



WINTER- 18 EXAMINATION

Subject Name: BUILDING DRAWING

Model Answer

Subject Code:

17309

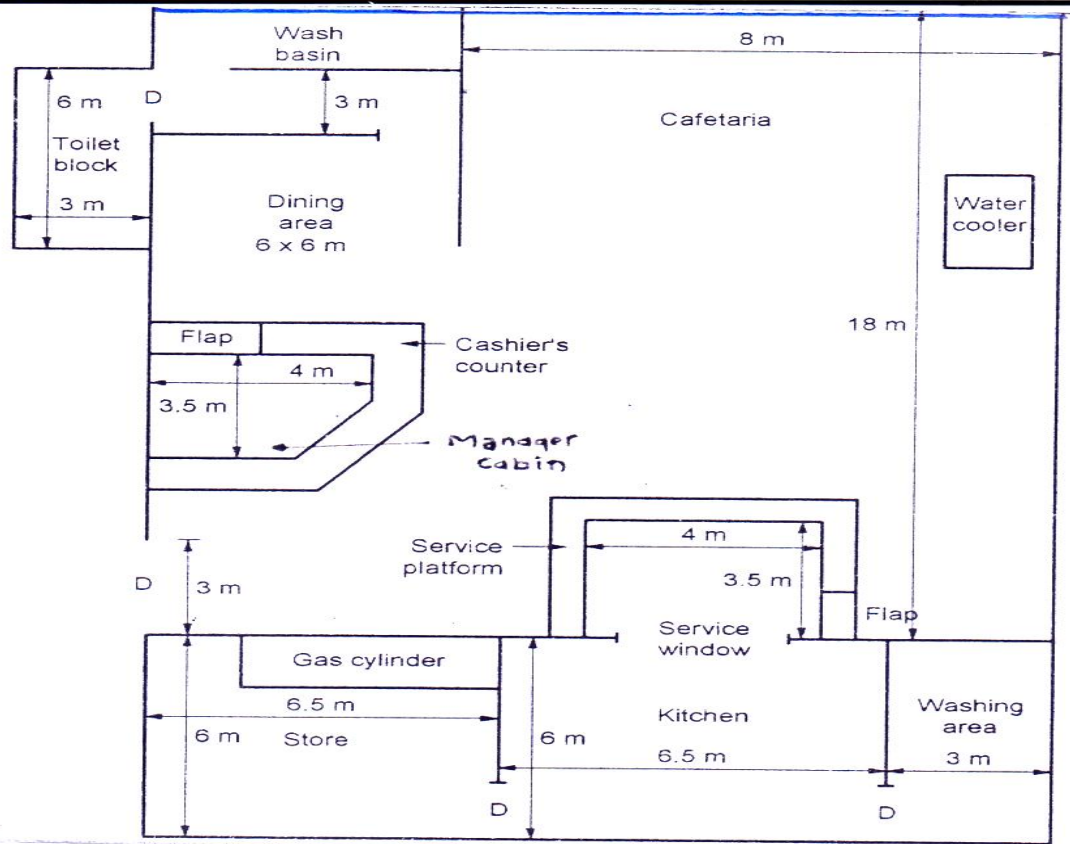
**Important Instructions to examiners:**

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
- 6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.

Q. No.	Sub Q. N.	Answers	Marking Scheme															
1.	a) (i)  Ans	<p><b>Attempt any THREE of the following:</b>  <b>Draw graphical symbols for,</b>  <b>1) Stone masonry 2) Brick masonry 3) Single shutter double swing door 4) Glass</b></p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Item</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>TIMBER</td> <td></td> </tr> <tr> <td>2.</td> <td>CONCRETE</td> <td></td> </tr> <tr> <td>3.</td> <td>GLASS</td> <td> OR </td> </tr> <tr> <td>4.</td> <td>STIRRUPS</td> <td></td> </tr> </tbody> </table>	Sr. No.	Item	Symbol	1.	TIMBER		2.	CONCRETE		3.	GLASS	OR	4.	STIRRUPS		<p><b>(12)</b></p> <p>04 Marks (01 M for each)</p>
Sr. No.	Item	Symbol																
1.	TIMBER																	
2.	CONCRETE																	
3.	GLASS	OR																
4.	STIRRUPS																	



