

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012****Subject code: 160601****Date: 02/01/2013****Subject Name: Advanced Construction Technology****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. 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)** What is slip formwork? Explain their operation, uses, and advantages. **05**
- (c)** Briefly explain the process of electro-osmosis for dewatering the foundation trenches. **04**
- Q.2 (a)** Briefly explain the methods of demolition. **07**
- (b)** Explain the effects of size, geometry, horizontal layout and vertical layout of building for its performance during an earthquake. **07**
- OR**
- (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)** Describe the method of pile load tests for the determination of its bearing capacity. **07**
- OR**
- Q.3 (a)** Write short notes on the following: **07**
- (i) Franki piles
- (ii) Pile cap and pile shoe
- (b)** Differentiate between the following: **07**
- (i) Load bearing piles and non-load bearing piles
- (ii) Box piles and tube piles
- Q.4 (a)** Define a caisson. Point out the factors to be considered while making a choice between cofferdam and caisson. **07**
- (b)** What is a well foundation? What are its different types? Mention the cases where each one is suitable. **07**
- OR**
- 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)** 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)** What are the measures employed to prevent leakage in cofferdam? **07**
- OR**
- Q.5 (a)** Differentiate between the following: **07**
- (i) Earth dike and rock dike
- (ii) Cellular cofferdam with diaphragm cell and cellular cofferdam with circular cells.
- (b)** Describe the method of constructing the single wall coffer dam. **07**
