

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 160601**Date: 21/11/2011****Subject Name: Advanced Construction Technology****Time: 10.30 am -1.00 pm****Total marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is pile foundation? How pile foundations are used in different situations? Which factors will affect the selection of type of piles? **07**
- (b) Describe with neat sketches the method of construction of single wall cofferdam. **07**
- Q.2** (a) Define a caisson. Discuss various methods for floating of caissons? **07**
- (b) Describe the process of casting a precast concrete pile and draw a neat sketch of a typical precast concrete pile. **07**
- OR**
- (b) Which factors will you consider while deciding the pile spacing? Discuss the various causes of failures of piles. **07**
- Q.3** (a) Define a cofferdam. Explain the various factors that affect the selection of the type of a cofferdam. Write uses of cofferdams. **07**
- (b) What is pneumatic caisson? Draw neat sketch of pneumatic caisson and discuss the procedure for its sinking. **07**
- OR**
- Q.3** (a) What is caisson sickness or diseases? What are its causes? What are the precautions to be taken to avoid caisson sickness? **07**
- (b) Explain the design features of cofferdams. How will you prevent leakage in cofferdams? **07**
- Q.4** (a) Describe with neat sketch, the procedure of pumping from bored wells for dewatering. **07**
- (b) Why steel formwork is preferred? Explain with neat sketches, the formwork for R.C.C. column **07**
- OR**
- Q.4** (a) Explain the general principles for earthquake resistant buildings with neat sketches. **07**
- (b) Describe in brief, the various methods of demolition. **07**
- Q.5** Write short notes on (Any Four) **14**
- (i) Group of piles
 - (ii) Economics height of cofferdams.
 - (iii) Tilting of caissons.
 - (iv) Freezing process of the ground.
 - (v) Requirements of a good formwork.
 - (vi) Earthquake resistant construction.