



**SF - 6401**

**B. Arch - II (Sem. IV) Examination**

**May / June - 2011**

**ARC - 402 : Building Materials & Construction  
Technology - IV**

Time : 3 Hours]

[Total Marks : 100

**Instructions :**

(1)

नीचे दृशायेव निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
B. ARCH - 2 (SEM. 4)

Name of the Subject :  
ARC - 402 : BUILDING MATERIALS & CONSTRUCTION TECHNOLOGY - 4

Subject Code No. : 6 4 0 1 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

- (2) Figures to the right indicate full marks.  
(3) All questions have to be attempted in one answer sheet only.  
(4) Support your answers with neat and clean sketches wherever necessary.

- 1 (a) Answer in brief : 10
- (i) In which situations pile foundation is suitable ?  
(ii) What is a friction pile ?  
(iii) Give classification of pile on the basis of function or use.  
(iv) What are the different types of hammers used in pile driving ?  
(v) Define liquification of soil.
- (b) Fill in the blanks : 5
- (i) The cost of formwork plays a significant role in the cost of concrete, which varies from \_\_\_\_\_ of the cost of concrete for ordinary structures.  
(ii) \_\_\_\_\_ is a general term used in construction to describe the process of supporting a structure in order to prevent collapse so that construction can proceed.  
(iii) The primary difference between pneumatic shoring and hydraulic shoring is that pneumatic shoring uses \_\_\_\_\_ in place of \_\_\_\_\_.

- (iv) \_\_\_\_\_ does not create any obstruction on the ground and it is the most effective as it always provides the optimum level for working.
- (v) In the process of chemical consolidation the solution of \_\_\_\_\_ in water is injected through the pipes.
- (c) Answer in one or two lines : 5
- (i) Explain vibroflotation
  - (ii) Give application of suspended scaffolding
  - (iii) Define underpinning
  - (iv) Distinguish between pit and trench.
  - (v) Define shoring.
- 2** Attempt any **two** : **20**
- (i) Explain in detail how driving of pile is different than drilling (or boring) of pile.
  - (ii) Explain construction of Raymond pile in detail.
  - (iii) (a) Explain timber piles
  - (b) What is a pile cap ? Explain its significance.
- 3** Attempt any **two** : **20**
- (i) List all the types of retaining wall and explain counter fort in detail.
  - (ii) List all the temporary structure and differentiate between them.
  - (iii) (a) List all the methods of underpinning and explain pile method.
  - (b) What is shoring ? Enlist the circumstances under which the shoring is applicable and explain raking shores with all its journey details.
- 4** Write short notes on : (Any **four**) **20**
- (i) Crib Cofferdam
  - (ii) Diaphragm type cellular cofferdam
  - (iii) Pneumatic caissons
  - (iv) Stages of building construction
  - (v) Effect of water on soil.
- 5** Write short notes : **20**
- (i) Patented scaffolding
  - (ii) Pneumatic shores
  - (iii) Requirements of a good formwork
  - (iv) Retrofitting for columns
  - (v) Differentiate between single and double scaffolding
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