



**MOHAMED SATHAK**  
**A. J. COLLEGE OF ENGINEERING**  
**SIRUSERI IT PARK, OMR, CHENNAI 603 103**



## **DEPARTMENT OF CIVIL ENGINEERING**

### **QUESTION BANK**

**Name of the Faculty : Mrs. R. B. RAKESH**

**Subject : Irrigation Engineering**

**Regulation : 2017**

**Course Code : CE 8603**

**Branch : Civil Engineering**

**Year & Semester : III / VI**

## **CE 8603 – IRRIGATION ENGINEERING**

### **Course Objectives**

The Student should be able

<b>S. No.</b>	<b>Course Objective</b>
1	The student is exposed to different phases in irrigation practices and Planning and management of irrigation. Further they will be imparted required knowledge on Irrigation storage and distribution canal system and Irrigation management.

### **Course Outcomes:**

On Completion of the course the students will be able to

<b>CO No.</b>	<b>Course Outcome</b>
1	Have knowledge and skills on crop water requirements.
2	Understand the methods and management of irrigation.
3	Gain knowledge on types of Impounding structures
4	Understand methods of irrigation including canal irrigation
5	Get knowledge on water management on optimization of water use.

### **BLOOMS TAXONOMY(BT Level)**

K1-Remembering , K2-Understanding, K3-Appling, K4-Analyzing, K5-Evaluating ,K6-Creating

### **UNIT – 1 CROP WATER REQUIREMENT**

	<b>Part A</b>	<b>CO</b>	<b>BT level</b>	<b>Univ.QP Reference</b>	<b>Marks Allotted</b>
1.	What is meant by duty and delta?	CO1	KI	(A/M 17)	2
2.	What is irrigation water requirement of crops?	CO1	KI		2
3.	What is non-consumptive use of water?	CO1	KI	(A/M 17)	2
4.	What are the need for irrigation?	CO1	KI	(N/D-2017)	2
5.	Merits and demerits of irrigation?	CO1	KI	(A/M-16)	2
6.	What are the classifications of irrigation?	CO1	KI	(A/M-16)	2
7.	Define Surcharge storage?	CO1	KI	(NOV/DEC 2010)	2
8.	Define duty of water?	CO1	KI	(A/M 19)	2
9.	Define Evapotranspiration?	CO1	KI	(N/D-2017)	2
10.	What is consumptive use of water?	CO1	KI	(A/M 17)	2
	<b>Part B</b>	<b>CO</b>	<b>BT level</b>	<b>Univ.QP Reference</b>	<b>Marks Allotted</b>

1.		What is meant by Duty? List the factors affecting duty. How to improve duty?	CO 1	KI	(A/M-16)	13
2.		Explain factors affecting consumptive use of water?	CO 1	K2	( A/M-2019)	13
3.		Expalin about irrigation requirements of crops ?	CO 1	K2		13
4.		Recommend a method for estimating the consumptive use of crops over a large area. Classify the consumptive use of water by crops based on its estimation during its specific period ? ( A/M- 2017)	CO 1	K5	( A/M-2017)	13
5.		Describe the necessity and importance of irrigation water in our country?	CO 1	K2	(A/M- 2017)	13
6.		Estimation of Evapotranspiration using experimental methods?	CO 1	K5	( A/M-2017)	13
7.		Define Irrigation? What are the benefits and ill effects of irrigation?	CO 1	K1	(N/D-2017)	13
8.		List a short note on the factors influencing duty, delta, and base period ? (N/D-2016)	CO 1	K1	((N/D-2016)	13

**UNIT-II**  
**IRRIGATION METHODS**

Part A			CO	BT level	Univ.QP Reference	Marks Allotted
1.		Define types of irrigation methods?	CO 2	K1	(A/M-16)	2
2.		What are the different methods of sub surface irrigation?	CO 2	K1	(A/M 17)	2
3.		What are essential components of drip a drip irrigation?	CO 2	K1	(A/M 17)	2
4.		Define tank irrigation?	CO 2	K1	(N/D-2017)	2
5.		Explain Surface irrigation?	CO 2	K2		2
6.		What is water distribution system?	CO 2	K1		2
7.		Define sprinkler irrigation?	CO 2	K1	(N/D-2017)	2
8.		Define irrigation efficiency?	CO 2	K1		2
9.		Explain ridge and furrow irrigation?	CO 2	K2		2
10.		Define micro irrigation?	CO 2	K1	(A/M-16)	2

Part B			CO	BT level	Univ.QP Reference	Marks Allotted
11.		Explain about the irrigation methods also explain its merits and demerits?	CO 2	K2	( N/D – 2018 )	13
12.		What are the different methods of surface irrigation? Describe the different types of methods?	CO 2	K1	(A/M- 2017)	13
13.		Distinguish between surface, sub-surface, micro irrigation methods?	CO 2	K4		13
14.		Explain the design of Drip and sprinkler irrigation?	CO 2	K2		13
15.		Explain irrigation efficiency?	CO 2	K2		13
16.		Make a note on micro irrigation system and its merits and demerits?	CO 2	K3	( A/M-2019)	13
17.		Define irrigation scheduling? ( N/D – 2018 )	CO 2	K1	( N/D – 2018 )	13
18.		Explain tube well with neat sketch? (A/M-2019)	CO 2	K2	(A/M-2019)	13
<b>UNIT -III</b> <b>DIVERSION AND IMPOUNDING STRUCTURES</b>						
Part A			CO	BT level	Univ.QP Reference	Marks Allotted
1.		Explain types of impounding structures?	CO 3	K2	(N/D 2018)	2
2.		What are the forces acting on gravity dam?	CO 3	K1	(N/D 2018)	2
3.		Classification of dams based on the materials of construction?	CO 3	K2	(A/M 19)	2
4.		What are the objectives of diversion headworks?	CO 3	K1	(A/M 19)	2
5.		Explain weirs?	CO 3	K2	(A/M-16)	2
6.		Explain Barrages?	CO 3	K2		2
7.		Define Earth dam?	CO 3	K1	(A/M-16)	2
8.		What is arch dam?	CO 3	K1		2
Part B			CO	BT	Univ.QP	Marks

