SUMMER – 15 EXAMINATIONS

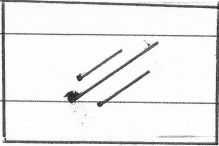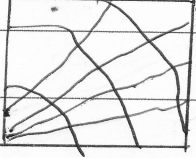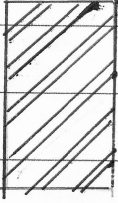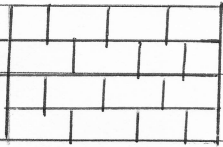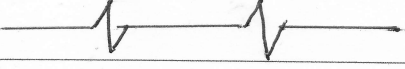**Subject Code: 17309**   **Model Answer- Building Drawing**   **Total Pages:** 0 | / ||

Important Instruction to Examiners:-

1) The answers should be examined by key words & not as word to word as given in the model answers scheme.

2) The model answers & answers written by the candidate may vary but the examiner may try to access the understanding level of the candidate.

3) The language errors such as grammatical, spelling errors should not be given more importance.

4) While assessing figures, examiners, may give credit for principle components indicated in the figure.

5) The figures drawn by candidate & model answer may vary. The examiner may give credit for any equivalent figure drawn.

5) Credit may be given step wise for numerical problems. In some cases, the assumed contact 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 judgment on part of examiner of relevant answer based on candidates understanding.

7) For programming language papers, credit may be given to any other programme based on equivalent concept.

