

Printed Pages : 4



ECE-303

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

PAPER ID : 100307

Roll No.

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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 $196^{\circ} 40'$. On setting up a compass at C the angle BCD measured clockwise is observed to be $141^{\circ} 16'$. 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.
