered while chaining and how they are overcome. 8
9. a) Explain fundamental lines of a theodolite and give desired relationship between them. 6
- b) The following observations were made in running a closed theodolite traverse. 7

Line	Q.B.	Length
AB	N 50° E	125m
BC	S 10° E	90m
CD	S 25° W	60m
DA	N 45° W	20m

Calculate latitudes and Departures. If error exists, find correct latitudes and Departures.

OR

10. a) Explain Repetition method of measurement of horizontal angle. 6
- b) What do you understand by deflection angle. Explain how you will measure it. 7
11. a) Explain what is two point problem in plane table surveying. 6
- b) Explain total station construction, working and uses. 7

OR

12. a) Explain different accessories used in plane table surveying, state their use. 6
- b) Explain digital planimeter, with working and use. 7