Important notes to examiner
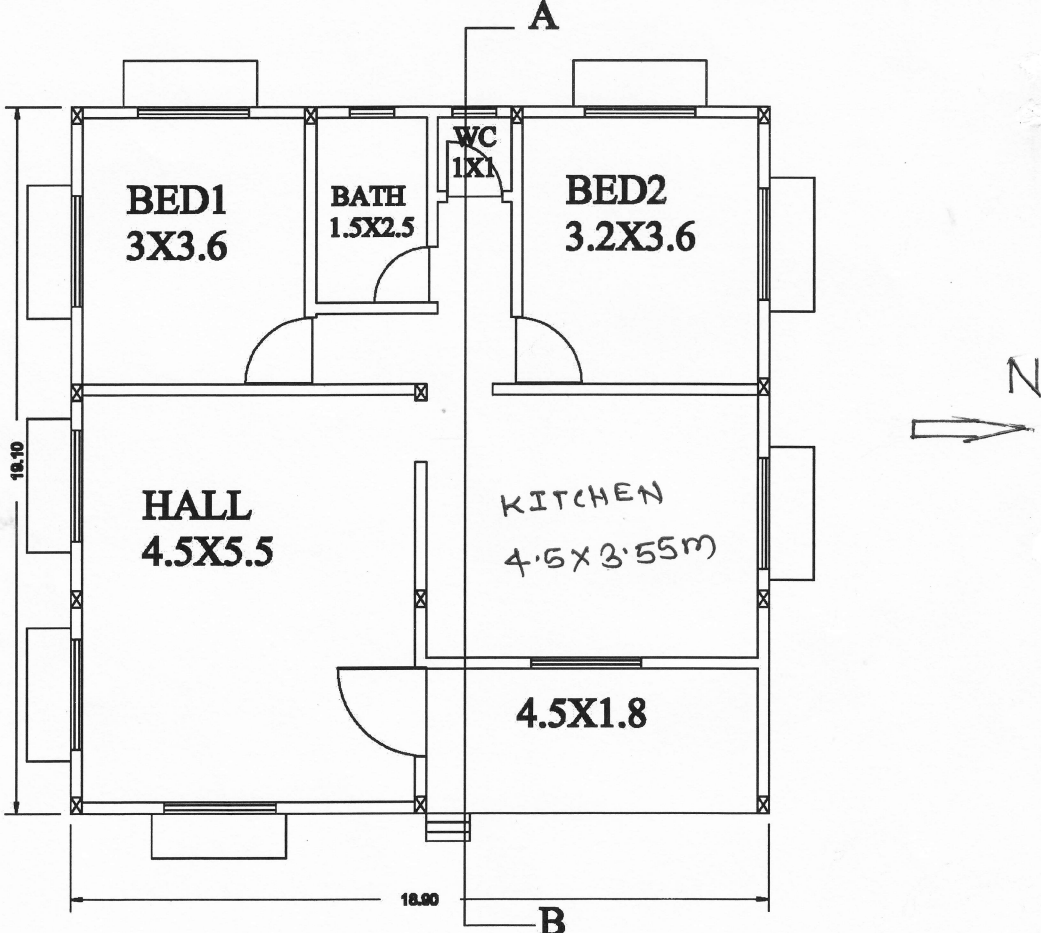
Q .NO	SOLUTION	MARKS
1.	A) Attempt any three :	
a)	Draw graphical symbols as per Is 968-1989 :	04 M
	i) Glass :– ii] wood work	
		01 M
	iii] Brick work iv] concrete	01 M each.
	Section Elevation	
b]	Draw any four types of line used in drawing.	04 M
	i) centre line : (0.2 to 0.3 mm thick)	
	— · — · — · — · — · — · —	
	ii) visible outline thick : (0.60 to 1·30 mm)	
	▬▬▬▬▬▬▬▬▬▬	
	iii] Hidden line :– (0.4 to 0.5 mm thick)	01 M any four
	– – – – – – – – – – – –	
	iv) section line : (0.6 to 1mm thick)	
	— · — ·· — · — · — · — ·· —	
	v) Break line :	
	(Long break)	
	(short break)	
	vi] Dimension line : (0·2 mm to 0·3 mm thick)	
	|←————————————→|	
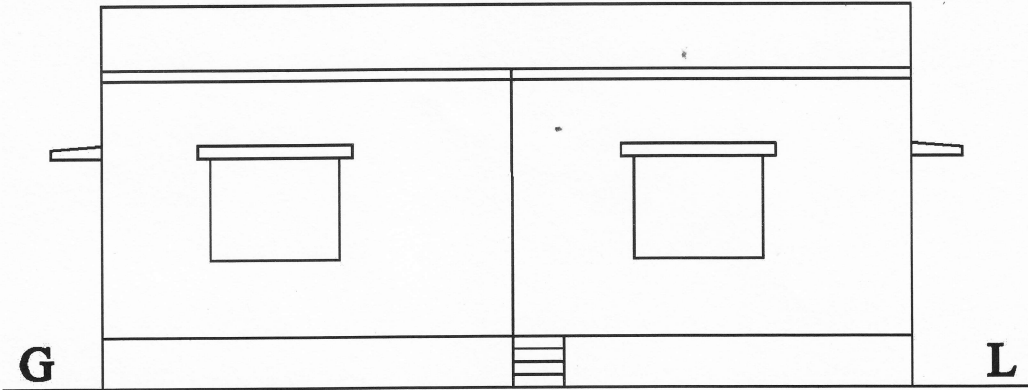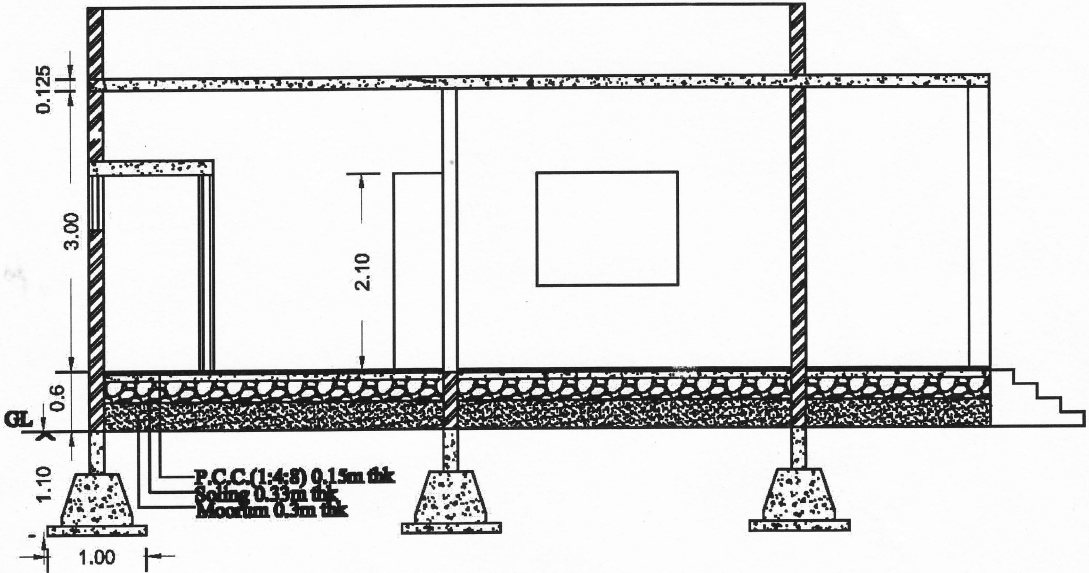
Q .NO	SOLUTION	MARKS
c]	**Define:**	
	i) Roominess:	
	A psychological feeling about bigness or smallness of space, e.g. of a room, is called roominess.	02M
	It is common observation that a square room appears smaller than a reactangular room of exactly the same area.	
	ii] Privacy :—	
	There are two considerations to the principle of privacy.	
	a) External privacy:	
	This means privacy of the entire building from surrounding buildings. privacy from **noise** pollution from the road. Also privacy from congestion due to crowding of buildings.	01M
	b) Internal Privacy:	
	This means prevention of direct view inside my room from any other room or from passage. Proper placement of doors ensures the internal Privacy.	01M
d]	**state minimum dimensions for:—**	
	i] kitchen :- 5.5 sq.m (width : 1.8m)	01M
	ii] Garage: 3m×4m , 3.3m×4.2m, 4.0m×4.5m.	01M
	iii] Bathroom & attached w.c : $2.8m^2$ with a width 1.2m	01M
	iv] w.c : $1.1m^2$ (width 0.9m)	01M

