Seat No.:	Enrolment No.

Subject Code: 731202

Subject Name: Water Use Management

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- III • EXAMINATION - SUMMER 2015

Date: 02/05/2015

Time: 2:30 pm to 5:00 pm				Total Marks: 70		
1. 2.	Attempt all question Make suitable assu	imptions wherev				
(a) (b)	Discuss briefly the factors affecting the choice of the method of irrigation. Discuss the factors affecting water requirements of a crop.					
(a) (b)	Discuss in brief the check basin method. Define and explain consumptive use of water. List the various factors which affect it.					
(b)			ired from the follow	•	07	
(a)	Enumerate the conditions which are favorable for the adoption of sprinkler irrigation					
(b)	How will you determined (i) Head loss (ii) Frictional	in mainline due to loss in lateral line	o friction.	r irrigation system?	07	
(a)	Discuss the hydraulics of flow in the drip irrigation method.					
(b) (a) (b)	How will you decide the following in a drain: (i) Water surface slope (ii) Velocity of flow (iii) Side slopes How will you classify drains? Give their salient features. Compare surface drains versus Sub-surface drains.					
(a)	OR What are the main objectives of providing drains? List the essential 0' requirements of a drain. What types of lands require drainage?					
	(a) (b) (a) (b) (a) (b) (b)	ructions: 1. Attempt all questic 2. Make suitable assu 3. Figures to the right (a) Discuss briefly the (b) Discuss in brief the (b) Define and explain List the various fac (b) Calculate the reservation losses are 10% and Crop Wheat Rice Sugarcane Cotton Other crops (a) Enumerate the condition system. (b) How will you determing in Frictional (iii) Pump capa (a) Discuss the hydra (b) Compare in a tabut (a) How will you decompare in a tabut (a) How will you decompare in a tabut (b) Compare in a tabut (c) Water surrection in the surrection of t	ructions: 1. Attempt all questions. 2. Make suitable assumptions wherev 3. Figures to the right indicate full ma (a) Discuss briefly the factors affecting water r (b) Discuss the factors affecting water r (a) Discuss in brief the check basin meth (b) Define and explain consumptive use List the various factors which affect (b) Calculate the reservoir capacity requisors are 10% and reservoir evaporated reservoir evaporated (days) Wheat 150 Rice 120 Sugarcane 320 Cotton 210 Other crops 120 (a) Enumerate the conditions which are system. (b) How will you determine the following (i) Head loss in mainline due to (ii) Frictional loss in lateral line (iii) Pump capacity (a) Discuss the hydraulics of flow in the Compare in a tabular form, furrow (a) How will you decide the following (i) Water surface slope (ii) Velocity of flow (iii) Side slopes (b) How will you classify drains? drains versus Sub-surface drains	ructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Discuss briefly the factors affecting the choice of the method. (b) Discuss the factors affecting water requirements of a critical discussion in the properties of the check basin method. (b) Define and explain consumptive use of water. List the various factors which affect it. OR (b) Calculate the reservoir capacity required from the follow losses are 10% and reservoir evaporation and seepage to the control of the contr	1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Discuss briefly the factors affecting the choice of the method of irrigation. (b) Discuss the factors affecting water requirements of a crop. (a) Discuss in brief the check basin method. (b) Define and explain consumptive use of water. List the various factors which affect it. OR (b) Calculate the reservoir capacity required from the following data, if the conveyance losses are 10% and reservoir evaporation and seepage losses are 8%. Crop Base Period Duty at the Area under the (days) field crop (ha/cumec) (ha) Wheat 150 1900 12000 Rice 120 800 6500 Sugarcane 320 750 3500 Cotton 210 1500 2500 Other crops 120 600 1500 (a) Enumerate the conditions which are favorable for the adoption of sprinkler irrigation system. (b) How will you determine the following losses in sprinkler irrigation system? (i) Head loss in mainline due to friction. (ii) Prictional loss in lateral line. (iii) Pump capacity OR (a) Discuss the hydraulics of flow in the drip irrigation method. (b) Compare in a tabular form, furrow, sprinkler and drip irrigation methods. (a) How will you decide the following in a drain: (i) Water surface slope (ii) Velocity of flow (iii) Side slopes (b) How will you classify drains? Give their salient features. Compare surface drains versus Sub-surface drains.	

	(b)	Determine the size of the tile drain for a drainage area of 6 hectares and	07	
	` /	drainage coefficient of 1.25 cm. The longitudinal gradient of the drain is 0.25%		
		and the rugosity coefficient of the material of drain is 0.015.		
Q.5	(a)	n) Discuss conjunctive use of surface water and ground water.		
	(b)	Explain reclamation and management of salt affected soils.		
	` /	OR		
Q.5	(a)	Discuss operation and management of irrigation projects.	07	
	(b)	Explain modernization of existing irrigation projects.	07	
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