SECTION – D

8. A tacheometer was set up at a station A and the readings on a vertical held staff at B were 2.255, 2.65 and 2.955. The line of sight being at an inclination of +8°24'. Another observation on the vertically held staff at B. M. gave the readings 1.640, 1.920 and 2.200, the Inclination of the sight being + 1°6'. Calculate the horizontal distance between A and B and the elevation of B if the R. L. of B.M. is 418.685 metres. The constants of the instruments were 100 and 0.3.   20

9. (a) What do you mean by vertical curve ? Explain different types of vertical curves with neat sketches.   10

   (b) What are transition curve ? Where they are provided ? Derive formula to find out length of transition curve.   10

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B. Tech. 3rd Semester (Civil) Examination – December, 2018

SURVEYING - I

Paper : CE-207-F

Time : Three Hours]   *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is *compulsory*. Attempt *one* question from each Section. All questions carry equal marks. Assume missing data, if any, suitably.

1. Answer the following :   2 × 10 = 20

   (a) Local Attraction

   (b) Working from whole to the part

   (c) Face Left and Face Right

   (d) Base line and check line

(e) Swing of Telescope

(f) Transition curve

(g) Contour and Contour Interval

(h) Chainage and offsets

(i) Orientation and its importance

(j) Tacheometric Constants

SECTION – A

2. (a) Explain the classification of surveying on different basis.   10

   (b) A 20 m chain was found to be 10 cm too long after chaining a distance of 1500 m. It was found to be 18 cm too long at the end of day's work after chaining a total distance of 2900 m. Find the true distance if the chain was correct before the commencement of the work.   10

3. (a) What are the various errors in taping ?   10

   (b) A steel tape 20 m long standardized at 55°F with a pull of 10 kg was used for measuring a base line. Find the correction per tape length, if the temperature at the time of measurement was 80°F and the pull exerted was 16 kg weight of 1 m^3 of steel = 7.86 g, wt of tape = 0.8 kg and E = 2.1×10^6 kg/cm^2. Coefficient of expansion of tape per 1°F = 6.2×10^{-6}.   10

SECTION – B

4. (a) Differentiate between prismatic and surveyor's compass.   10

   (b) The following bearings were observed with a compass :   10

AB 120° 30' CD 310° 30' BA 304° 30' DC 135° 15'

BC 68° 15' DA 200° 15' CB 246° 0' AD 17° 45'

Where do you suspect local attraction ? Find the correct bearings.

5. (a) What is Reciprocal leveling ? Explain the procedure of reciprocal leveling.   10

   (b) Describe with the help of sketches the characteristics of contours. Describe various methods of contouring. Discuss merits and demerits of each. Explain the use of contour map.   10

SECTION – C

6. Discuss various methods of plane Table Survey. Under which situation you will use method of section as compared to method of Intersection.   20

7. (a) Explain the methods used for measuring the horizontal angles of a traverse.   10

   (b) Explain the temporary adjustment of a transit theodolite.   10