				level	Reference	Allotted
1.		What are the failures of gravity dam and write precautions against failures?	CO 3	K1	(A/M-2019)	13
2.		Discuss about the components parts of diversion head works and also gives reason and remedial measures of its failures?	CO 3	K6	(N/D- 2018)	13
3.		What are the causes of failure of Earth dam, Gravity dam and Earth dam? State its remedies?	CO 3	K1	(N/D – 2016)	13
4.		Identify the forces acting on an earth dam?	CO 3	K3	(A/M- 2015)	13
5.		Identify the forces acting on a gravity dam.	CO 3	K3	(A/M- 2015)	13
6.		Explain the design of gravity dams?	CO 3	K2		13
7.		What are the criteria for locating the diversion head work? Explain?	CO 3	K1		13
8.		Explain the factors affecting the selection of type of a dam?	CO 3	K2		13
<b>UNIT-IV CANAL IRRIGATION</b>						
	<b>Part A</b>		<b>CO</b>	<b>BT level</b>	<b>Univ.QP Reference</b>	<b>Marks Allotted</b>
1.		Why canal drop is necessary in canal irrigation?	CO 4	K1	(A/M 17)	2
2.		What is aqueduct? Where is it placed in a cross drainage work?	CO 4	K1	(N/D 2018)	2
3.		What is the purpose of canal lining?	CO 4	K1	(A/M 17)	2
4.		State drawbacks in Kennedy's theory? (N/D 2018)	CO 4	K1	(N/D 2018)	2
5.		Explain Lackey's Regime theory?	CO 4	K2	(A/M-16)	2
6.		What is cross drainage work?	CO 4	K1	(A/M-16)	2
7.		What is canal outlet?	CO 4	K1		2
8.		Define unlined canal?	CO 4	K1		2
9.		What is canal drop?	CO 4	K1		2
	<b>Part B</b>		<b>CO</b>	<b>BT level</b>	<b>Univ.QP Reference</b>	<b>Marks Allotted</b>
1.		Explain canal lining?	CO 4	K2	(april/may 2019)	13

2.		What are the different types of cross drainage works that necessary on canal alignment?	CO 4	K1	(nov/dec 2019)	13
3.		Explain briefly and discuss the various methods of lining canals. give a cross section of lined canals?	CO 4	K2	(april/may 2017 )	13
4.		What are the purpose of cross drainage work ? what are the various types of cross drainage works ? describe the use siphon in cross drainage work ?	CO 4	K1	(april/may 2017)	13
5.		what are cross drainage works explain its type with neat sketch ?	CO 4	K1	(AUC Nov/Dec 2018)	13
6.		Compare Kennedy and lacy's theory along with defects in each type ?	CO 4	K2	(AUC Nov/Dec 2018)	13
7.		Explain the canal alignment ? (A/M- 2016) (K2)	CO 4	K2	(A/M- 2016)	13
8.		Define Canal falls. Explain its types briefly ?	CO 4	K1	(A/M-17)	13

**UNIT – V**  
**WATER MANAGEMENT IN IRRIGATION**

<b>Part A</b>			<b>CO</b>	<b>BT level</b>	<b>Univ.QP Reference</b>	<b>Marks Allotted</b>
1.		Why irrigation scheduling is significant?	CO 5	K1	(A/M 17)	2
2.		What are the objectives of participatory irrigation management?	CO 5	K1	(N/D 2018)	2
3.		What are the advantages of water user association?	CO 5	K1	(A/M-16)	2
4.		Explain optimization of water use?	CO 5	K2	(A/M-16)	2
5.		Explain on farm development works?	CO 5	K2		2
6.		Define Economic aspects of irrigation?	CO 5	K1		2
7.		Explain Changing paradigms in water management?	CO 5	K2		2
<b>Part B</b>			<b>CO</b>	<b>BT level</b>	<b>Univ.QP Reference</b>	<b>Marks Allotted</b>

1.		List briefly about the Modernization techniques available in water management. ( april/may 2016) (K1)	CO 5	K1	( april/may 2016)	13
2.		What are the techniques available to reduce water losses?	CO 5	K1		13
3.		Explain about on-farm-development works?	CO 5	K2		13
4.		What is the need for optimization of water use?	CO 5	K1		13
5.		Explain detail in participatory irrigation management?	CO 5	K2	( april/may 2019)	13
6.		Explain economic aspects of irrigation?	CO 5	K2		13
7.		Explain irrigation scheduling ? (nov/dec 2017)	CO 5	K2	(nov/dec 2017)	13

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