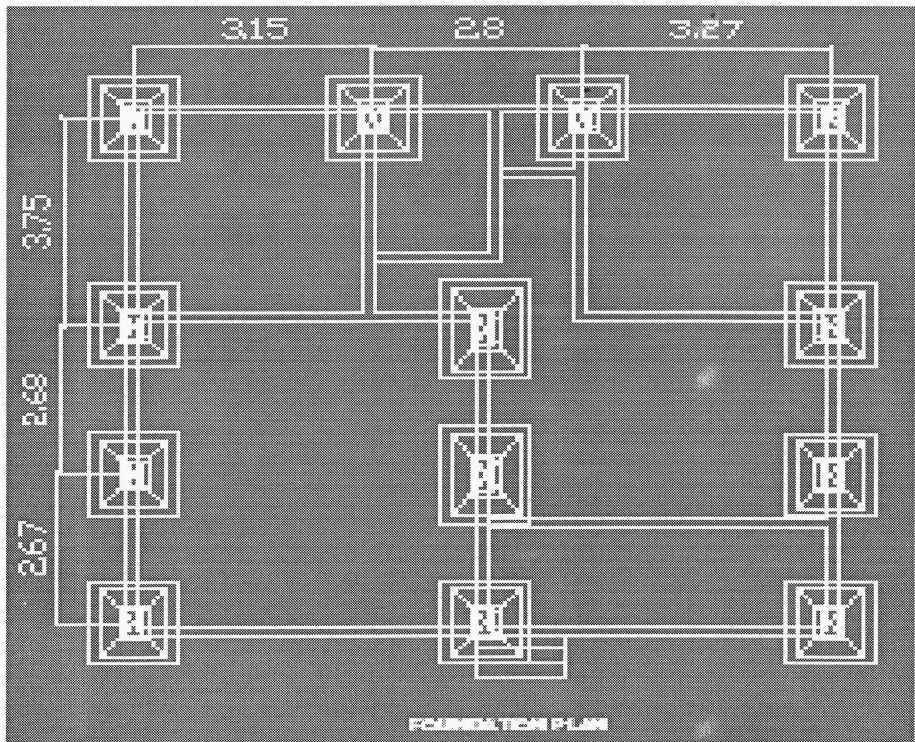| Q .NO		SOLUTION	MARKS
Q-1	B	Draw a line plan of college canteen. Approximate builtup area is 200sq.m	

