

B.Tech II Year I Semester (R13) Supplementary Examinations June 2017

SURVEYING – I

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- State the principles of surveying.
 - What do you mean by local attraction?
 - Differentiate between whole circle bearing and quadrantal bearing.
 - State the temporary adjustments of compass survey.
 - List out the advantages of plane table surveying.
 - What are the obstacles in chaining?
 - What is meant by traverse surveying?
 - What do you mean by the term "bench mark"?
 - How do you convert the whole circle bearing to quadrantal bearing?
 - What do you mean by fore bearing and back bearing?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) Write in detail about obstacles in chaining.
(b) What is an offset? What are different types of offsets?

OR

- 3 (a) Define surveying and classify surveying.
(b) What have you learned scientifically about the objectives of chain surveying?

UNIT – II

- 4 (a) Explain various errors in compass survey.
(b) A closed compass traverse ABCDE was run and the observed bearings of the lines were obtained as under. Correct the bearings for local attraction.

Line	Fore bearing	Back bearing
AB	71°05'	250°20'
BC	110°20'	292°35'
CD	161°35'	341°45'
DE	220°50'	40°05'
EA	300°50'	121°10'

OR

- 5 (a) What do you understand about the W.C.B & Q.B and explain them clearly with the help of neat sketches?
(b) The following bearings are observed with a compass. Calculate the interior angles and perform the arithmetic check.

Line	AB	BC	CD	DE	EA
Fore bearing	75°35'	116°35'	165°35'	224°35'	305°35'

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UNIT – III

- 6 (a) Describe the method of reciprocal leveling with the help of suitable diagram.
(b) Eight readings were taken with a level in sequence as follows: 1.585, 1.315, 2.305, 1.225, 1.325, 1.065, 1.815 and 2.325. The level was shifted after the third and sixth readings. The second change point was a benchmark of elevation 186.975. Find the reduced levels of the remaining stations. Use the rise and fall method.

OR

- 7 (a) Explain the direct methods of contouring. Explain the advantages and disadvantages of these methods.
(b) Explain briefly with the help of neat sketches, the uses of contour maps.

UNIT – IV

- 8 (a) What is a transit theodolite? Describe the procedure of reiteration method to measure horizontal angles.
(b) State the procedure involved in bringing the bubble to the centre? Also explain the use of clamp screw, tangent screw and clip screw.

OR

- 9 (a) Describe 'Fast needle method' of theodolite traversing.
(b) Explain the principle of surveying (traversing) with the compass.

UNIT – V

- 10 Write detailed notes on uses and adjustments of the following minor instruments:
(a) Abney level.
(b) Indian pattern tangent clinometer.

OR

- 11 How do you determine the:
(a) Capacity of a reservoir.
(b) Earth work for a borrow pit.
