

**KERALA AGRICULTURAL UNIVERSITY**  
**B.Tech (Agrl. Engg) 2013 Admission**  
**V<sup>th</sup> Semester Final Examination-December-2015**

Cat. No: Iden.3106

Marks: 50.00

**Title: Irrigation Engineering (2+1)**

Time: 2 hours

**I Fill up the blanks**

(10 x 1=10)

1. Water cohesion is otherwise is called \_\_\_\_\_ water
2. Of the average annual rainfall of India (400 m ha m ) ,about \_\_\_\_\_ m ha m. infiltrates into the soil
3. Soils with p<sup>H</sup> value higher than seven are called \_\_\_\_\_ soils
4. The ratio of crop yield to the total amount of water used in the field is called \_\_\_\_\_
5. Tensiometers are used to measure suction value below \_\_\_\_\_ atmosphere
6. Water use efficiency is the maximum for \_\_\_\_\_ irrigation
7. \_\_\_\_\_ is the name given to irrigation method practiced in North India with weekly rotation of irrigation water
8. \_\_\_\_\_ is the ratio between the irrigated area and the quantity of irrigation water used
9. \_\_\_\_\_ are devices placed over riser valve outlets as a means of connecting portable gated pipes to the pipeline
10. The movement of water from surface soil layers to subsurface soil layers is called \_\_\_\_\_

**II Write short notes on any FIVE questions**

(5 x 2=10)

1. Gross irrigation requirement
2. Permanent wilting point
3. Water distribution efficiency
4. Scheduling of irrigation
5. Exchangeable sodium percentage
6. Watershed
7. Total soil water potential

**III Write short essay on any FIVE questions**

(5 x 4=20)

1. Describe the design procedure of a channel using Kennedy's theory
2. Make a comparison between drip and sprinkle irrigation
3. Describe the check basin irrigation , its different types and the limitations

4. What is land grading? Explain the criteria for land leveling in the context of irrigation
5. Describe Salt Balance .Explain how you would calculate the leaching requirement of a salt affected soil
6. Briefly describe the structures used in underground pipe conveyance system
7. Explain the kinds of soil water with the help of a diagrammatic representation of the progressive thickening of water film in a macropore

**III Write essay on any ONE**

**(1 x 10=10)**

1. Give a detailed description of drip method of irrigation , it's components , design criteria ( brief description only) , advantages ,disadvantages and maintenance
2. List the different methods for direct and indirect measurements of evapotranspiration. Describe in detail the Lysimeter method