LINE PLAN OF COLLEGE CANTEEN
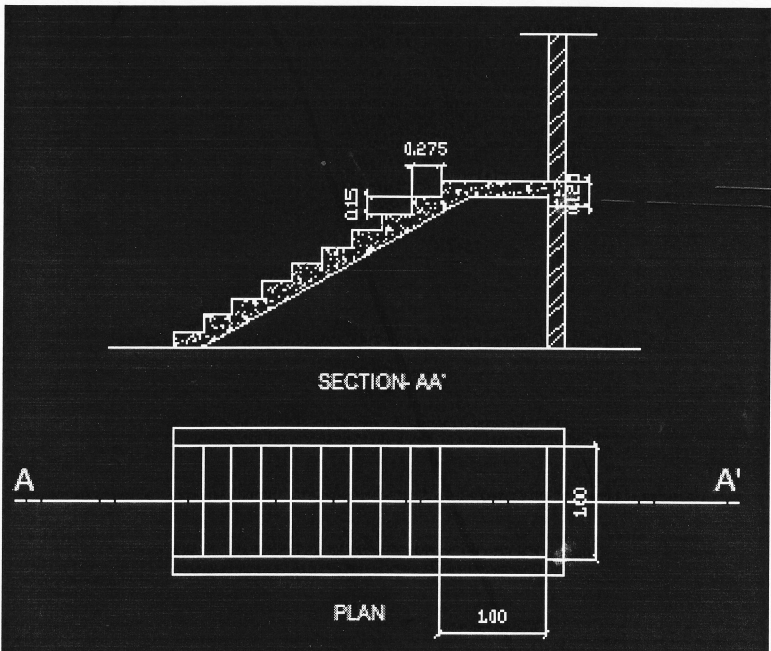
*(*Note-for neat and suitable line plan with assume suitable scale -4 marks, for door and window position -2 marks and 2 marks for labeling)*

* (Student may Draw any Appropriate plan so credit may given Accordingly.)

Q .NO	SOLUTION	MARKS
Q-2	Figure 1 shows line plan of residential building. Draw to a scale of 1:50 the following views. show all dimensions and label parts i) Developed plan ii) Section along AB. iii) Front Elevation a)depth of foundation 1.10 M below G.L. b) Plinth height above G.L. 600 MM. c) Height of bottom of slab from floor level is 3000MM. d) slab thickness 125mm e) chajjas projection 600mm f) Wall thickness of all walls 150mm	

DEVELOPED PLAN

Scale 1:50

* Note: Developed plan 4 marks, lebbling 2 marks,dimensions 2 marks, doors and windows 3 marks, neatness 1 marks

*

Q .NO	SOLUTION	MARKS
Q-2 continue		

G   L

ELEVATION

* Note: Correct elevation 6 marks, neatness 2 marks

*

0.125

3.00

2.10

0.6

GL

1.10

P.C.C.(1:4:8) 0.15m thk
Soling 0.33m thk
Moorum 0.3m thk

1.00

SECTION AB

* Note: Correct section 4 marks, all dimension 2 marks, material symbol 2 marks

*

Q .NO	SOLUTION	MARKS
Q3)	**Attempt ANY THREE of following: (08 x 03)**	**24**
(a)	Draw to a suitable scale foundation plan for a building shown in figure no. 1Q. No.2 footing size C_1 = 900 x 1200;C_2= 900 x 1500.	8M
Ans.		6 marks for correct fig&2 marks for proper dimension
(b)	Write suitable construction notes forthe building shown in figure no. 1.	8M
Ans	a) Depth of foundation below G.L – 1.10 m b) Plinth height above G.L - 600 mm c) Height of bottom of slab from floor level- 3000 mm d) Slab thickness - 125 mm e) Chajja Projection - 600 mm f) Thickness of all walls - 150 mm g)Dado upto 1200mm height is provided with glazed tiles for bath & W.C.walls h) Concrete bed P.C.C (1:4:8) 150mm thick **Also Consider any other relevant points**	**1 marks for each point**
(c)	Define built up area and carpet area. Calculate built uparea of a building show in figure no. 1. Also calculate carpet area for same building.	08M
Ans.	**Built up area:-**It is the area of all the floors of the building. It includes area of all the rooms including wall thickness some authorities including some percentage (%) of cantilever projection like chajja, balcony, open terraces etc. **Built up area** = (9.1X9.0) – (4.5X1.8) = **73.8 m^2** **Carpet area:** -This is the useable floor area at any floor level excluding sanitary accommodations, verandahs, corridors, passage, staircase, garage, canteen, etc. **Carpet area** = Built up area – Area of WC,Bath & Kitchen = 73.8-20.72 = **53.08 m^2**	**2 marks for each**
(d)	What is the purpose of perspective drawing? What do you mean by a stationpoint and vanishing point in perspective drawing? Also state the principlesused in perspective drawing.	

