



## Building Design & Drawing (114114)

P. Pages : 5

Time : Four Hours

Max. Marks : 80

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. All questions are compulsory. Attempt **any two** questions from each unit.
5. Answer to the first question should be written on ruled answer book and questions two to five on drawing sheets.
6. Neat diagram must be drawn wherever necessary.
7. Figures to the right indicate full marks.
8. Assume additional suitable data if necessary.

### UNIT - I

1. What are the principles of planning of residential building explain any two with sketches. **8**
2. Explain **any two**. **8**
  - i) Air conditioning system
  - ii) Fire protection of building
  - iii) Building Bye - Laws.
3. Compare one pipe system and two pipe system of plumbing with sketches. **8**

### UNIT - II

- Draw working plans of a single Storeyed Residential building with the given line plan Fig. (i) and data as given below : **8**
- Foundation = 1.6m deep below G. L, Load bearing structure  
Plinth Height = 500 mm  
Super structure = Bottom of R.C.C. Slab above plinth = 3.60m  
Parapet = 500mm High, Brick masonry 300mm thick in cm 1:6  
Doors = standard size as per I.S. Code.  
Windows = e15 % of room area  
Assume suitable any other relevant data.  
Draw to scale 1:75 or suitable.

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|----|-----------------------------|---|
| 4. | Detailed ground floor plan. | 8 |
| 5. | Front Elevation.            | 8 |
| 6. | Section.                    | 8 |

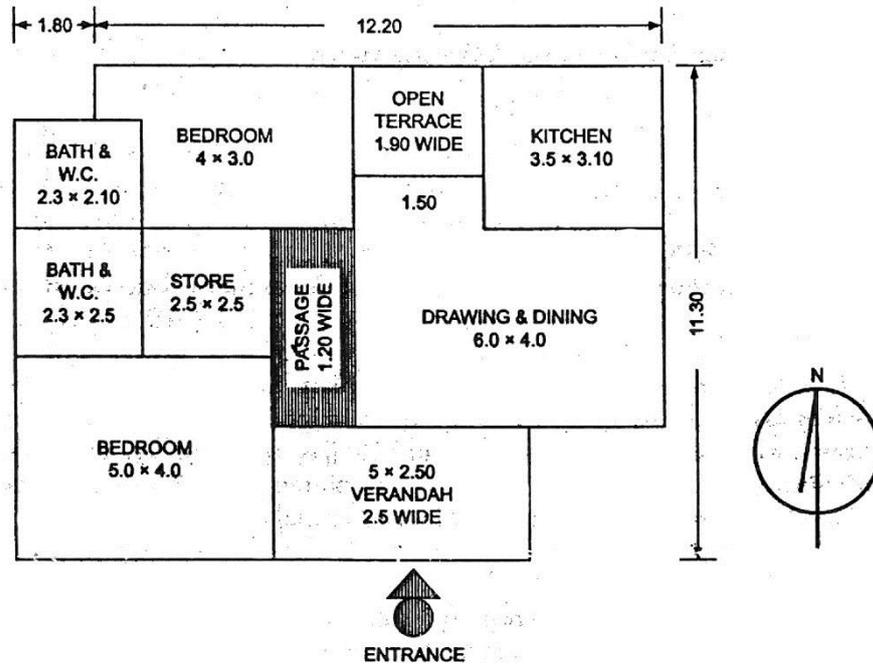


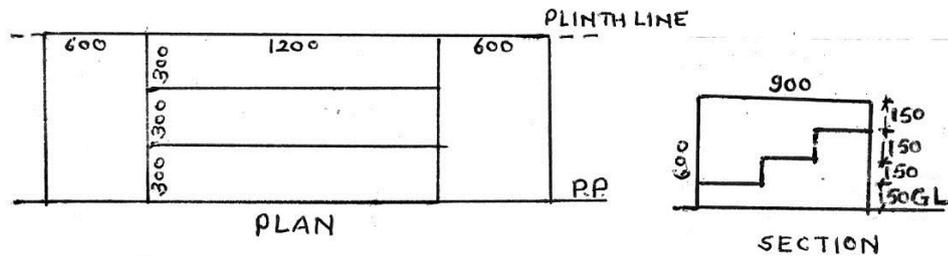
Fig. 1 LINE PLAN ALL DIM. IN M.

### UNIT - III

- |    |  |   |
|----|--|---|
| 7. | Draw a typical floor plan of a flat (three room kitchen) in a apartment with following data.<br>Habitable rooms area = $9.5 \text{ m}^2$ min <sup>m</sup> for one room.<br>Two room = $7.5 \text{ m}^2$ for other room (with minimum width of 2.4m)<br>Kitchen = $5.5 \text{ m}^2$ (with minimum width of kitchen 1.8m)<br>Bath room = $1.5 \text{ m} \times 1.2 \text{ m}$ or $1.8 \text{ m}^2$ area<br>W. C. = $1.1 \text{ m}^2$ . | 8 |
|----|--|---|

