



c09-c-307

3223

**BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2014
DCE—THIRD SEMESTER EXAMINATION**

CIVIL ENGINEERING DRAWING—I

Time : 3 hours]

[Total Marks : 60

PART—A

4×5=20

Instructions : (1) Answer **all** questions.

(2) Each question carries **four** marks.

(3) Any missing data may be assumed suitably.

1. Draw the conventional signs for the following materials in sectional elevation :

(a) Stone

(b) Sheet metal

(c) Revolving door

(d) Plaster

2. Draw the line diagram of a king post truss and label the following :

(a) King post

(b) Ridge

(c) Purlin

(d) Tie beam

- * 3. Draw the site plan of a proposed building to be constructed in plot no. 12, boundaries of the plot are north side plot no. 19, east side plot no. 13, west side plot no. 11, south facing 10 m wide road in Gandhinagar, 3rd line.

The compound wall is 200 mm thick. The plot is 15.3 m wide, 17.7 m in length.

Open spaces are front side is 5.0 m, rear side is 3.0 m, east side is 3.5 m, and west side is 2.5 m.

4. Draw the sectional elevation of lift shaft showing topmost floor and machine room along with lift car.
5. Draw the foundation marking plan of a single-room building of 3.6 m×4.5 m. Superstructure wall thickness is 300 mm and the width of foundation is 1000 mm.

PART—B

25+15=40

Instructions : (1) Answer **all** questions.

(2) Any missing data may be assumed suitably.

(3) The drawing must be to the scale.

6. From the given line diagram of a residential building, develop fully dimensioned plan, section along *ABCD* and front elevation. Draw these views to a scale of 1 : 50 with the following specifications :

25

Specifications :

(i) Foundations : All the main walls 200 mm thick in superstructure are taken to a depth of 900 mm. The bottom CC bed (1 : 4 : 8) is 850 mm wide and 300 mm deep. The remaining depth of 600 mm is of stone masonry footing 450 mm thick with equal offset on either side.

(ii) Basement : Basement is also of stone masonry 300 mm thick and height of basement is 450 mm.

(iii) Superstructure : All the walls except in the toilet are of brick masonry and 200 mm thick. The partition walls in toilets are 100 mm thick brick masonry walls constructed from plinth. All the walls are taken to a height of 3200 mm from floor level to bottom of RCC roof slab.

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- (iv) Sit-out : Entrance of the building is provided with a sit-out in the form of a quadrant of a circle with a radius of 1450 mm. Similar shape of RCC beam 200 mm×250 mm is provided with its bottom at 2100 mm from floor level. The remaining portion above the curved beam and bottom of RCC roof consists of brick masonry wall 200 mm thick.
- (v) Steps : Steps in the same shape as that of sit-out are provided with brick masonry with tread = 300 mm and rise = 150 mm. Rear side steps with the same tread and rise are of spread-type having length of top step equal to 1000 mm. All these steps have a CC bed foundation 150 mm thick below GL.
- (vi) Roofing : Roofing consists of RCC (1:2:4) slab 120 mm thick and finished with 12 mm thick weatherproof course.
- (vii) Parapet : Brick masonry parapet 100 mm thick and 700 mm height is constructed around the building and is provided with a coping projecting 50 mm beyond the face of the parapet wall.
- (viii) RCC lintels and sunshades : 120 mm thick RCC (1:2:4) lintels are provided on all openings with a bearing of 150 mm on either side. RCC sunshades extend from bottom of these lintels provided over exterior openings by 600 mm. These are 90 mm thick at the face of the wall and 75 mm thick at free end.
- (ix) The sunshade at the entrance is provided extending from the curved beam provided over the sit-out by 600 mm as shown in line diagram.
- (x) Flooring : Flooring consists of mosaic tiled floor laid over 100 mm CC (1:4:8) bed. The remaining depth of basement is filled with sand and well-compacted.
- (xi) Doors, windows, ventilators, almirahs and cupboards : These shall be provided as shown in the line diagram and as per the schedule given.

Note : All dimensions are in mm.

Schedule of doors and windows :

Designation	Numbering	Modular size (in mm)	Specifications
10 DT 21	D ₂ NO	1000×2100	Fully panelled door
10 DS 20	D ₁ 4 NO	1000×2000	Flush door
9 DS 18	D ₂ 2 NO	900×1800	Flush door
15 WQ 12	W ₂ NO	1500×1200	Glazed window
10 WT 12	W ₁ 4 NO	1000×1200	Glazed window
10 V 6	V ₂ NO	1000×600	Glazed ventilator

A = Almira = 1500 mm×1200 mm
 CB = Cupboard = 2500 mm×2000 mm

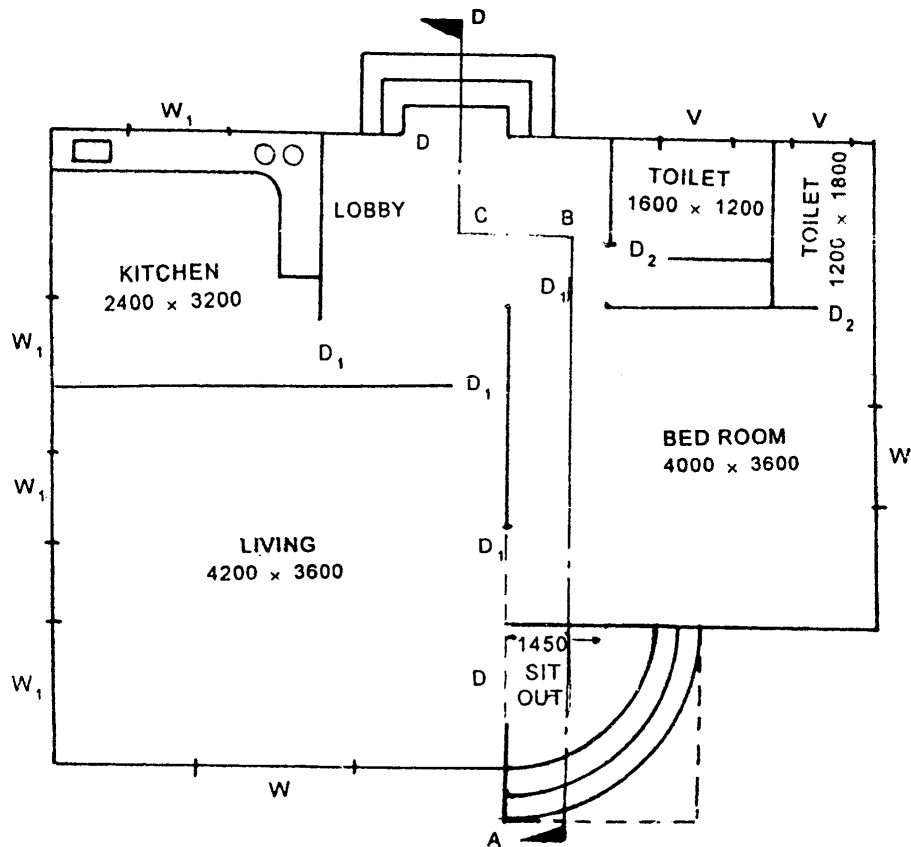


FIG. LINE DIAGRAM

7. Draw the line diagram showing the functional requirements of a rural hospital for 10 beds capacity.

15
