



KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Agrl. Engg.) 2020 Admission
II Semester Final Examination-October 2021

Lwre 1203

Surveying and Levelling (1+2)

Marks: 50
Time: 2 hours

I Fill in the blanks

(10x1=10)

1. The angle of intersection of the mirrors in an optical square is _____ °C.
2. The quadrantal bearing of a line is determined by a _____ compass.
3. The first reading after the setting up of the levelling instrument is a _____.
4. Bessel's method is used to solve _____.
5. The process of keeping the plane table in a fixed direction so that the line representing a direction on the plan is parallel to its direction on the ground is called _____.

State True or False

6. A plumb bob can be used to establish a level line of sight.
7. The contour interval is directly proportional to the scale of the map.
In a theodolite traverse for land surveying, the lengths of the traverse lines are generally
8. measured with a steel tape.
9. If a tacheometer is fitted with an anallactic lens, its additive constant is zero.
10. Simpson's rule can be used for computation of areas when the number of offsets is odd.

II Write short notes on ANY FIVE of the following

(5x2=10)

1. What is a tie line and explain its purpose in chain surveying.
2. What is closed traverse?
3. Define the term transiting in Theodolite traversing.
4. What are the disadvantages of Plane Table Surveying?
5. What are the precautions to be taken while using a planimeter?
6. Explain what is a permanent bench mark?
7. State Prismoidal formula and its limitation.

III Answer ANY FIVE of the following

(5x4=20)

1. What is an offset? How are perpendicular offsets taken in a chain line and why are they preferred over oblique offsets?
2. What are common errors in plane tabling?
3. How would apply curvature and refraction corrections in a levelling work?
4. The following offsets were taken at 10 m intervals from a survey line to an irregular boundary line : 0, 2.50, 3.50, 5.00, 4.60, 3.20 and 0 m. Compute the area between the chain line, the irregular boundary line and end offsets by
(a) Mid ordinate rule and
(b) Average ordinate rule.
5. Discuss the uses of contour map
6. A 20 m chain was found to be 0.05 m too long after chaining 1400 m. It was found to be 0.1 m too long after chaining 2200 m. If the chain was correct before commencement of the work, find the true distance.
7. Discuss the procedure that should be adopted while measuring the bearing by prismatic compass.

IV

Write an essay on ANY ONE of the following

(1x10=10)

1. The following consecutive readings were taken with a dumpy level
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 the fourth and eighth readings. The first reading was taken on the staff held on the bench mark of RL 820.765. Rule out a page of level field book and enter the above readings. Calculate the reduced levels of the points and show the usual checks. What is the difference of the levels between the first and last points?
2. Explain with diagram the various accessories used in Compass Surveying.
