

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name: Irrigation Engineering**Subject Code:** 4TE05IRE1**Branch:** B.Tech (Civil)**Semester:**5 **Date :**11/12/2015 **Time:** 2:30 To 5:30**Marks:** 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1	Attempt the following questions:	(14)
	a) Define irrigation.	01
	b) Define delta for crops.	01
	c) Define capacity factor.	01
	d) Define aquifer.	01
	e) Define aquicludes.	01
	f) Explain power canal and navigational canal.	01
	g) Define canal alignment and classify canal according to alignment.	01
	h) Explain the necessity of lining in canal.	01
	i) What is effect of waterlogging?	01
	j) Explain pitched bank in brief.	01
	k) Define hygroscopic water.	01
	l) Define culturable cultivated area.	01
	m) What is overlap allowance?	01
	n) Define evaporation losses in canal.	01

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
	a) Explain the main components of the canal cross section.	07
	b) Design an irrigation channel by Kennedy's theory to carry a discharge of 50 cumec. Take $N=0.0225$ and $m=1.05$. bed slope is 0.2 m per kilometer.	07
Q-3	Attempt all questions	(14)
	a) Derive the conditions for most-economic trapezoidal section.	07
	b) Design a lined concrete channel, trapezoidal in section to carry a discharge of 200 cumec at a slope of 30 cm/km. the manning's $N=0.017$, and side slopes are 1.5:1. The limiting velocity in the channel is 2m/s.	07
Q-4	Attempt all questions	(14)
	a) Explain drip irrigation method with its advantages & disadvantages.	06
	b) Which are factors affecting duty of water and how duty of water can improve?	06
	c) Explain the drainage behind lining and enlist the method used for drainage behind lining.	02



Q-5	Attempt all questions	(14)
	a) Find the delta of a crop if the duty is 1800 ha/cumec and the base period is 130 days. What would be the duty if the delta is increased by 20% and the base period reduced by 10 days.	06
	b) Enlist the methods to determine consumptive use of water and explain any one.	06
	c) Define Porosity.	02
Q-6	Attempt all questions	(14)
	a) Explain a various types of strainers used in tube well.	06
	b) Explain the term water logging in detail.	04
	c) What are advantages and disadvantages of lining of canal?	04
Q-7	Attempt all questions	(14)
	a) Define the land reclamation and give measures adopted for land reclamation.	05
	b) State the types of river training works and explain any one.	05
	c) Which drawings are used to prepare irrigation project explain in detail.	04
Q-8	Attempt all questions	(14)
	a) Explain the aquifers.	05
	b) Explain cement- concrete lining in detail.	05
	c) What are ill- effects of irrigation?	04

