Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

B.E SEMESTER – VIII EXAMINATION – OCTOBER 2012 Subject code: 180601 Date: 27/10/2012 Subject Name: Design of Hydraulic Structures			
			Tim
Inst		tions:	
		Attempt any five questions.	
	2.	<u> </u>	
	٥.	Figures to the right indicate full marks.	
Q.1	(a)	(i) Discuss in detail factors affecting selection of dam type.	06
	(b)	(ii) What is HR & CR? Enlist functions of each?	04
	(b)	Explain the following terms: (i) Chute blocks (ii) Sills and Dentated Sills	02
Q.2	(a)	Describe with neat sketches various methods adopted for controlling seepage through the body of an embankment dam and through foundation.	07
	(b)	Explain different types of settlements in a rockfill dam. How they can be eliminated?	07
	(b)	OR Explain various conditions for which the stability of the side slopes of an earthen dam needs to be analyzed.	07
Q.3	(a)	(i) Write design features for good construction of embankment dam.	04
	(b)	(ii) Show forces acting on a gravity dam with sketch. Write design principles of sarda type fall.	03
Q.3	(a)	OR (i) Explain how construction operation is carried out in earthen dams?	04
Q.5	(a)	(ii) Classify concrete dams. Briefly discuss each type.	03
	(b)	Write design principles of glacis type fall.	07
Q.4	(a)	Discuss stepwise analytical procedure for analyzing the stability of gravity dam.	07
	(b)	Justify the statement 'Roller compacted concrete gravity dam is more economical than other dams.'  OR	07
Q.4	(a)	(i) Draw a neat sketch of elementary profile of dam.	03
	( )	(ii) Discuss the properties of concrete used in the construction of a gravity dam.	04
	(b)	Write a short note on 'cracking of concrete during the construction of gravity dam & its remedial measures'.	07
Q.5	(a)	Define spillway. What is the purpose to provide it? What are the essential requirements? Where the spillway is located?	07
	(b)	Differentiate Jump Height Curve (J.H.C.) and Tail Water Curve (T.W.C.). What are	07

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(ii) What is stilling basin? Why they are provided? Enlist the components of it.

the different possibilities of occurrence of J.H.C. and T.W.C.?

Discuss Bucket types of energy dissipators with neat sketches.

(i) Define 'Energy dissipators'. What are the needs to provide it?

Q.5

(a)

(b)

07

03

04