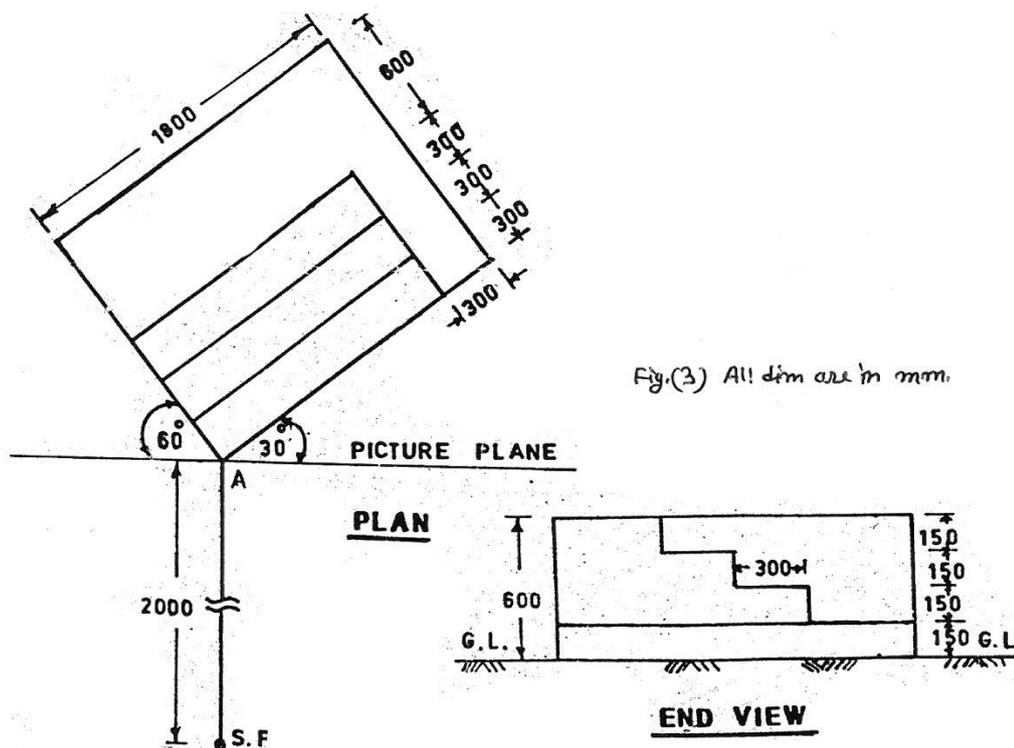
8. Fig (2) shows a plan of entrance steps. Front side of which is touching the picture plane. The observer is standing at 73H (Height of object). Assume suitable eye level above G. L. Draw one point perspective view to a scale of 1:20 or suitable. Retain all construction lines.

8



9. Fig (3) shows a plan of entrance steps one side of which is inclined at an angle of  $30^\circ$  to the picture plane and touches the same at 'A'. The observer is standing at a distance of 2m along the central visual ray. Assuming eye level at 1.5m above G. L. Draw the two points perspective view to a scale of 1:20. Retain all construction lines.

8



## UNIT - IV

- 10.** Draw to some convenient scale, a line plan of a primary health center constructed in rural area with following given data. **8**
- i) Entrance and waiting space = 3 to 6m wide
  - ii) Doctor's room = 10 to 12 m<sup>2</sup>
  - iii) Examination room = 10 to 12 m<sup>2</sup>
  - iv) Operation theatre = 20 to 25 m<sup>2</sup>
  - v) Wards = 8 to 10 m<sup>2</sup> per bed.
  - vi) Medical store = 10 to 12m<sup>2</sup>
  - vii) Laboratory = 15 m<sup>2</sup>
  - viii) Sanitary block.
- 11.** Draw line plan of a library building with following given data to some convenient scale. **8**
- i) Entrance & moving area = 1.8 m wide (min<sup>m</sup>)
  - ii) Librarian's room = 9m<sup>2</sup> (minimum)
  - iii) Sections in library
    - Reference books = 20 to 60 m<sup>2</sup>
    - Book section = 20 to 60m<sup>2</sup>
    - Magazines & Newspapers = 3 m wide (minimum)
    - Stacking space = 20m<sup>2</sup>.
  - iv) Circulation
  - v) Parking space & cycle stand
  - vi) Sanitary block.
- 12.** Draw line plan of a hostel building with following given data to suitable scale. **8**
- i) Entrance = 3m wide
  - ii) Rooms : single = 3mx3.1 m Double = 3.5 m x 4 m
  - iii) Circulation
  - iv) Recreation Hall = 2 to 3m<sup>2</sup>/head
  - v) Diving Hall= 3 to 4m<sup>2</sup>/head
  - vi) Kitchen = 2.75 m x 3m
  - vii) Pantry = 2 m x 3m
  - viii) Store = 2.75 m x 3m
  - ix) Public telephone
  - x) Sanitary block.

**UNIT - V**

The various units in a bank with their approximate sizes are as follows :

Entrances cum waiting space =  $30\text{m}^2$

Counters  $4\text{m}^2$  with width 0.4 to 0.8m

Working area for other staff =  $20\text{m}^2$

Branch managers cabin =  $5\text{m}^2$

Stare room =  $12\text{m}^2$

Safe deposit lockers cum cash room =  $15\text{m}^2$

Water and Toilet room =  $7.5\text{m}^2$

- |            |   |          |
|------------|---|----------|
| <b>13.</b> | Draw plan of bank building with above given data with suitable scale showing doors and windows.   | <b>8</b> |
| <b>14.</b> | Draw elevation of above drawn plan of Bank building with suitable heights.                        | <b>8</b> |
| <b>15.</b> | Prepare schedule of Doors and windows in above drawn Bank building and suitable site plan for it. | <b>8</b> |

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