C **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 55A01

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fifth Semester

Agricultural Engineering

15UAG501- IRRIGATION AND DRAINAGE ENGINEEERING

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. In the National Water Policy (2002) the highest priority in the allocation of water resources of India is given to CO1- R

   (a) Ecology (b) Irrigation (c) Drinking water (d) Industries

2. On farm development works includes CO4 R

   (a) Construction of lined field channels (b) Creation of farm roads

   (c) Both a & b (d) None of the above

3. The number of days between irrigation during periods without rainfall CO3- R

   (a) Irrigation frequency (b) Irrigation Interval

   (c) Irrigation periods (d) Irrigation requirement

4. The average size of rainfall is about CO4- R

   (a) 0.5 mm (b) 0.05 mm (c) 5 mm (d) 0.005 mm

5. Which of the following instrument is used for measuring evaporation CO5- R

   (a) Pan evaporometer (b) Penetrometer (c) Tentiometer (d) All of the above

PART – B (5 x 3= 15 Marks)

6. Differentiate ‘duty’ and ‘delta’. CO1- R

7. Define Evapotranspiration (Et) or Consumptive Use. CO2- R

8. List five objective of lining materials for lining watercourse and field channels. CO3- R

9.		Explain the on farm development works.	CO4- R	
10.		List the four types of drainage systems used in flat areas.	CO5- R	

PART – C (5 x 16= 80Marks)

11.	(a)	(i) Conclude the priorities considered in the National Water Policy.	CO1-R	(8)
		(ii) Define net irrigation requirement, Gross Irrigation requirement and irrigation efficiency.	CO1-R	(8)
		Or		
	(b)	(i) Derive a relationship between Duty, Delta & base period.	CO1-R	(8)
		(ii) List the factors influencing effective rainfall.	CO1-R	(8)
12.	(a)	Write the Design procedure for a underground pipeline irrigation system.	CO2-App	(16)
		Or		
	(b)	Derive the Evapotranspiraton methods by climatological data, Blaneycriddle and modified penman method	CO2-App	(16)
13.	(a)	Summarize the concept and components of CADA programmed in Tamil Nadu.	CO3-U	(16)
		Or		
	(b)	(i) Describe in detail about drainage systems used in flat areas with neat sketch.	CO3-U	(8)
		(ii) List the benefits of proper drainage system.	CO3-U	(8)
14.	(a)	(i) Explain the principles of flow through soils.	CO4-U	(8)
		(ii) Write the design procedure for subsurface drainage system.	CO4-U	(8)
		Or		
	(b)	Explain in detail about the on farm development works of CADA	CO4-U	(16)
15.	(a)	Differentiate surface drainage systems with sub-surface drainage systems.	CO5- U	(16)
		Or		
	(b)	Explain the classification of canals.	CO5- U	(16)