1.	a)(ii)  Ans	<p>Draw any four types of lines used in civil engineering drawing.</p> <p>1) _____ CONTINUOUS THICK LINE</p> <p>2) _____ CONTINUOUS THIN LINE</p> <p>3) - - - - - DASHED LINE</p> <p>4) - - - - - CHAIN LINE / CENTER LINE</p> <p>5) - - - - - SECTION LINE OR CUTTING PLANE LINE</p> <p style="text-align: center;">/-----/</p> <p style="text-align: center;">OR</p> <p>6) •-----• DIMENSION LINE</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">←-----→</p> <p>7) _____ LONG BREAK LINE</p>	(4 M)            Any four (01 M for each)
1.	a)(iii) Ans	<p>Define “Grouping” how you will use it for residential building.</p> <p><b>Grouping:</b> Grouping consist in. arranging the layout in typical fashion so that all the rooms are placed in proper correlation of their function in due proximity with each other .It is the disposition of various Rooms in new of their relative and co-ordination, between them. In residential buildings.</p> <p>1) Dining room should be closer to kitchen</p> <p>2. Kitchen should be away from living room to avoid smell and smoke.</p>	(4 M)   02 M  02 M
1.	a)(iv) Ans	<p>Give the minimum heights for,</p> <p>1) window sill    2) plinth    3) parapet wall    4) Head room</p> <p>1) Window Sill :- 0.6 m</p> <p>2) Plinth : 0.45 M</p> <p>3) Parapet Wall :- minimum heights 1.05 m,max.1.2 m.</p> <p>4) Head Room:- Minimum Head room in a passage under the landing – 2.2 m.</p>	04 M (01 for each)
1.	b) Ans	<p><b>Draw to suitable scale line plan of a “canteen “containing various units such as managers cabin, store, kitchen cashier washing sanitary unit etc.</b></p>	(08)



Correct line plan 03 – marks  
labelling-02 marks  
dimension 02–marks,  
neatness 01 - mark

2.

Figure no. 1 shows line plan of a residential building. Draw to scale of 1 :50 the following views. Show all dimensions.

views, show all dimensions and label the parts. (Refer Page No.3)

- Developed plan
- Front elevation
- Section AB

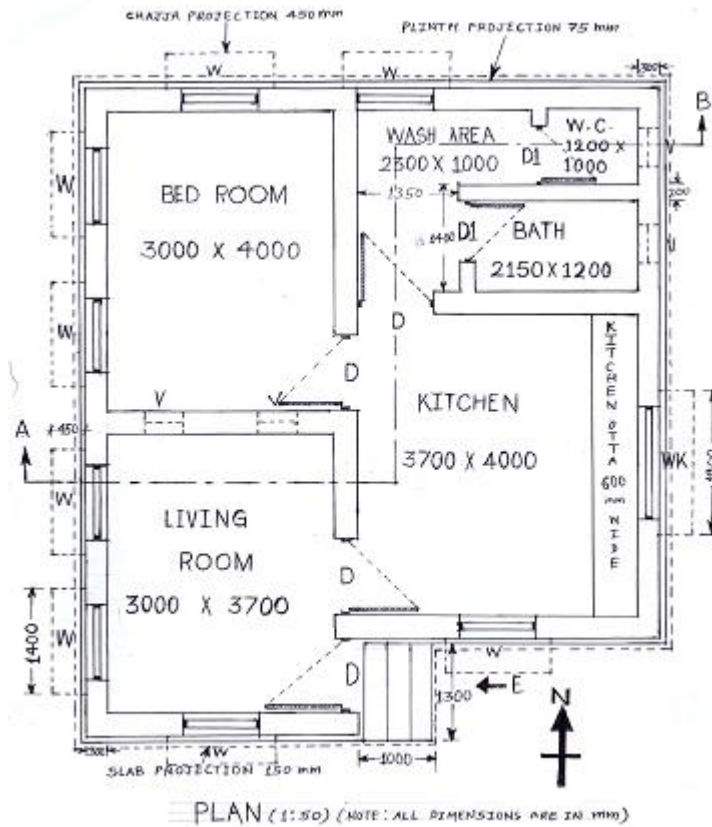
Use following construction notes.

