

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE****Regular End Semester Examination – Summer 2022****Course: B. Tech.****Branch : Civil Engineering****Semester: VI****Subject Code & Name: BTCVVC606 Building Planning & Design****Max Marks: 60****Date: 26/08/2022****Duration: 5 Hrs.****Instructions to the Students:**

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

**Q. 1 Solve Any Two of the following.**

- A) Explain various planning principles that relates to building services. **(CO1)** 6  
B) Explain the green building concept. **(CO1)** 6  
C) Draw plan of a residential building as per sun wind diagram. **(CO1)** 6

**Q.2 Solve Any Two of the following.**

- A) Explain the standard dimensions of building components as per NBC. **(CO1)** 6  
B) Describe the process of obtaining building permission. **(CO1)** 6  
C) Draw a building plan as per the NBC guidelines. **(CO1)** 6

**Q. 3 Solve Any Two of the following.**

- A) Describe the traditional methods of building construction. **(CO2)** 6  
B) Discuss various low cost housing materials. **(CO2)** 6  
C) Draw single-line drainage plan of a residential building. **(CO2)** 6

**Q.4 Solve Any Two of the following.**

- A) Draw single-line electrification plan of a residential building. **(CO2)** 6  
B) Discuss various component parts of plumbing system. **(CO2)** 6  
C) Explain fire resistance system in detail. **(CO2)** 6

**Q. 5 Solve Any Two of the following.**

- A) Draw single-line furniture plan of a residential building. **(CO3)** 6  
B) Discuss the functional requirements of ventilation. **(CO3)** 6  
C) Explain Sabine's formula and discuss various materials to be used for better acoustics in a building. **(CO3)** 6

**\*\*\* End \*\*\***



Seat No.	
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Set **P****T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018  
BUILDING PLANNING AND DESIGN**

Day and Date : Wednesday, 12-12-2018  
Time : 2.30 p.m. to 6.30 p.m.

Total Marks : 70

- Instructions :**
- 1) Q. No. 1 is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. 3. **Each** question carries **one mark**.
  - 2) **Answer MCQ/Objective type questions on Page No. 3 only.**  
**Don't forget to mention, Q.P. Set (P/Q/R/S) on Top of Page.**
  - 3) Figures on right indicate full marks.
  - 4) Draw neat diagram wherever necessary.

**MCQ/Objective Type Questions**

Duration : 30 Minutes

Marks : 14

1. Write "Correct" or "Incorrect" for following sentences. **(14x1=14)**
  - 1) In hospitals, Area of ward per bed is 8 to 10 sq. m. \_\_\_\_\_
  - 2) For cinema hall, ratio of height to width to length is taken as 1 : 2: 3 \_\_\_\_\_
  - 3) In hospital, IPD needs 1 w.c. for every 8 beds \_\_\_\_\_
  - 4) For cinema auditorium floor area should be in the range of 3.5 to 4.2 sq. m. per person. \_\_\_\_\_
  - 5) In a post office counter height from the floor is 1.6 m. to 1. 8 m. \_\_\_\_\_
  - 6) Around 15 sq. m. per bus shall be considered in the design of the bus station towards the parking area \_\_\_\_\_
  - 7) Station point is a point from where the observer is looking at the object/building \_\_\_\_\_
  - 8) Unit for fire load is Kcal \_\_\_\_\_
  - 9) Reverberation is the part of thermal insulation \_\_\_\_\_
  - 10) Ramps provided at hospitals are usually with 1 in 10 slopes \_\_\_\_\_

**P.T.O.**



- 11) The shape of a room is not important factor affecting its acoustical properties \_\_\_\_\_
  - 12) Total absorption is calculated for fire resistance of a building.
  - 13) Now-a-days rain water harvesting is not having any significance for existing and proposed structures \_\_\_\_\_
  - 14) In an auditorium concave surfaces are more preferred than convex surfaces \_\_\_\_\_
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<b>Seat No.</b>	
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**T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018  
BUILDING PLANNING AND DESIGN**

Day and Date : Wednesday, 12-12-2018

Marks : 56

Time : 2.30 p.m. to 6.30 p.m.

- Instructions :**
- 1) Figures on **right** indicate **full marks**.
  - 2) Draw neat diagram **wherever necessary**.
  - 3) Use full imperial sheet for section **I** and answer book for Section **II**.

