

# KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg) Degree Programme 2014 Admission

IV<sup>th</sup> Semester-Final Examination-June/July-2016

Cat. No: Lwre.2205

Marks: 50

Title: Soil and Water Conservation Engineering (2+1)

Time : 2 hours

## I. Fill in the blanks

(10 x 1=10)

- \_\_\_\_\_ cultivation consists of carrying agricultural operations like planting, tillage and inter cultivation along the contour.
- The system of growing more than one crop together on the same land is called as \_\_\_\_\_ cropping.
- Large and heavy particles (greater than 0.5mm diameter) are moved by the process of \_\_\_\_\_.
- Soil loss in geologic erosion is \_\_\_\_\_.
- Shelter belt protects the distance at downstream side equal to \_\_\_\_\_.
- In E130 the 130 stands for \_\_\_\_\_.
- Kinetic energy of rain drop can be computed by the equation \_\_\_\_\_.
- In LUCC, the lands suitable for wild life conservation is in \_\_\_\_\_.
- Diversion ditches are constructed \_\_\_\_\_ across the slope.
- The vertical interval (VI) of bench terrace with level top should be equal to \_\_\_\_\_ times of depth cut.

## II Answer the following any FIVE

(5 x 2=10)

- Write short notes on board based terrace.
- Write short notes on shifting cultivation.
- Explain USLE equation.
- Briefly explain different types of water erosion.
- On a 3% land slope, calculate the horizontal spacing of bunds in a medium rainfall area.
- Write short notes on multislot divisor.
- Differentiate contour and graded bunds.

## III. Write short notes on ANY FIVE of the following

(5x 4=20)

- Discuss the process that are involved during the different phases of soil movement by wind.
- Explain the different biological measures for erosion control.
- Describe the design of contour bunds.
- Depending upon the slopes, how are the bench terraces classified? Explain each of them with suitable diagram.
- What is grassed waterways and explain its design parameters.
- What are the factors influencing water erosion.

7. Calculate the soil loss from a plot of 1 ha having slope length 122m and slope steepness 10%. Rainfall erosion index of the place is 325. Assume soil erodability factor as 0.25Mg/ha. Cropping management factor as 0.16 and conservation practice factor as 0.6. (1 x 10=10)

**IV. Write essay on ANY ONE of the following**

1. How the gullies are classified? Describe permanent gully control structure with neat sketches.
2. Explain various water harvesting techniques.