



**KD-6401**

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

**December - 2012**

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

Time : 3 Hours]

[Total Marks : 100

**Instructions :**

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. Arch. II (Sem. IV)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="ARC - 402 : Buil. Mater. &amp; Const. Tech. IV"/>	<input type="text"/>
Subject Code No. : <input type="text" value="6"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="1"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="Nil"/>	
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) Fill in the blanks:**

**(06)**

- \_\_\_\_\_ is the installation of temporary or permanent support to an existing foundation to provide either additional depth or an increase in bearing capacity.
- \_\_\_\_\_ is a process by which soils decreases in volume.
- \_\_\_\_\_ does not create any obstruction on the ground and it is the most effective as it always provides the optimum level for working.
- \_\_\_\_\_ is a technique in which soil slopes, excavations or retaining walls are reinforced by the insertion of relatively slender elements - normally steel reinforcing bars.
- The primary difference between pneumatic shoring and hydraulic shoring is that pneumatic shoring uses \_\_\_\_\_ in place of \_\_\_\_\_.
- \_\_\_\_\_ 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.

**(B) Answers in one line (Any Two) (04)**

1. Define Scaffolding
2. Explain continuous flight Auguring
3. Distinguish between pit and trench

**(C) Answer in brief: (10)**

1. Enlist the situations where pile foundation is suitable.
2. What are the different types of hammers used in pile driving?
3. What is a screw pile?
4. Explain splicing of timber pile.
5. What is the purpose of composite pile?

**2. Answer in Detail (Any Two) (20)**

1. Explain the construction of vibro expanded piles in detail.
2. Describe in detail the difference between displacement piles and replacement piles.
3. Explain the function of pile cap and pier cap through a typical section.

**3. Answer in Detail (Any Two) (20)**

1. What is a cofferdam? Enlist the main components of a typical cofferdam and elaborate the typical construction sequence/method.
2. Explain in detail: Open Caisson with dredging walls
3. (A) Give comparison between open caissons and box caissons.  
(B) Write a short note on rock-fill cofferdam.

**4. Answer in Detail (Any Two) (20)**

1. Explain the purpose of scaffolding and mention the different types of scaffolding? List and explain all the components of scaffolding in detail.
2. Distinguish between raking and two types flying shores with its applications.
3. List all the methods of underpinning and explain pile method.

**5 Write short notes (Any Four)**

**(20)**

1. Hydraulic shores
  2. Explain the failures of retaining walls
  3. Steel scaffolding
  4. Form Work for circular surfaces.
  5. Importance of soil in foundation design.
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