



UG-7009
B. Arch. III (Sem. VI) Examination
May/June – 2012
Structure - VI
(Old Course)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

<p>नीचे दृशावेक निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : B. Arch. III (Sem. VI)</p> <p>Name of the Subject : Structure - VI (Old)</p> <p>Subject Code No. : 7 0 0 9 Section No. (1, 2,.....) : Nil</p>	<p>Seat No. : □ □ □ □ □ □</p> <p style="text-align: center;">Student's Signature</p>
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- (2) Assume suitable data & specifically mention it.
- (3) Figures to the right indicate total marks.
- (4) Use of nonprogrammable scientific calculator is permitted.
- (5) Draw detailed drawings to support your answer.
- (6) Use of IS-456 is permitted.

1 Attempt all questions. 20

- (1) What is prestressed concrete structure ?
- (2) Explain types of forces acting on cantilever type retaining wall.
- (3) What is hoop tension ? Explain with example.
- (4) What type of shape is used for bottom of overhead water tank, why ?

Attempt any two questions out of Q-2, Q-3 & Q-4

2 Calculate stresses at the stage of transfer & service for the 15 prestressed concrete simply supported beam of 20 m span having rectangular cross section of size 300 mm × 600 mm beam is subjected to imposed load of 20 KN/m. take 20% loss of prestress. Beam is subjected to prestress by a cable put at an ecentricity of 200 mm with 1000 KN prestressing force.

- 3 What is retaining wall ? For a cantilever type retaining wall show forces acting on various parts, its deformation due to forces & reinforcement detailing for the same. 15
- 4 For the typical Slab-Beam type raft foundation, explain the load transfer & behavior of members. Draw typical structural plan & section showing detailed reinforcement lay out. 15
- 5 (a) Draw detailing of on ground water tank with flexible joint. Show sectional plan & sectional elevation. 5
- (b) Explain the load transfer & behavior of on ground square water tank. Draw structural plan & required sections showing reinforcement detailing. Also explain which steel is resisting which action. 15
- Attempt any two questions out of Q-6, Q-7 & Q-8**
- 6 Design an RCC column for 1000 KN axial load. Take M 20 & Fe-415 grades of materials. Draw your designed details. 15
- 7 Design an RCC isolated sloped footing for 400mm×400mm size of column subjected to 600 KN load. Safe bearing capacity of soil is 200KN/m², take M20 & Fe-415 grades of materials. Draw sectional plan & section showing reinforcement detailing. 15
- 8 What is plate girder ? Draw sectional plan, elevation & sections showing various parts of plate girder. Explain the function of each parts. 15