

Total No. of Questions : 4]

SEAT No. :

P2917

[Total No. of Pages : 2

[5062]-3001

S.Y. B.Arch.

BUILDING TECHNOLOGY AND MATERIALS - III

(End Semester) (2015 Pattern)

Time : 3 Hours]

[Max. 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) The security cabin of size 2.4×2.4 m needs to be constructed in RCC frame structure. The room has flat roof and plinth level of 450mm from the ground level. Draw following details to the scale of 1:10.

- a) Draw sectional elevation and sectional plan showing all necessary RCC elements. [10]
- b) Draw detailed section through plinth showing RCC footing and plinth beam. [10]

OR

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

- a) Draw elevation, section & plan through the glazed panel, showing all necessary fittings and hardware used. Show door in open and closed state in elevation and plan. [15]
- b) Draw fixing detail of the hardware used for sliding and folding. [5]

P.T.O.

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

- a) Draw the tools used for slump test of concrete.
- b) Draw the detail of fixing barbed wire fencing to the end angle post for compound wall.
- c) Draw the crosslink details of collapsible door.
- d) Draw the longitudinal section of a typical simply supported beam showing reinforcement details.
- e) Draw detail section showing water proofing done over a RCC weather shed.
- f) Draw the formwork for casting the RCC footing indicating different check points.

SECTION - II

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

- a) Explain the procedure of installing a bored cast-in-situ pile.
- b) Explain in detail the Shahabad tile water proofing method used for underground water tank.
- c) Explain the operation and working of MS Rolling shutter.
- d) What is a two-way slab? Explain the reinforcement details for same.

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

- a) What are the different materials used for damp proofing? Explain applications of any two.
- b) Explain the cube test for testing of concrete.
- c) What is raft foundation? Explain the conditions when raft foundation is used.
- d) Explain the precautions to be taken while casting of RCC structural elements.
- e) Significance of pressure bulb in soil investigation.