|		

Ans.	**Purpose of perspective drawing :**
	   a) It helps in planning elevation treatment for architectural beauty.
	   b) It helps in landscaping around the structure.
	   c) It is required for modeling.
	   d) It is required in interior decoration, especially; the one- point perspective is helpful.
		1 marks for each point

	Station point: -It is the point where the observer is considered to be standing. **Vanishing point:** -These are the points where vertically downward projectors from left & right vertical traces (i.e. VTL & VTR) intersect the eye level.	**1 marks for each point**
	Principles: - a) The lines appear to be shorter than their actual length & this effect increases as the distance of the object increases. **b)** The picture of all points & lines on the picture plane coincides with the points & lines themselves.	**1 marks for each point**
Q4)	**Attempt ANY TWO of following: (08 x 02)**	16
a)	Draw a plan and section ol a single flight of a R.C.C. stair case from following data:i) Number risers - 10 of 150 mm height. ii) Number of trades - 9 of 275 mm width. iii) Width of stair case is 1000 mm. iv) Landing at top is 1000 mm x 1000 mm. v) Waist slab 125 mm thk.	
Ans.		**4 marks for section & 4marks for plan with proper dimension**
b)	Explain with example the aspect and prospect State your comments on aspect of a residential building shown in figure No. 1 (Q. No. 2).	
Ans.	**Aspect:-**Different rooms of the building are placed and located according the functional utility in such a way that maximum advantage from natural elements like sun, wind can be obtained. Sunlight provides the illumination inside the rooms in day time and we need not to use artificial lighting and it creates pleasant and cheerful atmosphere inside the room. Sunlight also kills germs and bacteria's. To obtain sufficient sunlight inside the room as per the requirements windows are placed in external walls.	**2 marks for explanation & 1 mark for figure**
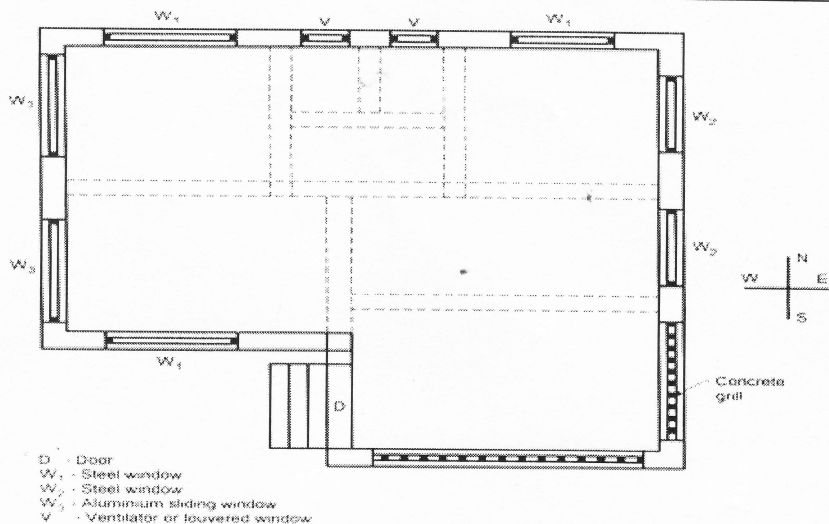
Fig. 2.1 : Aspect-arrangement of windows in external walls