- Hard strata is available at 900 mm below G.L.
- Concrete bed P.C.C. (1:4:8) 150 mm thick and 900 mm width.
- Foundation masonry 600 mm in width in C.M. (1:6)
- U.C.R. masonry in plinth, width 450 mm and height 600 mm above G.L. in C.M. (1:6)
- Super structure consists of B.B. masonry in C.M. (1:6) 300 mm thick mains walls and 200 mm thick partition walls of sanitary block.
- Ceiling height is 3000 mm
- R.C.C. slab (1:2:4) thickness 120 mm
- Dado upto 1200 mm height is provided with glazed tiles for bath and W.C. walls.

a) Developed plan :-

Ans

(12)  
(08)  
(08)

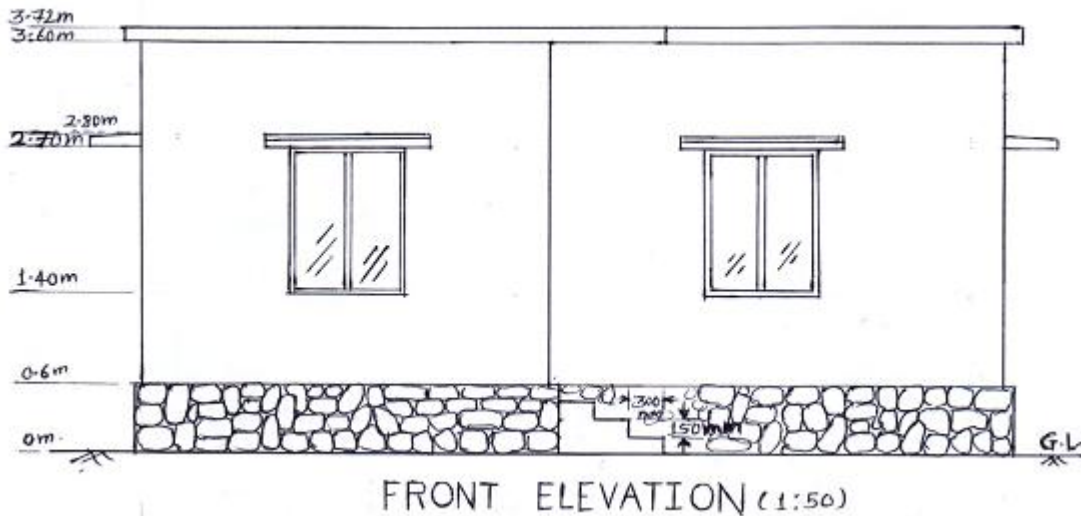


*(Note : Provision of Doors, Windows and ventilators and its size may vary with students knowledge, so marks will be given by considering this.)*

developed plan 04 marks  
labeling- 02marks,  
dimensions 02 marks,  
doors and windows 02 marks  
neatness 01 mark  
Scale 01 mark

2.

