Code No: RT32351 **R13** SET - 1

III B. Tech II Semester Supplementary Examinations, November - 2017

IRRIGATION AND DRAINAGE ENGINEERING

(Agricultural Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	What do you mean by irrigation? What are the benefits of irrigation?	[4M]
	b)	What is surface irrigation? What are different types of surface irrigation?	[3M]
	c)	What are different methods of measuring irrigation water on the farm?	[4M]
	d)	What do you mean by drainage? What are the objectives of drainage?	[4M]
	e)	What are the factors affecting rate of flow into drains?	[4M]
	f)	Calculate Leaching Requirement (LR), total irrigation requirement (I) and leaching percentage (LP) for the following data ECi = 1.2 mmhos/cm, ECdp = 12.0 mmhos/cm and Ic = 6 mm/day.	[3M]

PART –B

2	a)	Explain about different methods of assessment of irrigation water	[8M]
	b)	Calculate the Delta for kharif crop having Duty as 2500 ha/cumec. (B for kharif=123d)	[3M]
	c)	What is meant by infiltration? What are the factors affecting infiltration? Give Kostiakov equation for estimation of infiltration.	[5M]
3	a)	What are the conditions favorable for selection of basin irrigation system?	[4M]
	b)	Explain about Hydraulic phases of Surface irrigation process.	[6M]
	c)	What is Border irrigation method? What are the advantages and disadvantages of the method?	[6M]
4	a)	How do you estimate Discharge capacity of channel?	[5M]
	b)	Differentiate between fully submerged flume and partially submerged flume	[5M]
	c)	Discuss about area-velocity method of water measurement	[6M]
5	a)	Explain about most commonly used techniques for removing (draining) excess water	[6M]
	b)	What do you mean by drainable porosity? How do you determine it?	[5M]
	c)	Discuss about drainage problems in India	[5M]
6	a)	Explain about the structures of a Pipe drainage system	[8M]
	b)	Explain why you have to be careful in selection of outlet location in drainage system	[8M]
7	a)	Discuss about different steady state equations used for different soil profiles	[8M]
	b)	Classify salt affected soils based on the values of EC, ESP and pH of the soil saturation extract. Briefly explain about any one of them	[8M]

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