



KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Forestry 2015 Admission
V Semester Final Examination-February-2018

Fmau.3109

Forest Survey and Engineering (1+1)

Marks:50
Time: 2 hours
(10x1=10)

I Fill in the blanks:

- 1 A Gunter's chain isft long and consists oflinks.
- 2 The dip of the needle at equator will be
- 3 The lower plate of theodolite is also known as
- 4 Parallax is eliminated byand
- 5 cross staff is used for setting 45° and 90°
- 6 The capacity of the farm pond is determined with the help ofthe watershed area.
- 7 The vertical distance between top of embankment and water level in the reservoir is

State True or False

- 8 Check lines are not necessary in traverse surveying.
- 9 Site for a building should not be undulating.
- 10 Plumbing fork is used for transferring the ground point on to the sheet.

II Write Short notes on ANY FIVE of the following

(5x2=10)

- 1 Explain a method to determine the width of a river
- 2 Convert the following quadrantal bearing to whole circle bearings
a $N 12^{\circ}30' E$ b $S 31^{\circ}35' E$ c $S 68^{\circ} 10' W$ d $N 5^{\circ} 40' W$
- 3 Explain the major differences in graduated cards of prismatic compass and surveyor's compass
- 4 Differentiate "transiting" and "swinging the telescope".
- 5 The magnetic bearing of a line is $48^{\circ} 24'$. Calculate the true bearing if the magnetic declination is $2^{\circ}36'$ East.
- 6 Write a short note on 'reciprocal levelling'.
- 7 Explain briefly brush wood dam.

III Answer ANY FIVE of the following

(5x4=20)

- 1 Explain the different methods of chaining on sloping ground.
- 2 Illustrate with neat sketches the methods of setting out a line perpendicular to a given chain line and passing through a given point outside it.
- 3 Explain the uses of contour maps.
- 4 List out the instruments required for conducting plane table surveying and explain the uses of each
- 5 Explain the rise and fall system of estimation of levels.
- 6 Explain with sketches the graphical method of balancing the traverse.
- 7 Enumerate the points to be considered while selecting the site for a bridge/ culvert.

P T O

IV**Write an essay on ANY ONE of the following****(1x10=10)**

- 1 a Explain the method of intersection in plane table survey
- b The following bearings were observed while transversing with a compass

Line	Fore bearing	Back Bearing
AB	45 ⁰ 45'	226 ⁰ 10'
BC	96 ⁰ 55'	227 ⁰ 5'
CD	29 ⁰ 45'	209 ⁰ 10'
DE	324 ⁰ 48'	144 ⁰ 48'

Mention which stations were affected by local attraction and determine the correct bearings.

- 2 The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eight readings:

2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 metres.

Enter the above readings in a page of level book and calculate the R.L of points if the first reading was taken with a staff held on a bench mark of 432.384 m.