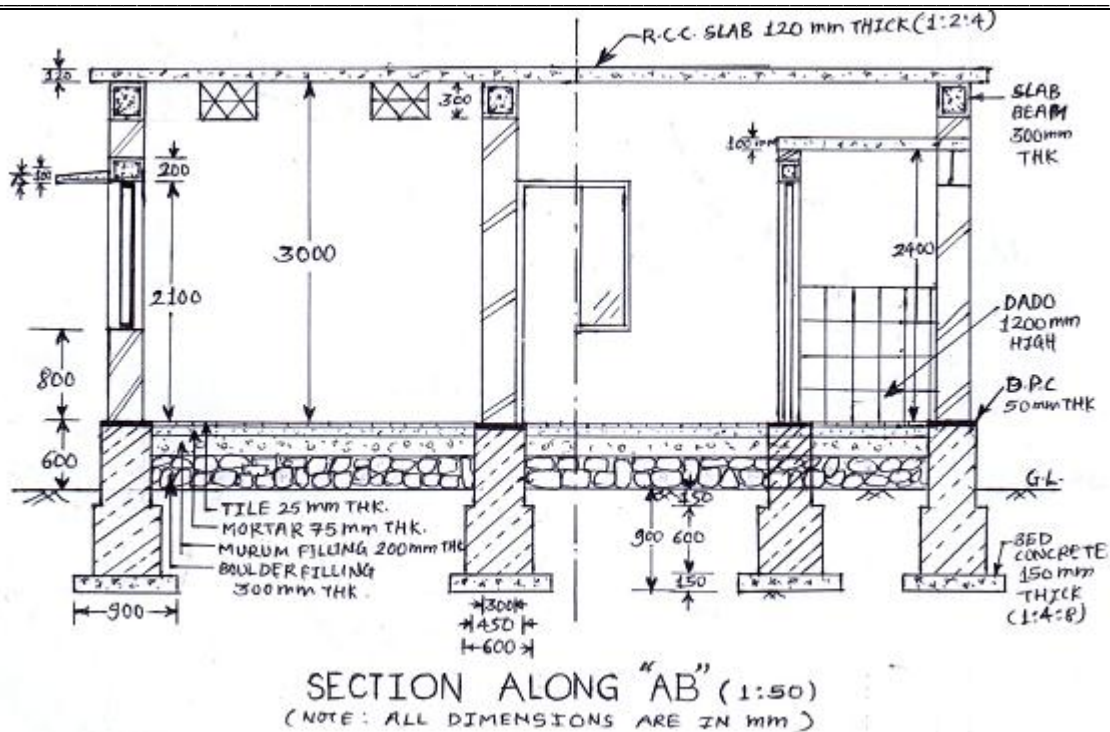
**b) Front elevation :-**



Correct elevation 06 marks,  
Neatness 01 marks)  
Scale 01 mark

2.

**c) Section along AB :-**



*(Note : Details in section will depend on the detailed plan as drawn in Q.2 (a) )*

Correct section 04 marks  
all dimension 01 marks,  
material symbol 02marks  
Scale 01 mark

3.

a) **Attempt any THREE of the following:**  
Prepare schedule of openings and area statement for the building shown in Figure No. 1 Q. No. 2

Ans

**(i) Schedule of openings :-**

Sr. No.	Type of Opening	Symbol	Nos.	Clear Size	Frame Size	Remark
1	Doors	D	4	1.0 m x 2.1 m	7.5cm x 5.0cm	T. W. Fully paneled Single shutter Door
		D1	2	0.8 m x 2.0 m	7.5cm x 5.0cm	Fully paneled Door T. W. Fully paneled Single shutter Door
2	Windows	W	8	2.0 m x 1.3 m	7.5cm x 5.0cm	Fully Glazed Window
		WK	1	1.5 m x 1.0 m	7.5cm x 5.0cm	Fully Glazed Window
3	Ventilators	V	4	0.5 m x 0.3 m	--	Steel Ventilator

*(Note : The correct entry in this table will depend upon the provision of Doors, Windows and ventilators in Plan)*

**(ii) Area Statement :-**

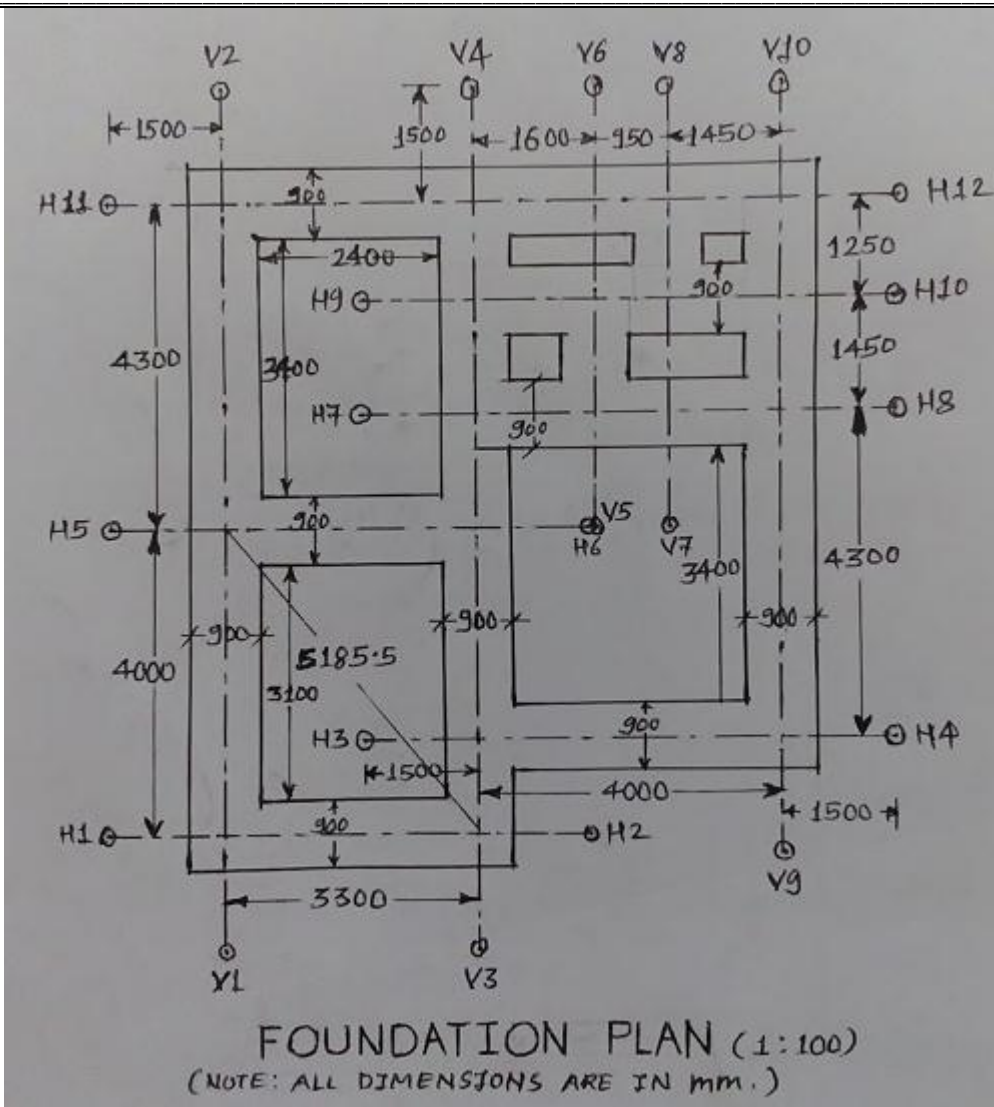
Sr. No.	Particulars / Item	Nos.	Clear Size	Area
1	Living Room	1	3.0 m x 3.7 m	11.10 sq. m.
2	Bed Room	1	3.0 m x 4.0 m	12.00 sq. m.
3	Kitchen	1	3.7 m x 4.0 m	14.80 sq. m.
4	Bath room	1	2.15 m x 1.2 m	2.58 sq. m.

