



UG-6401

B. Arch. II (Sem. IV) Examination

May/June - 2012

ARC - 402 : Building Materials and 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. & 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. 6
- (1) In the process of chemical consolidation _____ is injected through pipes during the withdrawal of pipes.
 - (2) Shoring is used to support the _____ in a building when a column or a wall is removed.
 - (3) The cost of formwork plays a significant role in the cost of concrete, which varies from _____ of the cost of concrete for ordinary structures.
 - (4) _____ is a method used to create concrete piles or wooden planks to support soil so that excavation can take place nearby.
 - (5) The primary difference between pneumatic shoring and hydraulic shoring is that pneumatic shoring uses _____ in place of _____.

- (6) _____ does not create any obstruction on the ground and it is the most effective as it always provides the optimum level for working.
- (b) Answer in one line. (any two) 4
- (1) Define underpinning.
 - (2) What is the main purpose of scaffolding ?
 - (3) Explain soil nailing.
- (c) Answer in brief. 10
- (1) What is the difference between crane mounted rig and rotary drilling rig ?
 - (2) Explain the function of : a) sheet piles ... b) compaction piles.
 - (3) In which situations pile foundations are suitable ?
 - (4) Draw an illustrated diagram explaining construction of simplex pile.
 - (5) Give classification of piles on the basis of its size.
- 2** Answer in detail. (any two) **20**
- (1) Explain the construction of bored pile in detail.
 - (2) Describe the difference between bored piles and driven piles, elaborating upon suitability and execution method in both cases.
 - (3) (a) Explain precast concrete piles with its advantages and disadvantages.
(b) Write a short note on timber piles.
- 3** Answer in detail. (any two) **20**
- (1) Define a cofferdam and mention its uses for various purposes. Explain earthen cofferdam in detail.
 - (2) Explain open caisson in detail.
 - (3) Draw an illustrated diagram of
 - Single walled cofferdam.
 - Pneumatic caisson.
- 4** Answer in detail. (any two) **20**
- (1) List all the methods of underpinning and explain miscellaneous methods in detail.

- (2) List and explain all the types of scaffolding according to its materials which are used for erecting a scaffolding.
- (3) What is shoring ? Enlist the circumstances under which the shoring is applicable and explain raking shores with all its joinery details.

5 Write short notes. (any four) **20**

- (1) Retrofitting for columns.
 - (2) Requirements of a good formwork.
 - (3) Trench shoring.
 - (4) Differentiate between single and double scaffolding.
 - (5) Explain methods of improving bearing capacity of soil.
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