

Code No: **RT41351**



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IV B. Tech I Semester Supplementary Examinations, February - 2019

MICRO IRRIGATION ENGINEERING

(Agriculture Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B Answer ALL sub questions from Part-A Answer any THREE questions from Part-B *****

PART-A (22 Marks)

1.	a) b) c)	Explain the purpose of debris screens with the help of a diagram. Explain briefly how fertigation is accomplished using sprinkler irrigation system. How the reasonable degree of uniformity is obtained in a sprinkler irrigation	[4] [4]
	d) e) f)	system? Differentiate pressure compensating and non-pressure compensating drippers. Explain about acid treatment of the drip system and why it is to be carried out. Explain how the irrigation scheduling is carried out in drip irrigation system.	[4] [4] [3] [3]
		$\underline{\mathbf{PART}}_{\mathbf{B}} (3x16 = 48 Marks)$	
2.	a)	Give the layout of sprinkler irrigation system layout with showing its all components and explain the purpose of each component.	[8]
	b)	Explain the history of sprinkler irrigation system advancement in the state in terms of pipe materials.	[8]
3.	a)	Determine the application rate of sprinkler having discharge of $0.81 \text{ m}^3/\text{hr}$ with sprinklers spaced at 12 m distance on lateral and lateral spaced at 12 m distance	[0]
	b)	With the help of a diagram explain the layout and component of sprinkler	[8]
	- /	irrigation system.	[8]
4.	a) b)	Explain the step by step procedure of design of sprinkler irrigation system.	[8]
	0)	drift losses.	[8]
5.	a)	Find out the water requirement of tomato having spacing of $30 \text{ cm x} 45 \text{ cm x} 60 \text{ cm}$. Pan evaporation of the region is 7 mm/day. Assume crop factor as 0.8 and	
	h)	pan factor 0.7. With the help of suitable diagrams explain about the different filters used in drip.	[8]
	0)	irrigation systems. Also explain about the head losses that occur when the water	
		flows through these filters.	[8]
6.	a)	Calculate the emission uniformity for a drip irrigation lateral for arid region using the following data: For a point source emitter, on a permanent crop.	
		Assume uniform terrain with a slope less than 2% . Cy = 0.07. Cu _{min} = 10 m/m. Q _{avg} = 11 lit/hr. N _e =2.	[8]
	b)	Explain emitter constants and emitter flow equations and pressure variation in	гот
		laterais and sub mains.	٢٩٦
7.	a) b)	Explain step by step procedure of planning and design of drip irrigation system. Explain the procedure of economic pie size in a drip irrigation system.	[8] [8]