**SECTION – I**

2. Attempt all : 28

- A) A commercial bank proposes to build its branch office in a village. The branch is to have following accommodation
- a) Hall with counter 45 sq. m.
  - b) Store and record 20 sq.m.
  - c) Strong room 12 sq. m.
  - d) Agents room 15 sq. m.
  - e) Store room 10 sq. m.
  - f) Safe deposit vault 20 sq. m.
  - g) Toilets according to NBC.

Assume additional data if required

Draw

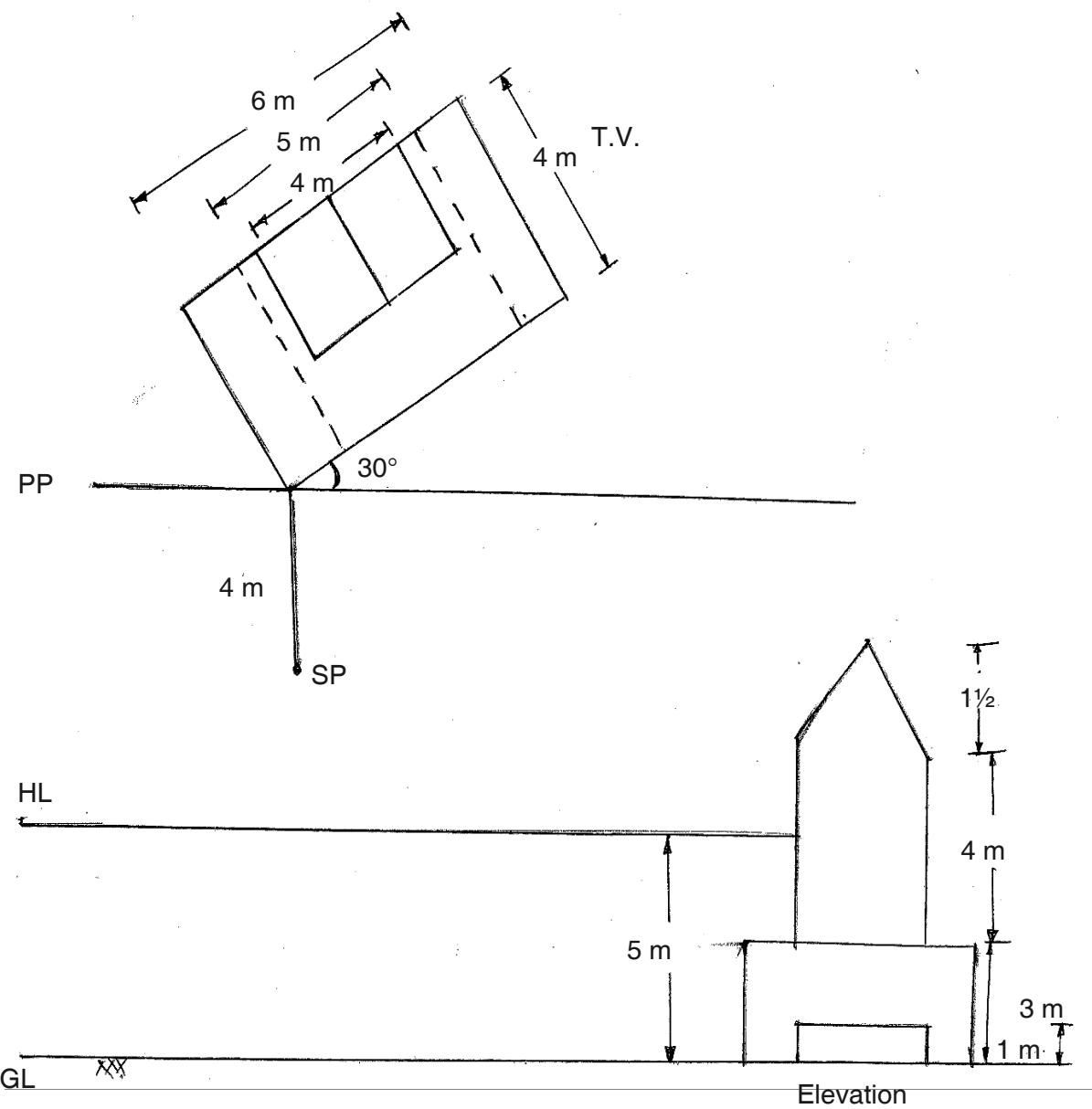
- 1) A detailed plan for the building (Scale 1 : 100) 13
- 2) A sectional elevation Passing through a Toilet room  
(Scale 1 : 100) 7

**Set P**



B) Draw perspective for given sketch. Use scale 1: 100. Symbols have usual meaning.

