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UG-7010

B. Arch. III (Sem. VI) Examination

May/June – 2012

Structural Design & Systems - VI

(New Course)

Time : **2** Hours] [Total Marks :

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. Arch. III (Sem. VI)**

Name of the Subject :

☛ **Structural Design & Systems - VI (New)**

☛Subject Code No. : **7 0 1 0** ☛Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Assume Suitable data & Specifically mention it.
(3) Figures on the right side indicate full marks.
(3) Use of Nonprogrammable scientific calculator is permitted.
(4) Use of IS-456, 2000 is permitted.

1 A doubly reinforced rectangular beam section of 360mm × 600mm depth is reinforced with 5-25 mm diameter bars at bottom and 2-25 mm diameter bars at top. Find out the moment of resistance of a beam. Use the grade of steel; Fe-415 and grade of concrete; M-20. **12**

2 Design a short RCC column subjected to 3000 KN axial load. Take M20 & Fe-415 grades of materials. Draw your designed details. **8**

OR

Explain when you will prefer Raft foundation. Draw a typical detailing for rcc slab - beam type raft showing load transfer, deformation & reinforcement detailing. Draw required sections for that. **8**

3 Design an RCC isolated sloped footing for 500mm × 500mm size of column, subjected to 1800 KN load. Safe Bearing capacity of soil is 200 KN/m^2, take M20 & Fe-415 grades of materials. Draw sectional plan & section showing reinforcement detailing. 8

4 Attempt any **four** out of following : **20**

(i) Explain the use of following in plate girder, draw required section. Load bearing stiffener, vertical stiffner.

(ii) It is required to build castellated girder for a building, subjected to continuous dynamic load. Give your comments about the decision.

(iii) Enlist various types of connection in steel structure & draw any two in detail.

(iv) Why we provide a specific shape of bottom for "intez" water tank.

(v) Explain load transfer, show deformation for on ground square water tank. Draw required sectional plan & sections at various levels showing reinforcement detailing.©