Sub Code:RCE302

Paper Id: 100302 Roll No:

B. TECH
(SEM-III) THEORY EXAMINATION 2019-20
SURVEYING

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a.	What are the primary divisions of survey?
b.	Differentiate between precision and accuracy.
c.	What is meant by face left & face right observation?
d.	State the difference between tie line and check line.
e.	Define the term benchmark.
f.	What is meant by latitude & departure of a line?
g.	Define the term superelevation.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a.	Explain in detail the different classifications of survey.
b.	Describe the function of different types of instruments used for chaining.
c.	State the process of contouring and state the characteristics and methods of locating the contours.
d.	What do you mean by triangulation? Explain the different classifications of triangulation system.
e.	Enlist various linear methods of setting out simple circular curve and describe any one of them in detail.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a)	Explain the following terms. i) Least Count ii) Closing Error iii) Arithmetic check
(b)	A quantity s is given by s = 5.367 – 4.88 Find the most probable error, most probable limits and maximum limits of quantity.

4. Attempt any *one* part of the following: 7 x 1 = 7

(a)	The length of a line measured with a 20 metre chain was found to be 250 metres. Calculate the length of a line if the chain was 10 cm too long.
(b)	Explain the process of recording horizontal and vertical angles using a theodolite.

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5. Attempt any *one* part of the following: 7 x 1 = 7

(a)	The following staff readings were observed successively with a level, the instrument having been shifted after third, sixth and eigth readings: 2.228; 1.606; 0.988; 2.090; 2.864; 1.262; 0.602; 1.982; 1.044; 2.684 m. Calculate the R.L. of the points using Height of instrument method if the first reading was taken with a staff held on a benchmark of 432.384m.
(b)	Find the correction for curvature and for refraction for a distance of (a) 1200 m (ii) 2.48 km.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a)	Define the term closing error and obtain the expressions for magnitude and direction of closing error.
(b)	What is a total station? State its applications in field of civil engineering.

7. Attempt any *one* part of the following: 7 x 1 = 7

(a)	Show that the shift bisects the transition curve and the transition curve bisects the shift.
(b)	Describe the Rankine's method of setting out simple circular curve and obtain the expression for deflection angels