8



## 3. Attempt any seven :

28

- 1) Draw sketch for sound insulation treatment to a RCC floor slab.
- 2) Explain reverberation and reverberation time.
- 3) Explain structure borne noise and its insulation
- 4) Write note on "Automatic Sprinkler System" with sketch.
- 5) How fire can be confined ?
- 6) Explain design of rain water harvesting scheme for a bungalow with area 50 sq. M. Also state components of rain water harvesting structure.
- 7) Discuss about Computer aided design and drawing of building.
- 8) Explain any two components of aesthetics with sketch.
- 9) Explain acoustic design of a broadcasting room.

Set P



Seat No.	
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Set  Q

**T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018**  
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**MCQ/Objective Type Questions**

Duration : 30 Minutes

Marks : 14

1. Write “Correct” or “Incorrect” for following sentences. **(14x1=14)**

- 1) Unit for fire load is Kcal \_\_\_\_\_
- 2) Reverberation is the part of thermal insulation \_\_\_\_\_
- 3) Ramps provided at hospitals are usually with 1 in 10 slopes \_\_\_\_\_
- 4) The shape of a room is not important factor affecting its acoustical properties \_\_\_\_\_
- 5) Total absorption is calculated for fire resistance of a building.
- 6) Now-a-days rain water harvesting is not having any significance for existing and proposed structures \_\_\_\_\_
- 7) In an auditorium concave surfaces are more preferred than convex surfaces \_\_\_\_\_
- 8) In hospitals, Area of ward per bed is 8 to 10 sq. m. \_\_\_\_\_
- 9) For cinema hall, ratio of height to width to length is taken as 1 : 2 : 3 \_\_\_\_\_
- 10) In hospital, IPD needs 1 w.c. for every 8 beds \_\_\_\_\_
- 11) For cinema auditorium floor area should be in the range of 3.5 to 4.2 sq. m. per person.

P.T.O.



- 12) In a post office counter height from the floor is 1.6 m. to 1. 8 m. \_\_\_\_\_
- 13) Around 15 sq. m. per bus shall be considered in the design of the bus station towards the parking area \_\_\_\_\_
- 14) Station point is a point from where the observer is looking at the object/building \_\_\_\_\_

\_\_\_\_\_



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**T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018  
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  - f) Safe deposit vault 20 sq. m.
  - g) Toilets according to NBC.

