

Total No. of Questions : 4]

SEAT No. :

P264

[Total No. of Pages : 2

[5257]-3001

S.Y. B.Arch. (Semester - III)

BUILDING TECHNOLOGY AND MATERIALS - III
(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) A shop of size 3m × 3m × 4.5m height needs to be constructed in RCC frame structure. It has flat roof and plinth level of 600mm 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 balcony door opening of size 2.6 × 2.4m 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) What tools are used for slump test of concrete.
- b) Explain the pressure bulb in soil investigation.
- c) Draw the details of a collapsible door.
- d) While casting RCC structural elements what precautions need to be taken?
- e) Draw the longitudinal section of a typical simply supported beam showing reinforcement details.
- f) What are the methods of damp proofing. Explain any two.

SECTION - II

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

- a) Explain the procedure of waterproofing a RCC chajja.
- 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.
- e) How is raft foundation done? Where is it applicable?

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

- a) Draw the formwork for casting the RCC footing indicating different check points.
- b) Explain the cube test for testing of concrete.
- c) What is strip foundation? Explain the conditions when strip foundation is used.
- d) Why is soil investigation undertaken?
- e) Draw detail section of a bored cast in situ pile.
- f) How is the fixing of barbed wire fencing to the end angle post for compound wall done?

