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

### SURVEYING - I

(Civil Engineering)

Time: 3 hours

1

Max. Marks: 70

### PART – A

### (Compulsory Question)

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

- Describe the method of reciprocal leveling with the help of suitable diagram. 6 (a)
  - Eight readings were taken with a level in sequence as follows: 1.585, 1.315, 2.305, 1.225, 1.325, 1.065, (b) 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

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

### $\left[ UNIT - IV \right]$

- 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

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

# [ UNIT – V ]

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

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(b) Indian pattern tangent clinometer.

#### OR

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