Assume additional data if required

Draw

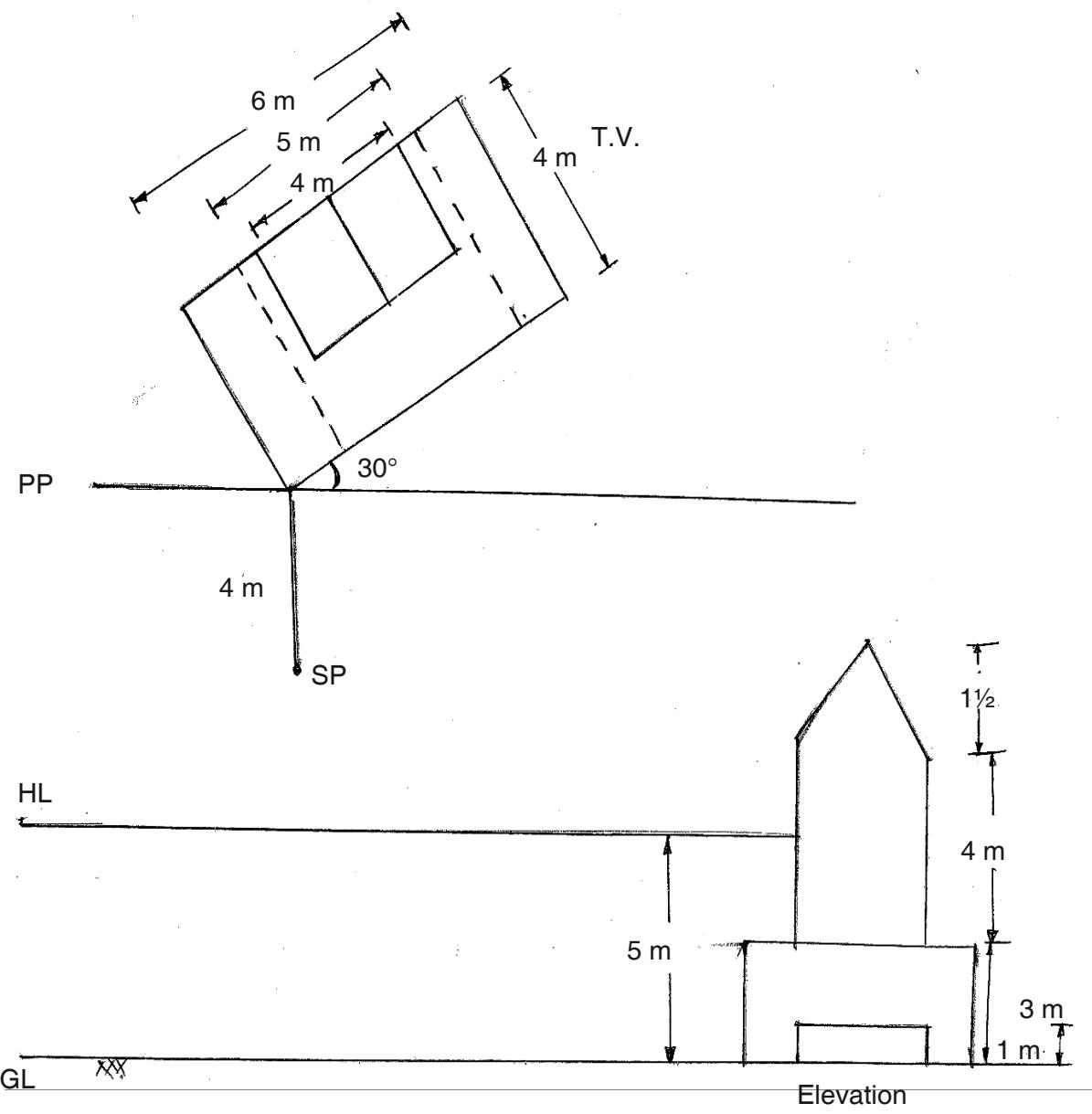
- 1) A detailed plan for the building (Scale 1 : 100) 13
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(Scale 1 : 100) 7

**Set Q**



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Set Q



Seat No.	
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Set **R****T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018  
BUILDING PLANNING AND DESIGN**

Day and Date : Wednesday, 12-12-2018  
Time : 2.30 p.m. to 6.30 p.m.

Total Marks : 70

- Instructions :**
- 1) Q. No. 1 is **compulsory**. It should be solved in **first 30 minutes** in Answer Book Page No. 3. **Each** question carries **one mark**.
  - 2) **Answer MCQ/Objective type questions on Page No. 3 only.**  
**Don't forget to mention, Q.P. Set (P/Q/R/S) on Top of Page.**
  - 3) Figures on right indicate full marks.
  - 4) Draw neat diagram wherever necessary.

**MCQ/Objective Type Questions**

Duration : 30 Minutes

Marks : 14

1. Write "Correct" or "Incorrect" for following sentences. **(14x1=14)**
  - 1) In a post office counter height from the floor is 1.6 m. to 1. 8 m. \_\_\_\_\_
  - 2) Around 15 sq. m. per bus shall be considered in the design of the bus station towards the parking area \_\_\_\_\_
  - 3) Station point is a point from where the observer is looking at the object/building \_\_\_\_\_
  - 4) Unit for fire load is Kcal \_\_\_\_\_
  - 5) Reverberation is the part of thermal insulation \_\_\_\_\_
  - 6) Ramps provided at hospitals are usually with 1 in 10 slopes \_\_\_\_\_
  - 7) The shape of a room is not important factor affecting its acoustical properties \_\_\_\_\_
  - 8) Total absorption is calculated for fire resistance of a building.
  - 9) Now-a-days rain water harvesting is not having any significance for existing and proposed structures \_\_\_\_\_
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P.T.O.



