## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**Subject Name: Advanced Construction Technology** 

B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012 Subject code: 160601 Date: 02/01/2013

		02.30 pm - 05.00 pm Total Marks: 70	
In	1 2 3	ctions:  . Attempt any five questions.  2. Make suitable assumptions wherever necessary.  3. Figures to the right indicate full marks.  4. Draw neat sketch wherever required.	
Q.1	(a)	Why formwork is necessary? Explain the requirements of formwork. Which are the materials used for preparing formwork?	05
	(b) (c)	What is slip formwork? Explain their operation, uses, and advantages.  Briefly explain the process of electro-osmosis for dewatering the foundation trenches.	05 04
Q.2	(a) (b)	Briefly explain the methods of demolition.  Explain the effects of size, geometry, horizontal layout and vertical layout of building for its performance during an earthquake.  OR	07 07
	<b>(b)</b>	How do you reduce earthquake effect in important buildings?	07
Q.3	(a)	Explain briefly the meaning of the term pile foundation. Enumerate the situation demanding the use of pile foundations.	07
	<b>(b)</b>	Describe the method of pile load tests for the determination of its bearing capacity. <b>OR</b>	07
Q.3	(a)	Write short notes on the following:  (i) Franki piles  (ii) Pile cap and pile shoe	07
	<b>(b)</b>	Differentiate between the following:  (i) Load bearing piles and non-load bearing piles  (ii) Box piles and tube piles	07
Q.4	(a)	Define a caisson. Point out the factors to be considered while making a choice between cofferdam and caisson.	07
	<b>(b)</b>	What is a well foundation? What are its different types? Mention the cases where each one is suitable.	07
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Q.4	(a)	What is caisson sickness? How is it caused? What are the precautions to be taken to avoid caisson sickness?	07
Q.4	<b>(b)</b>	What are monoliths? Describe their method of construction and point out their advantages, disadvantages and uses.	07
Q.5	(a)	Define cofferdam. Explain the uses of a cofferdam. Enumerate the factor, which influence the choice of a particular type of cofferdam.	07
	<b>(b)</b>	What are the measures employed to prevent leakage in cofferdam?  OR	07
Q.5	(a)	Differentiate between the following:  (i) Earth dike and rock dike  (ii) Cellular cofferdam with diaphragm cell and cellular cofferdam with circular cells.	07
	<b>(b)</b>	Describe the method of constructing the single wall coffer dam.	07

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