## **C.U.SHAH UNIVERSITY** Winter Examination-2019

## Subject Name: Design of Hydraulic Structures

	Subject	Code: 4TE06DHS1	Branch: B.Tech (Civil)	
	Semester	r:6 Date: 12/09/2019	Time : 10:30 To 01:30	Marks : 70
	(2) I (3) I		· · ·	phibited.
Q-1		Attempt the following question	ns:	(14
	a)	Define the term 'hydraulic struc	ture'.	
	b)	Write the difference between da	m and reservoir.	
	c)	Write the component of gravity	dam.	
	d)	What is the role of cross regulat	or in a canal network?	
	e)	Enumerate the classification of o	dam based on the material.	
	f)	Write the name of the highest gr	avity dam in India.	
	g)	Define Seepage.		
	h)	Write the function of 'water stop	os' in gravity dam.	
	i)	Why the contraction joints are p	rovided in gravity dam?	
	j)	What is meant by canal fall?		
	k)	What is the function of canal eso	capes in dam?	
	l)	What is phreatic line for an earth	n dam?	
	m)	What do you understand by the	term 'Energy Dissipation?	
Atte	n) mpt any f	Abbreviate OMC. Four questions from Q-2 to Q-8		
Q-2	(a)	<b>Attempt all questions</b> Write a brief note on necessity a	and method of foundation treatment of	(14 dams. 07



	<b>(b)</b>	Explain the methods of reduction of uplift pressure with neat sketch.	07
Q-3	(a)	Attempt all questions Explain cracking of concrete during the construction of concrete gravity dams, and its remedial measures.	(14) 08
	(b)	What should be the maximum depth of elementary profile of a dam if the safe limit of stress on the masonry should not exceed 160 T/m <sup>2</sup> . Assume unit weight of masonry= $2.40$ .	06
Q-4		Attempt all questions	(14)
	<b>(a)</b>	Differentiate between low gravity dam and high gravity dam	06
	<b>(b)</b>	Briefly discuss the factors affecting the selection of site for a dam.	08
Q-5		Attempt all questions	(14)
	(a)	Describe the design feature of chute spillway.	07
	<b>(b)</b>	Enlist different forces that may act on a gravity dam. Indicate their magnitudes,	04
		directions and locations.	
	( <b>c</b> )	Why is it necessary to provide a fall in a canal?	03
Q-6		Attempt all questions	(14)
-	<b>(a)</b>	Discuss in brief the causes of failure of earthen dams.	07
	<b>(b)</b>	Distinguish between the Rolled-fill earth dam and Hydraulic-fill earth dam	04
	( <b>c</b> )	Give the classification fall.	03
Q-7		Attempt all questions	(14)
	(a)	Discuss step by step the analytical procedure that you will adopt for analyzing the stability of gravity dams.	07
	(b)	Explain "pore pressure" in earthen dam.	03
	(c)	Discuss the advantages of a siphon spillway.	04
Q-8		Attempt all questions	(14)
	<b>(a)</b>	Write a note on Glacis fall and Montague fall	08
	<b>(b)</b>	Explain the function of distributary head regulator with neat sketch.	06

