Printed Pages : 4

ECE-303

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 100307

Roll No. | | | | | | | | | |

B. Tech.

(SEM. III) (ODD SEM.) THEORY EXAMINATION, 2014-15

SURVEYING - I

Time : **2** Hours]   [Total Marks : **50**

Note :   Answer all questions.

1   Attempt any FOUR parts of the following :   **3.5×4=14**

(a)   The length of a chain line when measured with a 20 m chain was found to be 1341 m. But when a 30 m chain which had one link too short was used for the purpose, the line was found to be 1350 m long. What was the error in the 20 m chain ?

(b)   Name and describe various meridians used in surveying.

(c) ABCD are four stations, at station B the angle ABC is measured clockwise and found to be 196°40'. On setting up a compass at C the angle BCD measured clockwise is observed to be 141°16'. If AB is adopted as the meridian, what are the bearing of line BC and CD ?

(d) Describe method of repetition for measuring horizontal angle using theodolite..

(e) Describe the principle of measuring distances using EDM.

(f) Differentiate between following :

(i) Transit and non transit theodolite.

(ii) Whole circle bearing and quadrantal bearing.

2 Attempt any TWO parts of the following : 6×2=12

(a) What do you mean by sensitivity of a bubble tube ?

In the determination of sensitivity of the bubble the staff is held at a distance of 100m. The difference of staff reading for the travel of the bubble through 8 divisions each of which is 2 mm is 0.12 m. Calculate the sensitiveness of the bubble. Calculate also the radius of curvature of bubble tube.

(b) Explain reciprocal levelling. In levelling between two points A and B on opposite banks of a river the level was set near A and the staff readings on A and B were 1.365 m and 2.970 m respectively. The level was then moved and set up near B and respective readings on A and B were 0.775 m and 2.250 m. Find the true difference of level between A and B.

(c) Explain the principle of stadia tacheometry. How the tacheometric constants are being determined?

3 Attempt any TWO parts of the following : 6×2=12

(a) Describe the method of setting a circular curve by perpendicular offsets from the tangents with the help of chain and tape.

(b) What is a transition curve ? Derive an expression for an ideal transition curve.

(c) What is a vertical curve ? Show with neat sketches the different types of vertical curves.

4   Attempt any TWO parts of the following :   **6×2=12**

    (a)   Explain the (i) chain traversing and

        (ii) compass traversing.

    (b)   Describe various figures of triangulation.

    (c)   What is a three point problem ? Explain any one

        method in detail to solve it.

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