**(24)**  
  
04 M for table and correct entry

04 M for table and



		5	W.C.	1	1.2 m x 1.0 m	2.10 sq. m.	correct entry ( ½ M for each point)
		6	Wash area	1	(2.3 m x 1.0 m) + (1.35 m x 1.4 m)	4.19 sq. m.	
		7	Carpet Area	1	11.10 sq. m. + 12.00 sq. m.	23.10 sq. m.	
		8	Build-up-area	1	(8.75 m x 3.75 m) + (7.45 m x 4.0 m)	62.61 sq. m.	
3.	b) Ans.	<p><b>State the importance of site plan and location plan in civil engineering drawing.</b></p> <p><b>1) Importance of site plan:</b> Following are the importance of site plan:</p> <ol style="list-style-type: none"> <li>1) It shows location of structure with respect to some permanent features like temple.</li> <li>2) It shows drainage line and water supply lines.</li> <li>3) It shows road with width near plot.</li> <li>4) It includes shape of building with external dimensions and size of plot.</li> <li>5) It shows survey number, adjoining plots, north direction, marginal distances like front, rear and side from plot boundary, compound wall, main gate, etc.</li> </ol> <p><b>2) Importance of Location plan:</b> Following are the importance of location plan: The term location plan is used to mean the plan showing the important features like major roads, temples, monumental building, etc. surrounding the property under reference. It thus assists in easily locating the property to be developed and in most of the advertisements of commercial centers or residential blocks, the location plan gets the key position.</p>					04 M (01 M to each point - any four points)
3.	c) Ans.	<p>Draw to a suitable scale foundation plan for the building shown in Figure No. 1 of Q. No. 2</p> <p><b>The foundation plan for the building shown in Figure No. 1 of Q. No. 2 is given below:</b></p>					



