

B.E. (IVth Sem.) (CGPA) Civil Engg. Exam.-2015

SURVEYING-I

Paper : CE-402

Time Allowed : Three Hours

Maximum Marks : 60

Note : Attempt all questions.

All questions carry equal marks.

Unit-I

- Q.I**
- (a) Explain principles of surveying in detail with examples.
 - (b) What do you understand by ranging, describe its various types.

or

- (a) Discuss the classification of surveying based on instruments.
- (b) List the various errors in chaining. Explain any one in detail.

(2)

UITians

Unit-II

- Q.II (a) What is meridian ? Explain its types.
(b) List advantages and disadvantages of plane table survey.

or

- (a) What is resectioning ? Explain with example.
(b) What are temporary adjustments of compass ? Explain.

Unit-III

- Q.III (a) What is latitude and departure. How are they computed, what is their use in surveying ?
(b) A traverse survey was conducted and the data obtained is given below. Find magnitude and direction of closing error if any—

Line	Length	Bearing
AB	156.5	78°40'
BC	178.2	152°32'
CD	234.8	251°18'
DA	202.6	356°15'

or

- (a) What is magnetic declination ? Explain how it is used to find true bearing.

(b) Find the interior angles of the traverse ABCDA.

Apply usual checks—

Line	Bearing
AB	70° 30'
BC	120° 45'
CD	223° 30'
DA	320° 47'

Unit-IV

Q.IV (a) What is profile levelling ? Explain with an example its application.

(b) The following staff readings were taken during a levelling operation. Tabulate the result in the page of levelled page of field book. Find RL's of all the points. The instrument was shifted after 3rd and 7 m reading. The first reading was taken on a BM of $RL = 100.00m$, 0.685, 1.240, 0.865, 1.105, 1.680, 0.965, 2.855, 1.365, 0.740. *

or *

(a) What do you understand by temporary adjustments of theodolite. How it is done.

(b) What do you understand by reduction of levels. Explain the various methods used for reducing levels.

Unit-V

Q.V (a) Draw contours of—

(i) Hillock (ii) Pond (iii) Saddle

(b) The offsets (in m) taken from chainline to a curved boundary are given below—

Chainage	Offset
0	2.5
5	3.8
10	8.4
15	7.6
20	10.5
25	9.3
35	5.8
45	7.8
55	6.9
65	8.4

Find the area between chain line and boundary line.

or

- (a) How would you obtain cross-section of a relief structure from contour map ?
- (b) Find the volume of the tank as shown below. The RL of base of tank is 121.56 m and that of ground at top level is 125.96 m.

