

# KERALA AGRICULTURAL UNIVERSITY

B.Sc (Hons.) Forestry 2012 Admission

V<sup>th</sup> Semester Final Examination- February -2015

Marks: 80

Time: 3 hours

Cat. No: Fmau.3109

Title: Forest Survey and Engineering (1+1)

## I Answer all questions

10 X 1 = 10

### a. Fill in the blanks

1. ----- is the instrument used for determining the area from the maps.
2. To retain earthen embankments ----- structures are constructed.
3. Contour lines cross the ridge at ----- angles.
4. The method of surveying suitable for small areas and can be controlled from single point is called as -----.
5. The longitudinal slope of road expressed as ratio of rise to fall to corresponding road length is called as -----.

### b. State true or false

6. The instrument used for setting right angles is optical square.
7. Instrument used for measuring both vertical and horizontal angles is dumpy level.
8. The angle between true meridian and magnetic meridian is called declination.
9. Ashlar is a type of brick masonry.
10. The line of location of road is called alignment.

## II Answer Any Ten only.

10 X 3 = 30

1. What are the different instruments used in plane table surveying.
2. What is local attraction? Explain.
3. Differentiate prismatic and surveyor's compass.
4. What are the points to be considered in selection of bridge site?
5. A line was measured with a 20 m chain and it was found to be 360 m. If the chain was 0.05 m too long, find the correct distance.
6. How is chain tested for correct length?
7. Write a note on earth dam
8. Give a brief note on the different types of drains used in roads
9. Explain the two principles of surveying.
10. Discuss on the different types of brick masonry
11. Differentiate between retaining wall and breast wall.
12. What is an offset? Discuss on the different types of offsets.

## III Answer Any Six.

6 X 5 = 30.

1. Discuss in detail the characteristics of contour.
2. What are the different types of bridges and explain any one with a neat diagram.
3. Draw a neat diagram of the cross section of a road and explain.
4. Briefly explain the different obstacles in surveying.
5. Explain the method of chaining due to non intervisibility due to raised ground.
6. Write the principles and scope of surveying in forestry

7. What are the different methods of plane table surveying? Explain any one with a neat diagram.
8. List the points to be considered in maintenance of roads.

**IV Answer any one**

**10 X 1 = 10.**

1. a. List the different methods of levelling.  
b. The following consecutive readings were taken by dumpy level.  
3.56, 3.25, 2.97, 1.95, 0.87, 3.64, 2.53, 1.59, 1.98, 0.85, 0.65.  
The instrument was shifted after the fifth and eighth readings. The R.L. of the bench mark of the first level was 150 m. calculate the RL of all the stations.
2. What are the prerequisites of a good road? Explain the procedure for preparation of detailed estimate for a road work.