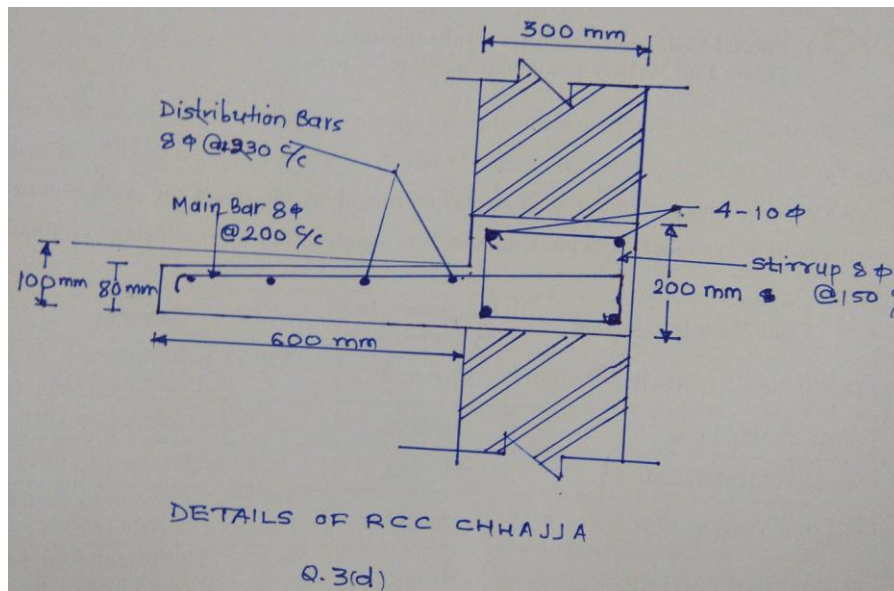
Correct Plan  
04 marks

dimension  
02 marks,

Scale 02  
mark

3. d) **Draw a neat labeled section of a typical RCC Chajja.**

Ans. The neat labeled section of a typical R.C.C. Chajja is given below:



