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

I   **Fill in the blanks**   **(10x1=10)**
1. The basic principle of surveying is to work from ………..
2. The benchmark selected on objects like steps or bottom of slab is known as ……………….
3. In a prismatic compass, when the north is sighted, the reading in the circle will be …….
4. The device used to sight and draw lines in plane tabling is known as …………
5. If the contour values are found to be steadily decreasing inwards, it represents a ……….
6. Rotating the telescope through 180 degrees in a vertical plane and then turning it horizontally through 180 degrees is known as …….
7. The difference between upper and lower hair reading on staff in tacheometry is known as ………
8. A surface which is parallel to the mean spheroidal surface of earth is known as ……………
9. The device use to measure areas from plotted maps is known as ……..
10. Limiting length of offset is …………… m

II   **Write short notes on ANY FIVE of the following**   **(5x2=10)**
1. What is triangulation? Explain with a sketch.
2. How is the level reduced in the collimation method?
3. How is a plane table oriented?
4. Discuss any one method of determining tacheometric constants.
5. What are the properties of contours?
6. Explain the procedure of repetition in theodolite surveying.
7. How does GPS work?

III   **Answer ANY FIVE of the following**   **(5x4=20)**
1. Discuss how trapezoidal and Simpson's rules are used in computing areas, mentioning their relative advantages.
2. What is local attraction? How is it eliminated in compass surveying?
3. Discuss any three applications of contours.
4. With a neat simple sketch, explain the components of a transit theodolite.
5. How is a two point problem solved in plane table surveying?
6. Discuss the rise and fall method in levelling.
7. Briefly discuss the procedure involved in chain surveying.

IV   **Write an essay on ANY ONE of the following**   **(1x10=10)**
1. The following readings were taken using a level on points in an office compound. 1.005, 1.015, 2.345, 3.425, 1.115, 0.250, 2.035. The instrument was shifted after the 4th reading. Find the level difference between the first (RL 100.000) and last points and RL of all points. Use Collimation method.
2. Explain the principles of working and conduct of a total station survey, mentioning its advantages over conventional theodolite surveying.

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