

April 2018

Time - Three hours
(Maximum Marks: 75)

(Sketch 'Z' to accompany)

- (N.B.:** (1) Answer all questions under PART - A and PART - B in the drawing sheet supplied.
(2) The sketches under PART - A should be drawn using pencil and drawing instruments, not necessarily to scale.
(3) Any data, not given may be assumed suitably and should be indicated in the drawing.]

PART - A
(15 marks)

- I Answer the following: 2 x 3 = 6
- 1) What are all the functions of a local authority?
 - 2) Write notes on: General requirement of Industrial structures.
- II Draw the elevation of a steel roof truss for the following details: 1 x 9 = 9
- The clear span between walls is 8500mm.
The height of wall is 4000mm from finished floor level.
The apex of the roof is at height of 2000mm.
The truss is made up of principal rafters, bottom tie chords using ISA 75 x 75 x 6 and web members using ISA 50 x 50 x 6.
Over this truss purlins made of ISMC 75 x 40 are provided.
AC sheets are provided over this arrangement.
Eaves projection is of 600mm on either side of truss.
Provide suitable cleats and other plates.

PART - B
(60 marks)

- III The sketch shows the line plan of a house with RCC roof. The dimensions noted therein indicate the clear dimensions between the walls inside.
Draw to a suitable scale the following views:
- | | |
|-------------------------------|------------|
| (a) Plan of the building | - 20 Marks |
| (b) Sectional elevation on AB | - 25 Marks |
| (c) Front elevation | - 15 Marks |
1. **Foundation:**
The foundation for all main walls will be cement concrete 1:5:10 mixes, 1000 wide and 300 thick laid at 1200 below ground level. The first masonry footing will be in random rubble masonry in cement mortar 1:5, the size being 800x450 and the second masonry footing will be in random rubble masonry in cement mortar 1:5, the size being 600x450 for all main walls.

[Turn over....

2. **Basement:**

The basement will be in random rubble masonry cement mortar 1:6, 450 wide and 600 high above ground level for all main walls and is filled with clean sand to a depth of 450. A damp proof course in cement mortar 1:3, 20 thick will be provided for all walls at basement level.

3. **Super structures:**

All walls will be in brick work in cement mortar 1:5, using first class bricks, 200 thick. The height of main walls will be 3000 above floor level. The partition walls in between bath and bed-II will be 100 thick in brickwork in cement mortar 1:5 using country bricks. All the walls including basement will be plastered smooth with cement mortar 1:4 externally and 1:6 internally for 12.5 thick. Parapet walls 200 thick and 600 height will be provided all-round.

4. **Roofing:**

The roofing will be of RCC 1:1.5:3 mix, 100 thick flat slabs over the rooms and portico. A weathering course, 75 thick consists of two course of flat tiles set in the cement mortar 1:3 mixed with crude oil will be provided over the slab.

5. **Joineries:**

Doors, Windows and Ventilators etc.

- D1 - Panelled door : 1000 x 2100
- D2 - Panelled door : 900 x 2100
- D3 - Panelled door : 750 x 2100
- O - Opening : 900 x 2100
- W1 - Panelled window : 1200 x 1400
- W2 - Panelled window : 1500 x 1400
- V - Ventilator glazed : 600 x 450

6. **Lintel:**

All internal wall openings will be provided with RCC lintel, 1:1.5:3 mix; 150 thick and all external wall openings will be provided with RCC lintel-cum sunshade, 1:1.5:3 mix, projection being 450 wide and 80 thick at support and 50 thick at free end.

7. **Flooring:**

The flooring will be in cement concrete 1:4:8, 100 thick and finished with vitrified tiles of 20 thick over cement mortar 1:3 bed of 30 thick for all the portions.

8. **Steps:**

Steps will be in brickwork in cement mortar 1:5 laid on 800 x 150 cement concrete 1:4:8 footing. Rise 150, Tread 300.

Note:

- 1. Assume any other date if necessary and indicate the same in the drawing clearly.
- 2. All dimensions indicated are in millimetres.

Sketch 'Z' to accompany QP Code: 625