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- \_\_\_\_\_



<b>Seat No.</b>	
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BUILDING PLANNING AND DESIGN**

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Assume additional data if required

Draw

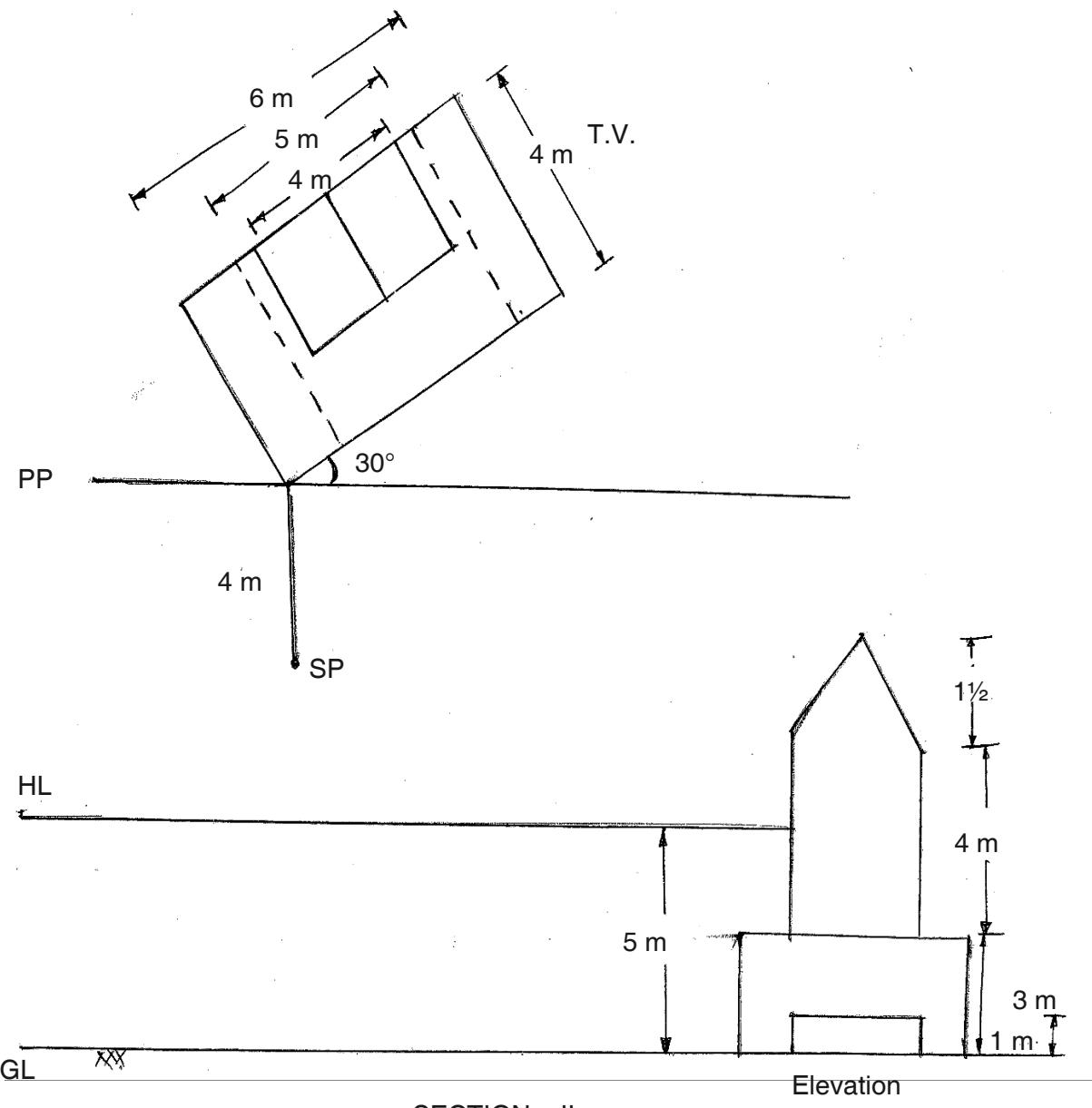
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**Set R**



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Set R



Seat No.	
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Set **S****T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018  
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**MCQ/Objective Type Questions**

Duration : 30 Minutes

Marks : 14

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**P.T.O.**



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- \_\_\_\_\_

**Set S**



<b>Seat No.</b>	
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**T.E. (Civil) (Part – I) (Old – CGPA) Examination, 2018**  
**BUILDING PLANNING AND DESIGN**

Day and Date : Wednesday, 12-12-2018

Marks : 56

Time : 2.30 p.m. to 6.30 p.m.