for neat  
Section -  
04 M

for labeling -  
02 M

dimensioning  
and scale -  
02 M



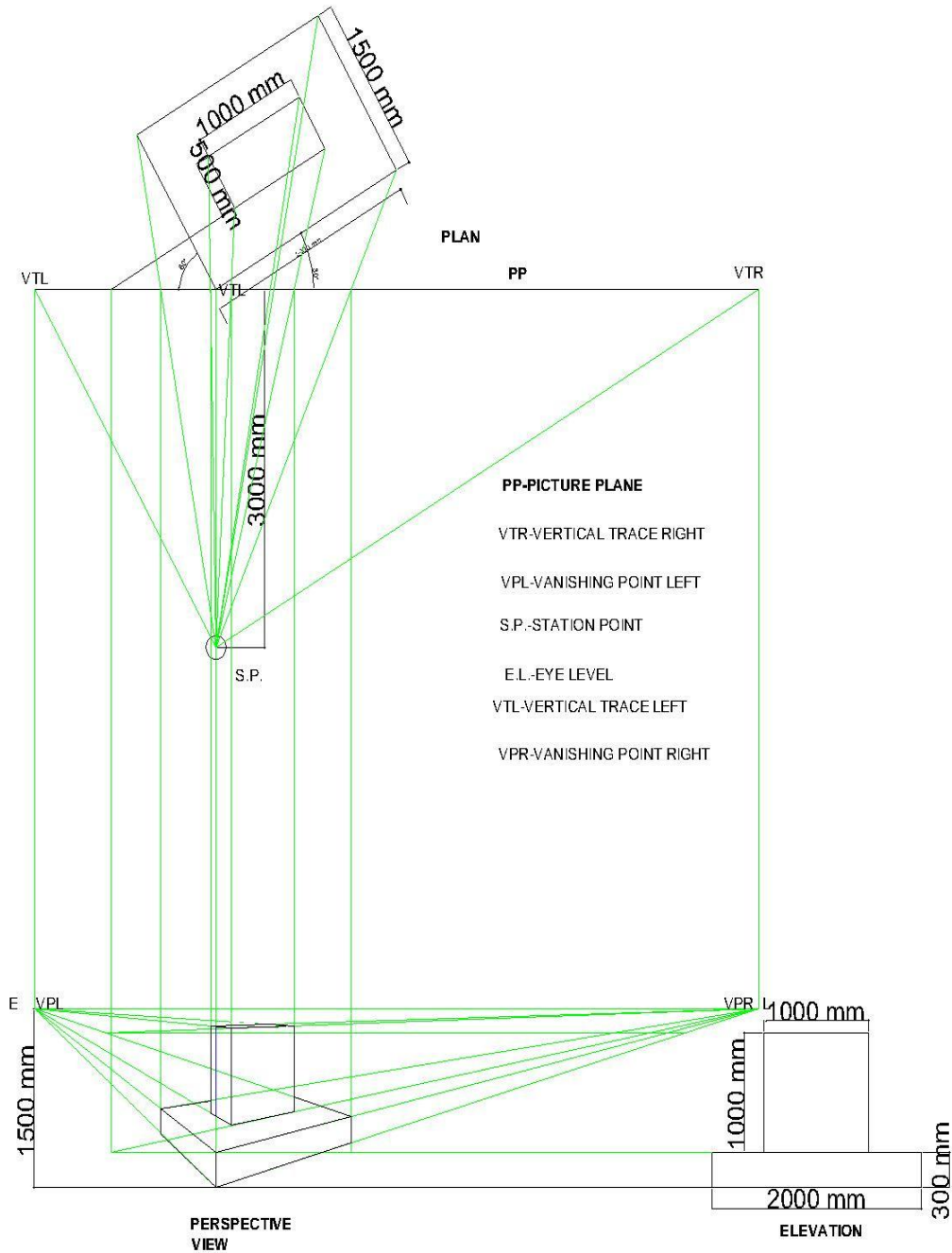
4.	a)	<p><b>Attempt any TWO of the following</b></p> <p><b>Define :</b></p> <p><b>(i) Plot Area</b> <b>(ii) Carpet Area</b> <b>(iii) Plinth Area</b> <b>(iv) Floor Area</b></p> <p>Ans. <b>i) Plot Area:</b> Plot area commonly known as site area is a piece of land enclosed by definite boundaries. The mean horizontal distance between the front and rear site boundaries is known as depth of the plot area.</p> <p><b>ii) Carpet area:</b> - This is the floor area of the usable rooms at any floor. (Actually where carpet can be laid.) Carpet area can be calculated from floor area deducting sanitary accommodation, kitchen, pantries, verandah, corridors, passages, stores etc.</p> <p><b>iii) Plinth area</b> is the built up covered area of a building measured at floor level of any storey. Plinth area is calculated by taking external dimensions of the building at floor level.</p> <p>The following shall be included in the Plinth area:</p> <ol style="list-style-type: none"> <li>a. All floor area of walls at the floor level excluding plinth offsets, if any.</li> <li>b. Internal shafts for sanitary installations having area less than 2 sq.m., air condition ducts, lifts etc.</li> <li>c. The area of mummy room at terrace level.</li> <li>d. Area of porches other than cantilevered.</li> </ol> <p>The following shall not be included in the Plinth area:</p> <ol style="list-style-type: none"> <li>a. Area of loft.</li> <li>b. Internal sanitary shafts more than 2 sq.m. in area.</li> <li>c. Enclosed balconies, courtyard, open areas, cantilever projections etc.</li> <li>d. Towers, sunshade, domes etc. projecting above the terrace level, not forming a storey at terrace level.</li> <li>e. Architectural bonds, cornices etc.</li> <li>f. Sunshades, vertical sun breakers of box louvers projecting out.</li> </ol> <p><b>iv) Floor area:</b> - This is the usable covered area of the building at any floor level. Floor area is calculated by deducting area of walls from plinth area.</p>	<p><b>(16)</b></p> <p>2M for each definition.</p>																		
4.	b)	<p><b>Suggest the various units and their sizes for general post office building.</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">a) entrance and moving space by the side of counters</td> <td style="width: 40%;">2 m wide</td> </tr> <tr> <td>b) counters :height</td> <td>1.6 m -1.8 m</td> </tr> <tr> <td style="padding-left: 20px;">:width</td> <td>0.4 m -0.8 m</td> </tr> <tr> <td>c) post master's room</td> <td>9 m<sup>2</sup></td> </tr> <tr> <td>d) working space behind counters</td> <td>3 m wide</td> </tr> <tr> <td>e) sorting space</td> <td>2-3 m<sup>2</sup> per postman</td> </tr> <tr> <td>f) telephone booth</td> <td></td> </tr> <tr> <td>g) parking space and cycle stand</td> <td></td> </tr> <tr> <td>h) sanitary block for office staff/officers</td> <td></td> </tr> </table>	a) entrance and moving space by the side of counters	2 m wide	b) counters :height	1.6 m -1.8 m	:width	0.4 m -0.8 m	c) post master's room	9 m <sup>2</sup>	d) working space behind counters	3 m wide	e) sorting space	2-3 m <sup>2</sup> per postman	f) telephone booth		g) parking space and cycle stand		h) sanitary block for office staff/officers		08 M
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4.	c)	<p><b>Define 'Privacy'. State its type and state methods of achieving 'privacy' during planning of a building.</b></p>																			







Ans.



