Total No. of Questions : 4]

SEAT No. : ____

P1333

[Total No. of Pages : 2

[5157] - 3001
S. Y. B. Arch. (Semester - III)
BUILDING TECHNOLOGY AND MATERIALS -III
(2015 Pattern)

Time : 3 Hours] ***[Maximum Marks : 70***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to Section I to be drawn on drawing sheet only.***
3) ***Answer to Section II to be written on answer sheet only.***
4) ***Draw neat labelled sketches wherever necessary.***
5) ***Assume suitable data, wherever necessary.***
6) ***Figures on right of each question indicate full marks.***

SECTION -I

Q1) A site office of size 4.0m×2.5m needs to be constructed in RCC frame structure, having a 1.2m wide projecting plinth in front along the longer side having steps to climb up to it. The office is divided equally in two cabins with 150 thk wall having two separate entry doors. Assume plinth as 600mm from the ground level. Draw following details to the suitable scale.

a) Draw key plan showing above features and Draw the framing plan showing plinth beams, columns and foundation. **[10]**

b) Draw detailed section through steps and plinth up to foundation. **[10]**

OR

A terrace door opening of size 2.4×2.1m needs to be provided with a fully-glazed folding door with TW frame. Draw the following to the scale of 1:10 showing all the required details.

a) Draw elevation, sectional elevation & plan, showing all necessary fittings and hardware used. Show door in open and closed state in plan. **[15]**

b) Draw any two fixing details of the hardware used. **[5]**

P.T.O

Q2) Draw neat labelled sketches on sheet for the following. (any three): **[15]**

a) Draw the section showing formwork for beam and slab junction.

b) Draw the detail of fixing chain-link fencing to the post.

c) Draw the fixing of MS wicket gate to the RCC post.

d) Draw the longitudinal section of a typical simply supported beam showing reinforcement details.

e) Draw detail section showing water proofing done for a terrace at the RW outlet.

f) Draw two types of piles used for non-cohesive soil condition for foundation.

SECTION -II

Q3) Answer any two with the help of sketches: **[20]**

a) Procedure of installing an Auger driven pile.

b) Working of sliding and folding door with the help of sketches.

c) Use of steel in RCC Beam.

d) Explain how the transfer of forces take place in RCC framed structure.

Q4) Write short notes on any three of the following. **[15]**

a) Materials used for water proofing. Explain applications of any one.

b) Slump test for concrete.

c) Raft foundation. State any two applications.

d) Roof covering materials based on climatic condition.

e) Significance of pressure bulb in soil investigation.

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