

# KERALA AGRICULTURAL UNIVERSITY

# B. Tech. (Agrl. Engg.) 2020 Admission III Semester Final Examination – March 2022

### Lwre.2104

## Watershed Hydrology (2+1)

Marks: 50 Time: 2 hours

I		Choose the correct answer		(10x1=10)	
	1.	In the determination of Curve Number, how many hydrologic soil groups are there?			
		a) 2	b)		
		c) 4	d)	5	
	2.	Horton's equation is used to estimate			
		a) Infiltration	b)	Evaporation	
		c) Interception	d)	Runoff	
	3.	Time of concentration of a drainage basin is a func	tion	of	
		a) Channel slope and length	b)	Area	
		c) Soil type	d)	Rainfall	
	4.	stream has many bars.			
		a) Channel	b)	Pointed	
		c) Braided	d)	Mouth	
	5.	Arithmetic method is ideally suited for catchment size of			
		a) Less than 50 ha.	b)	More than 50 ha.	
		c) Less than 500 ha.	d)	More than 500 ha.	
	6. If runoff depth is 30 mm and the rainfall depth is 60 mm, the runoff co efficient is				
		a) 0.5	b)	1.0	
		c) 1.5	d)	2.0	
	7.	Hyetograph is a plot of			
		a) Precipitation against time	b)	Surface runoff against time	
		c) Stream flow against time	d)	Recorded runoff against time.	
	8.	The planimeter measures			
		a) area	b)	density	
		c) land roughness	d)	length	
	9.	Water loss to the atmosphere from plants and water	atmosphere from plants and water surfaces is referred as		
		a) Evaporation	b)	Transpiration	
		c) Evapotranspiration	d)	Infiltration	
		Fill in the blanks			
	10.	The hydrologic soil groupindicates the high runoff potential soils.			
II		Write short notes on ANY FIVE of the following (5x2=10)			
	1.	Briefly discuss the factors affecting flood hydrograph.			
	2.	Discuss I-D-F relationship.			
	3.	Define Unit Hydrograph.			
	4.	Define Double Mass Curve Technique.			
	5.	Write short notes on Raingauge adequacy.			
	6.	Define the stream order in Watershed Managemen	t.		
	7.	Synthetic hydrograph and its limitations.			
		경기가 되었다면 하면 하는 사람들이 가지 않는데 중요한 사람들이 함께 되었다. 그는 것이다.			

#### III Answer ANY FIVE of the following

(5x4=20)

- 1. Discuss the components of hydrologic cycle with a neat sketch.
- 2. Discuss the Isohyetal method of estimation of Mean Areal Precipitation.
- 3. Discuss the methods to determine the missing data of rainfall.
- 4. Discuss in detail the various Infiltration equations and Infiltration indices.
- 5. Discuss in detail the types of raingauge with neat sketches wherever necessary.
- 6. Define flood routing, methods and its uses.
- 7. Discuss briefly the Drought classification, causes and impacts.

### IV Write an essay on ANY ONE of the following

(1x10=10)

- 1. Discuss in detail the components of hydrograph and methods of separation of base flow.
- 2. Discuss in detail the factors affecting runoff.

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