02 marks for plan,

01 mark for elevation,

02 marks for construction lines,

01 mark for eye level

01 mark station point

05 marks for correct object

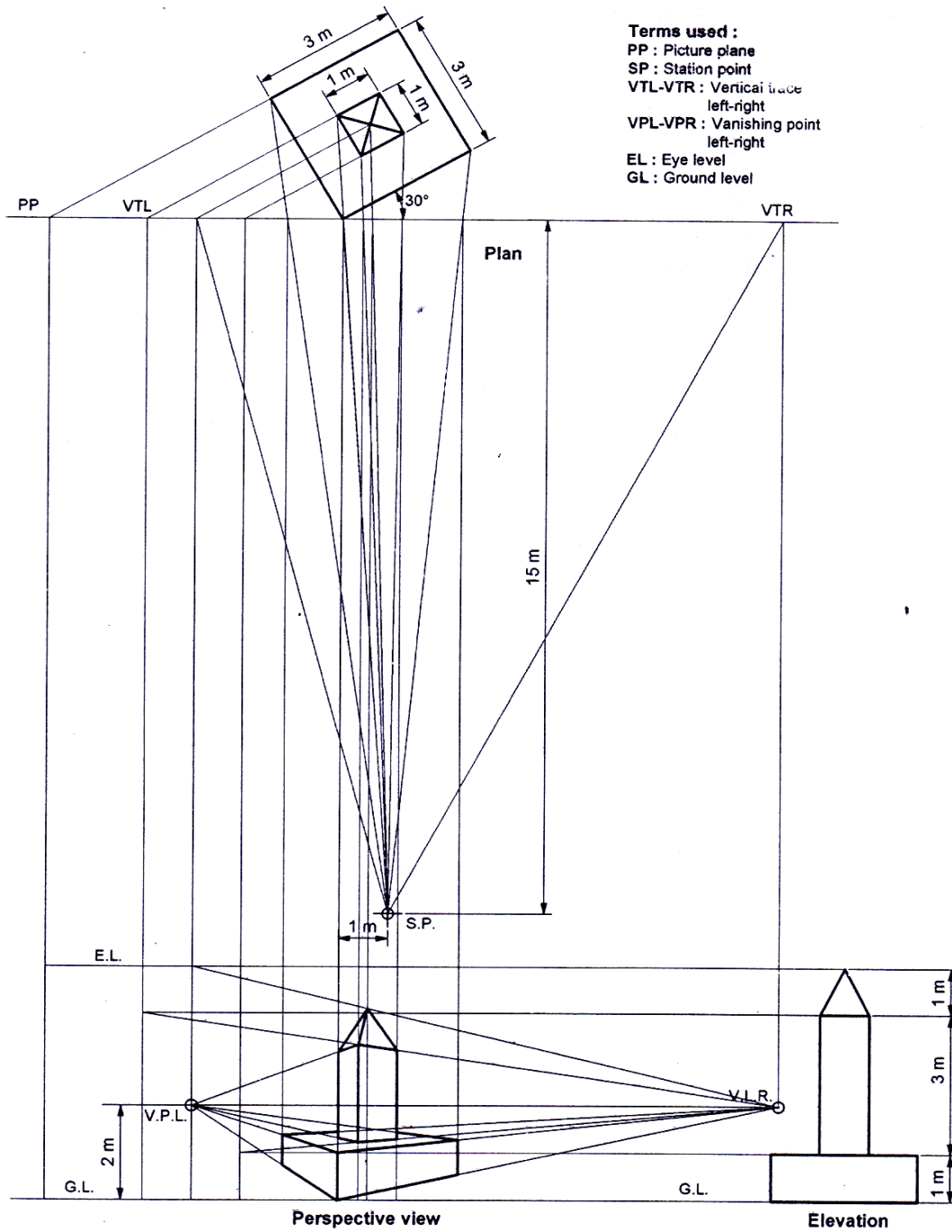


5. OR

**Draw the two point perspective view of a small monumental object shown in fig no.3 retain all construction lines. Assume eye level is at 2.0 m above the G.L.**

(12)

Ans.



02 marks for plan,  
01 mark for elevation,  
02 marks for construction lines,  
01 mark for eye level  
01 mark station point  
05 marks for correct object