Prospect: -It is related with the views as seen of the outside from the doors and windows in the external walls. For pleasant atmosphere view of a garden, hill and a river, etc. is a good prospect. Towards these objectives door and windows should be provided in the external wall of the buildings, undesirable views like a small nallah, slum area, drainage disposal units, garbage collection centers, etc. should be concealed by useful to keep a visual control at the entrance gate of the house and all windows should be provided with iron-grills from security point of view.
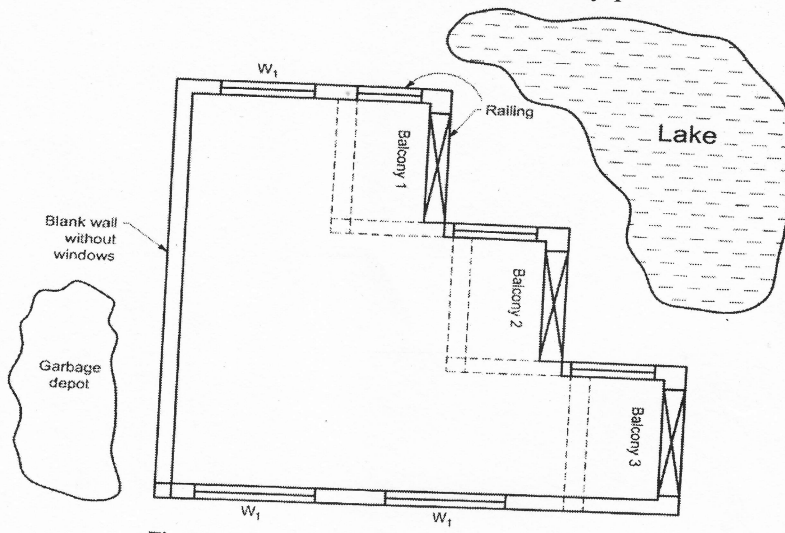
2 marks for explanation & 1 mark for figure

Comment on aspect :-Consider any relevant points give credit accordigly | 02M

| c) | Whatdoyou mean by F.S.I.? Calculate F.S.I remaining&F.S.I consumed forthe building shown in figure No. 1. The plot is 15 M x 25 M. F.S.I. permissiblein this case is one? | |

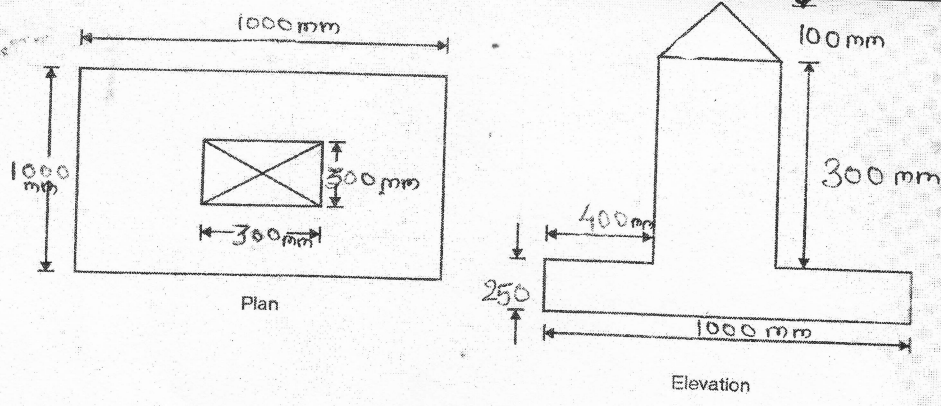| Ans. | **F.S.I:**-It is defined as a ratio of total area of the entire floor to the area of plot.

F.S.I= Total area of the entire floor / Area of plot

F.S.I Consumed=90.24/375 = **0.24**

F.S.I Remaining= 1-0.24=0.76 | 2 marks for each point |

Q .NO	SOLUTION	MARKS
Q-5 a)	Draw to a suitable scale a two point perspective for pedestal shown in fig -2 assume eye level 1.4m above G.L	12M
	2-Marks for Plan,1-Mark for elevation,Constructionline-2 Marks, Eye Level-1Mark,Correct object 6 Marks	

Q .NO	SOLUTION	MARKS
Q-5 b)	**Draw to a suitable scale a two point perspective assuming eye level 1.4m for drawing shown in fig no-3**	12 M

Plan

1000 mm
1000 mm
300 mm
300 mm

Elevation

100 mm
300 mm
400 mm
250
1000 mm

Soln. :

