## C. U. SHAH UNIVERSITY **Summer Examination-2022**

## Subject Name: Water and Wastewater Engineering

Subject Code: 4TE0	6WWE1	Branch: B.Tech (Civil)		
Semester: 6	Date: 07/05/2022	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 the design period of a water supply project?	(1)
	<b>b</b> )	Define Domestic Water demand.	(1)
	<b>c</b> )	Enlist various factors affecting selection of pump.	(1)
	<b>d</b> )	What is sedimentation tank?	(1)
	<b>e</b> )	What do you understand by super chlorination?	(1)
	<b>f</b> )	What are the different method of De chlorination?	(1)
	<b>g</b> )	Which are the methods of distribution system?	(1)
	<b>h</b> )	Define Garbage.	(1)
	<b>i</b> )	Which are the various types of sewer?	(1)
	<b>j</b> )	What is non-scouring velocity?	(1)
	<b>k</b> )	Define Rubbish.	(1)
	l)	Which are various testing adopted in sewer lines?	(1)
	m)	Define Aeration	(1)
	n)	Define Sewage.	(1)

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

Q-2		Attempt all questions	(14)
	<b>(a)</b>	Enlist the population forecasting methods and describe Geometrical increase method and Incremental increase method	(7)
	<b>(b)</b>	Describe various factors affecting per capita demand of water.	(7)
Q-3		Attempt all questions	(14)
	(a)	Explain factors governing the location of an intake structure.	(7)
	<b>(b)</b>	Write short note on (i) Lake intake (ii) Canal intake	(7)
Q-4		Attempt all questions	(14)
-	(a)	Explain Various types of Aerators.	(7)
	<b>(b)</b>	What are the various methods if disinfection? What are the chemicals used as Disinfection?	(7)
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Q-5		Attempt all questions	(14)
-	(a)	Compare the slow sand filter and rapid sand filter (gravity type)	(7)
	<b>(b</b> )	Which are the methods of distribution system? Explain in brief.	(7)
Q-6		Attempt all questions	(14)
-	<b>(a)</b>	Draw the graph for variation in sewage flow and explain about it.	(7)
	<b>(b</b> )	Explain the estimation of design sanitary sewage.	(7)
Q-7		Attempt all questions	(14)
-	( <b>a</b> )	Enlist various sewer appurtenances and explain drop manhole and catch basins or catch pits.	(7)
	<b>(b)</b>	Explain with neat sketch oil and grease trap for wastewater treatment.	(7)
Q-8		Attempt all questions	(14)
-	a)	Explain the biological treatment or secondary treatment waste water.	(7)
	b)	Explain the construction of conventional trickling filters.	(7)

