ACHARYA INSTITUTE OF TECHNOLOGY
Bangalore - 560090

USN | | | | | | | | | | |

10CV46

# Fourth Semester B.E. Degree Examination, Dec.2016/Jan.2017

## Building Planning and Drawing

Time: 4 hrs. Max. Marks:100

**Note: 1.** ***Part – A is compulsory. Answer any TWO questions from Part – B.***
**2.** ***Missing data may be assumed suitably wherever necessary.***



### PART – A

1 It is proposed to construct a residential building as shown in Fig.Q1. Draw to a suitable scale.

i) Plan at sill level **(25 Marks)**
ii) Elevation **(15 Marks)**
iii) Section 'A-A' giving maximum details. **(15 Marks)**
iv) Prepare schedule of openings **(05 Marks)**

The details are as given below:

- All load bearing walls are 230 mm thick in C.M. 1:6.
- Partition walls are 130 mm thick.
- 3 courses of S.S.M foundation of 200 mm thick in C.M. 1:6 with concrete base of 200 mm thick.
- Depth foundation is 1200 mm below G.L.
- Height of plinth above G.L 450 mm.
- Granite flooring of 25 mm thickness over a cement concrete layer of 100 mm thick.
- Height of ceiling is 3000 mm.
- Lintel level 2100 mm from floor level.
- RCC slab of thickness 120 mm made of M20 grade concrete.
- Provide parapet wall of 130 mm thick and 450 mm height.
- Assume suitable dimensions for lintel and chajja.

Details of openings are given below:
Doors: $D_1$ = 1000 mm × 2100 mm ; $D_2$ = 750 mm × 2100 mm
Windows: W = 1500mm × 1200mm ; $W_1$ = 1200mm × 1200mm ; $W_2$ = 1200mm × 750mm
Ventilator: V = 750 mm × 450 mm
Note: Walls are of BBM. Line diagram is not to scale.



### PART – B

2 Design a suitable staircase for a public building with stair hall dimensions 4.50 m × 5.25 m with floor to floor height of 4.05 m. Draw to a suitable scale (open well staircase).

i) Plan **(10 Marks)**
ii) Sectional elevation **(10 Marks)**

Take rise = 150 mm and tread = 250 mm

3 Draw to a scale of 1:10 the following views of a double shuttered, six paneled door for an opening of 1200 mm × 2100 mm.

i) Elevation **(10 Marks)**
ii) Vertical section **(06 Marks)**
iii) Horizontal section **(04 Marks)**

Give all the details and dimensions.

4 Prepare a bubble diagram for a primary school building and also draw the single line diagram based on the bubble line diagram to a suitable scale. The strength of students is 200. The requirements are as follows:

i) Class room for 40 students each
ii) Head Master's room
iii) Office room
iv) Staff room
v) Sports room
vi) Laboratory – 2 Nos
vii) Library
viii) Preparation room for laboratory – 1 No
ix) Toilet for girls and boys separately

**(20 Marks)**

5 Prepare water supply and sanitary layout for a residential building shown in Fig.Q5 with suitable notations. Adopt a scale of 1:100. **(20 Marks)**

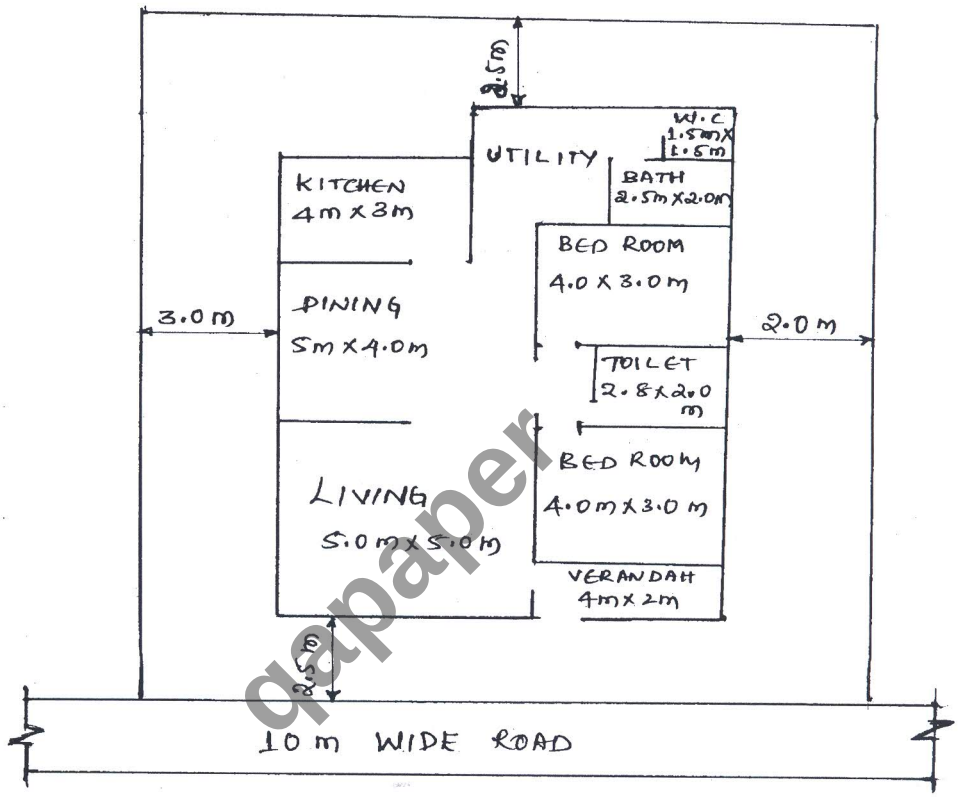


Fig.Q5



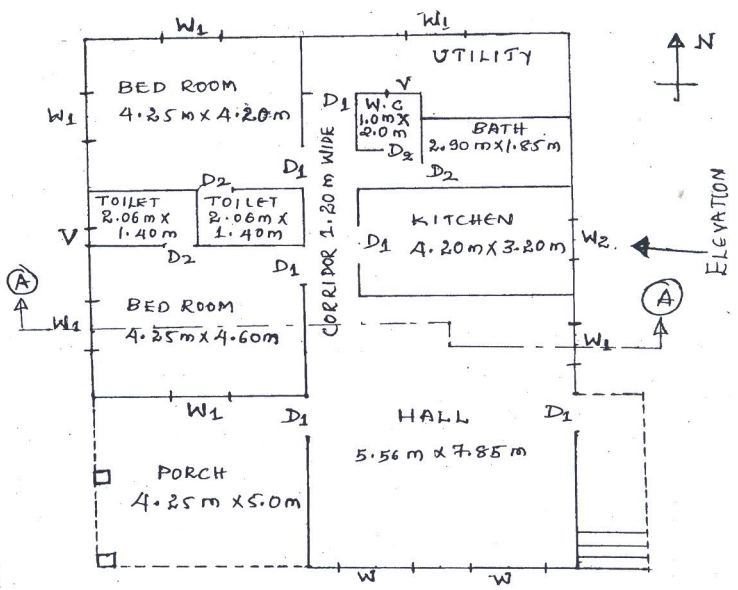


Fig.Q1

Note : All Dimensions are in 'm'

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