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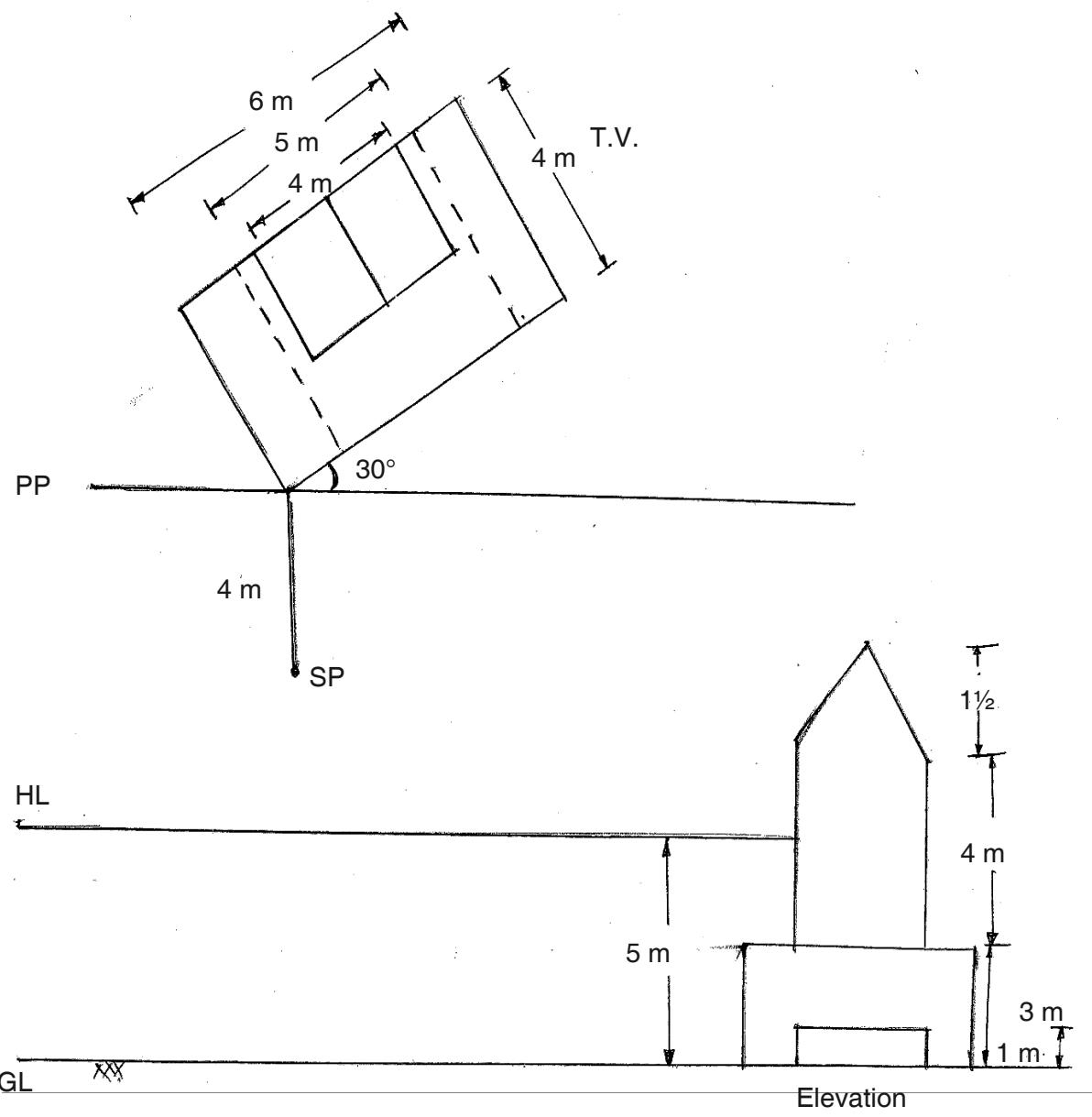
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**Set S**



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Set S