1000 mm
300
300
1000 mm

VTL   60°   30°   PP   VTR

3 m

S.P.
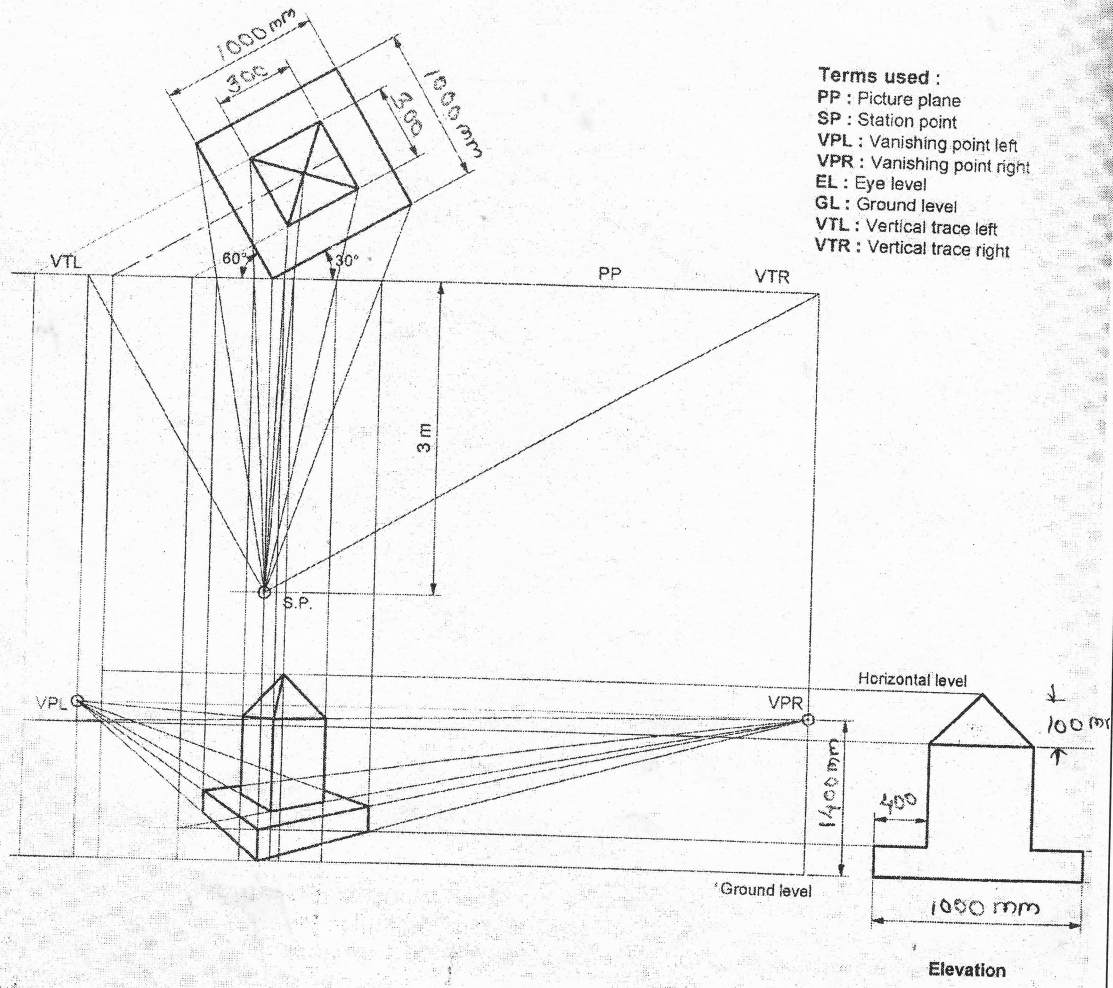
Terms used :
PP : Picture plane
SP : Station point
VPL : Vanishing point left
VPR : Vanishing point right
EL : Eye level
GL : Ground level
VTL : Vertical trace left
VTR : Vertical trace right

Horizontal level

VPL   VPR

1400mm

Ground level

Elevation

100 mm
400
1000 mm

| | **2-Marks for Plan,1-Mark for elevation,Constructionline-2 Marks, Eye Level-1Mark,Correct object 6 Marks** | |