Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY
Summer Examination-2019

Subject Name: Irrigation Engineering
Subject Code: 4TE05IRE1   **Branch: B.Tech (Civil)**
Semester: 5   **Date : 26/03/2019**   **Time : 10:30 To 01:30**   **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 Engineering.

b) Write the unit of Delta.

c) Give classification of irrigation canal.

d) Give some example for boarder irrigation (Crop name).

e) Write the relationship between available water and Readily available water .

f) Define inundation canal.

g) What is meant by canal lining?

h) Give two suggestions for preventing water logging.

i) What is meant by Groynes?

j) Write any one objective of river training work.

k) What do you understand by the term 'Multi-Purpose Project'?

l) Suggest suitable methods for reducing the water losses.

m) Give any one assumption of dupuit's theory.

n) State the different types of tube well used for irrigation.

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

Q-2   **Attempt all questions**   (14)
(a) What is the difference between sprinkler and drip irrigation?   06

(b) Write down the benefits and ill effects of irrigation.   06

(c)	Enlist the various method of irrigation.		**02**
Q-3		**Attempt all questions**	**(14)**
(a)	Explain the soil-water relationship with neat sketch.		**08**
(b)	Derive the relationship between Delta, Duty and Base period.		**06**
Q-4		**Attempt all questions**	**(14)**
(a)	An irrigation canal has gross commanded area of 65000 hectares out of which 86% cultivable area. The intensity of irrigation for kharif season and rabi season are 70% and 35% respectively. Find the discharge required at the head of the canal if the duty at its head is 820 hectare/cumec for kharif season and 1900 hectare/ cumec for rabi season.		**06**
(b)	Discuss briefly the planning process of irrigation project.		**06**
(c)	Define Aquifer.		**02**
Q-5		**Attempt all questions**	**(14)**
(a)	What are the factors that affect the alignment of a canal?		**06**
(b)	What are the limitations of Kennedy's theory?		**06**
(c)	What is meant by canal irrigation?		**02**
Q-6		**Attempt all questions**	**(14)**
(a)	What are the advantages and disadvantages of lining of canal?		**06**
(b)	Enumerate various types of lining. Explain any two method of lining		**08**
Q-7		**Attempt all questions**	**(14)**
(a)	Explain the layout of tile drain with neat sketch.		**07**
(b)	Explain the causes of water logging.		**07**
Q-8		**Attempt all questions**	**(14)**
(a)	Explain river training work with neat sketch.		**08**
(b)	Explain artificial cut-off with neat sketch.		**06**