Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name : Irrigation Water Management

Subject Code : 4TE08IWM1 **Branch: B.Tech (Civil)**

Semester : 8 **Date : 01/05/2018** **Time : 02:30 To 05:30** **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) What is meant by aqueduct?
b) Enlist the advantages of drip irrigation.
c) What is the pH value, if top soil of water logged field becomes more alkaline and infertile?
d) Under what circumstance Sub-irrigation is used?
e) State the condition for useful soil moisture for plant growth.
f) Give the full form of RS.
g) State which method of irrigation is suitable, if the land is an undulated one.
h) Define Leaching.
i) What is crop period?
j) Write another name of Trickling irrigation.
k) Define PIM.
l) List the steps to avoid water logging.
m) What are the qualities of surface water used for irrigation?
n) How to determine the field water efficiency?

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

Q-2 **Attempt all questions**

(a) Describe following terms (i) Field capacity (ii) Wilting point (iii) Hygroscopic water. **(06)**
(b) What is the influence of salt on the physical properties of soil? **(04)**
(c) What measures can be taken to prevent high water table? **(04)**

Q-3 **Attempt all questions**

(a) Write short note on "Reclamation of saline soils by leaching method". **(06)**

	(b)	Explain in detail following terms: (i) Water application efficiency (ii) Time of Irrigation	**(06)**
	(c)	What are infiltration indices?	**(02)**
Q-4		**Attempt all questions**	
	(a)	What is 'Water User Organization'? Explain merit and demerit of water user's organizations.	**(06)**
	(b)	Define water logging? Discuss causes and remedial measures of water logging.	**(06)**
	(c)	Give classification of Drainage in brief.	**(02)**
Q-5		**Attempt all questions**	
	(a)	Explain sub surface irrigation system.	**(06)**
	(b)	Define land grading. Enumerate various benefits and factors influencing land grading process.	**(08)**
Q-6		**Attempt all questions**	
	(a)	How would be the Geographical Information System (GIS) helpful in canal irrigation system?	**(05)**
	(b)	Classify the irrigation systems in India. Discuss it.	**(05)**
	(c)	Explain Furrow irrigation system.	**(04)**
Q-7		**Attempt all questions**	
	(a)	What are the specific advantages of sprinkler Irrigation system?	**(04)**
	(b)	Write a brief note on 'Emitters'.	**(03)**
	(c)	Determine capacity of sprinkler irrigation system to apply water at a rate of 1.25cm/hr. Two 186 meters long sprinkler lines are required. Sixteen sprinklers are placed at 12 m intervals on each line. The spacing of main line is 18 m.	**(07)**
Q-8		**Attempt all questions**	
	(a)	Discuss the problems encountered in drip irrigation systems. Explain in brief how fertilizers and chemicals are applied in drip irrigation system?	**(08)**
	(b)	The following data were obtained for determination of emission uniformity coefficient of a drip irrigation lateral: q_{min} = 37 l/s, q_{max} = 54 l/s, C_v = 0.075 and slope = 1.5 % determine emission uniformity co -efficient.	**(06)**