

KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg) 2013 Admission
IIIrd Semester Final Examination- January-2015

Cat. No: Lwre.2104

Title: Watershed Hydrology (2+1)

Marks: 50.00
Time: 2 hours

I Fill up the blanks/State True or False

(10 x 1=10)

1. A plot between rainfall intensity vs times is called as _____
2. In India, 1st day of _____ is the beginning of a water year
3. Precipitation of snow and rain simultaneously is denoted by _____
4. According to Indian standards, the density of the rain gauge stations in plains is _____
5. A plot of the discharge in a stream plotted against time chronologically is called as _____
6. The maximum rate at which a given soil at a given time can absorb water is defined as _____
7. The average rainfall above which the rainfall volume is equal to the runoff volume is _____
8. Depth-Area -Duration curves of precipitation at a station would normally be curves, concave downwards with duration increasing outward
9. Point rainfall refers to the rainfall data of a station
10. The Thiessen polygon is a representative area used for weighing the observed station

II Write short notes on any FIVE questions

(5 x 2=10)

1. The normal annual rainfall at stations A, B, C and D in a basin are 80.97, 67.59, 76.28 and 92.01 cm respectively. In the year 1975, the station D was inoperative and the stations A, B and C recorded annual precipitation of 91.11, 72.23 and 79.89 cm respectively. Estimate the rainfall at station D in that year
2. Write short note on frontal and convective precipitation
3. Explain briefly about the Thiessen polygon method of estimating average rainfall depth
4. What is Unit Hydrograph and state its applications
5. Discuss briefly the evaporation process
6. Define stream area and stream slope
7. Write short notes on runoff characteristics of streams

III Write short notes on any FIVE questions

(5x 4=20)

1. An Urban catchment has an area of 85 ha .The land use of the area and the corresponding runoff coefficients are given below .Calculate the equivalent runoff coefficient using rational method if , the average intensity of rainfall is 103.8 mm/h
2. Discuss briefly the various abstractions from precipitation
3. Discuss briefly the various SCS -CN method of estimating yield of a catchment through one of the daily rainfall record
4. Explain briefly the streamflow measurement by dilution technique
5. Discuss at length about any two methods of estimating peak rate of runoff
6. Explain in detail about the factors affecting flood hydrograph
7. Discuss in detail about the infiltration process and the resulting soil moisture zones in the soil

IV Write an essay on any ONE

(1 x 10=10)

1. Discuss in detail about the recording and non recording rain gauges with the help of suitable
2. Discuss in detail about the different methods of estimating evaporation
