Lwre.1203   Surveying and Levelling (1+2)   Marks: 50

Time: 2 hours

I   **Fill up the blanks**   (10x1=10)

1   The vertical distance of a point above or below a datum line is called as ------------

2   A theodolite in which the telescope can be resolved through a complete revolution in a vertical plane is known as a ------------ theodolite

3   The BM established by the survey of India is known as------------

4   The horizontal angle between the true meridian and the magnetic meridian is called as ------------

5   The lines joining places having the same value of dip or inclination is called ----------

State True or False

6   The volume computed by the prismoidal method is considered to be average.

7   A contour line intersects a ridge line obliquely.

8   The size of the theodolite is defined according to the diameter of the graduated horizontal circle.

9   A clinometer can be used to measure vertical angles.

10   In a prismatic compass. the zero is marked on the South end.

II   **Write short notes on any FIVE**   (5x2=10)

1   What is local attraction?

2   What is the need of the scale drawn in the map?

3   What is orientation in Plane Table Surveying?

4   What is check levelling?

5   State trapezoidal rule. What are the considerations of this rule?

6   What is tacheometry?

7   How does one differentiate a depression and peak using contour lines?

III   **Answer any FIVE**   (5x4=20)

1   Differentiate rise and fall system and collimation system of estimating reduced levels.

2   Explain the procedure of setting up plane table over a station.

3   The distance between two stations was 1210 m when measured with a 20 m chain. The same distance when measured with 30 m chain was found to be 1195 m. If the 20 m chain was 0.05 m too long. what the error in the 30 m chain?

4   The following offsets were taken at 15m intervals from a survey line to an irregular boundary line: 3.50. 4.30. 6.75. 5.25. 7.50. 8.80. 7.90. 6.40. 4.40 and 3.25 m.
Calculate the area enclosed between the survey line. the irregular line and the first and last offsets by: (i) Trapezoidal rule (ii) Simpson's rule

5   Explain the stadia method of tacheometry.

6   Explain the characteristics of contours.

7   Write short notes on Hand level.

V   **Write essay on any ONE**   (1x10=10)

1   The following consecutive readings were taken with a level and a 4m levelling staff on a continuously sloping ground at common intervals of 30m: 0.855 (on A). 1.545m. 2.335. 3.115. 3.825. 0.455. 1.380. 2.055. 2.855. 3.455. 0.585. 1.015. 1.850. 2.755. 3.845 (on B). The RL of A was 380.550. Make entries in a level book and apply the usual checks. Determine the gradient of AB. Use Rise and Fall method

2   Explain with diagram the various accessories used in Plane Table Surveying.

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