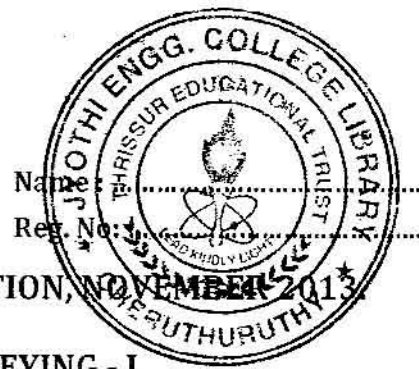**51018**

THIRD SEMESTER B.TECH DEGREE EXAMINATION, NOVEMBER 2013

CE 09 305/PTCE 09 304 – SURVEYING - I

Time : Three Hours   Maximum : 70 Marks

PART A

Answer all Questions   *5 x 2 = 10 marks*

1.
   a. What is meant by reconnaissance ?
   b. List out the errors in plane tabling
   c. Explain on levelling
   d. List out the elements of a curve
   e. What is fly levelling ?

PART B

Answer any four Questions   *4 x 5 = 20 marks*

2.
   a. Differentiate between tie line and check line.
   b. Write a short note on contour survey.
   c. Discuss on transition curves
   d. Explain on two point problem.
   e. Write a short note on Reciprocal leveling
   f. Differentiate between method of repetition and reiteration.

PART C

Answer all Questions   *4 x 10 = 40 marks*

3
   i. Write short notes on :
      a) Chaining and ranging
      b) Working from whole to part

(OR)

   ii. A 30 m tape was standardized at 20^0C under a pull of 100 N. The tape was used to measure distance AB when the temperature of 45 ^{0} C and the pull was 150 N. The tape was supported at the ends only. Find the correction per tape length when the cross sectional area of the tape is 5 mm^2. The unit weight of the material is 0.0785 N/mm^3 and the coefficient of thermal expansion is 11.5 $X10^{-6}/^0$ C. E = 2050000 KN/m^3.

4
   i. The following are the lengths and bearings of the sides of a closed traverse ABCD., Find the length and bearing of the line DA :

LINE	BEARING	LENGTH (m)
AB	$140^0 12'$	76.80
BC	$36^0 24'$	195.60
CD	$338^0 48'$	37.20
DA	?	?

Turn over

OR

ii Write short notes on :
   a. True and magnetic bearing
   b. Whole circle and reduced bearing

5

i. Explain in detail on temporary and permanent adjustments in a level

OR

ii. The following consecutive staff readings (all in m) were taken during a leveling operation.

| 0.894 | 1.643 | 2.896 | 3.016 | 0.954 | 0.692 | 0.582 | 0.251 | 1.532 | 0.996 | 2.135 |

The instrument was shifted after 4th & 8th readings. Arrange the data in tabular form and find the reduced levels of the points, if the 1st reading was taken on a bench mark of Reduced Level 820.765 m. Show the usual check also.

6.

i. Sketch and label a typical theodolite.   Also add a short note on clinometers.

OR

ii. Write short notes on :

   a. Hypsometer and ediograph
   b. Methods of setting out compound curve.

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