Total No. of Questions—**11**] [Total No. of Printed Pages—**7**

**[3362]-107**

## S.E. (Civil) EXAMINATION, 2008

## BUILDING PLANNING AND BUILT ENVIRONMENT

## (2003 COURSE)

**Time : Four Hours** **Maximum Marks : 100**

***N.B.*** :— (*i*) Answer Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6** from Section I and Q. No. **7** *or* Q. No. **8**, Q. No. **9** *or* Q. No. **10**, Q. No. **11** from Section II.

(*ii*) Answers to the two sections should be written in separate answer-books.

(*iii*) Neat diagrams must be drawn, wherever necessary.

(*iv*) Figures to the right indicate full marks.

(*v*) Assume suitable data, if necessary.

## SECTION I

**1.** (*a*) Explain with suitable sketches the following principles of planning :

(*i*) Roominess

(*ii*) Grouping. [5]

(*b*) What do you understand by the planning of manmade environment ? Explain. [5]

(*c*) Explain the various principles of architectural composition. [5]

P.T.O.

*Or*

2. (*a*) A rectangular shaped room has more utility then square-shaped room. Discuss this remark. [5]

(*b*) What are the minimum areas for different rooms in a residential buildings ? [5]

(*c*) Explain the regulation/bye-laws about :

(*i*) Open space requirements

(*ii*) Plinth height

(*iii*) Height of room and

(*iv*) Building line. [5]

3. (*a*) Explain the factors to be considered in planning the houses with climatic changes. [5]

(*b*) Explain dehumidification and humidification of air. [5]

(*c*) Explain the use of sun breakers. [5]

*Or*

4. (*a*) What is the objective of air conditioning ? [5]

(*b*) Explain with sketches, cycles of operation in air conditioning. State the function of each unit. [5]

(*c*) Write a note on essentials of comfort air conditioning for an auditorium. [5]

5. (*a*) Explain "fire load". [5]

(*b*) Compare and discuss the fire resisting properties of brick, concrete and steel. [5]

(*c*) What are the systems of plumbing ? Explain any *one* system with a neat sketch. [5]

*Or*

6. (*a*) State the general principles and factors in acoustical design. Explain any *one* with suitable examples. [5]

(*b*) Write the specific requirements for a good acoustical design in a cinema hall. [5]

(*c*) Write a short note on artificial lighting. [5]

## SECTION II

7. (*a*) Draw a detailed floor plan to a scale 1 : 50 of a residential building for the given line plan as shown in Fig 1 ahead.

Use the following data :

(*i*) The structure is load bearing.

(*ii*) All dimensions are in mm.

(*iii*) Thickness of all walls is 230 mm.

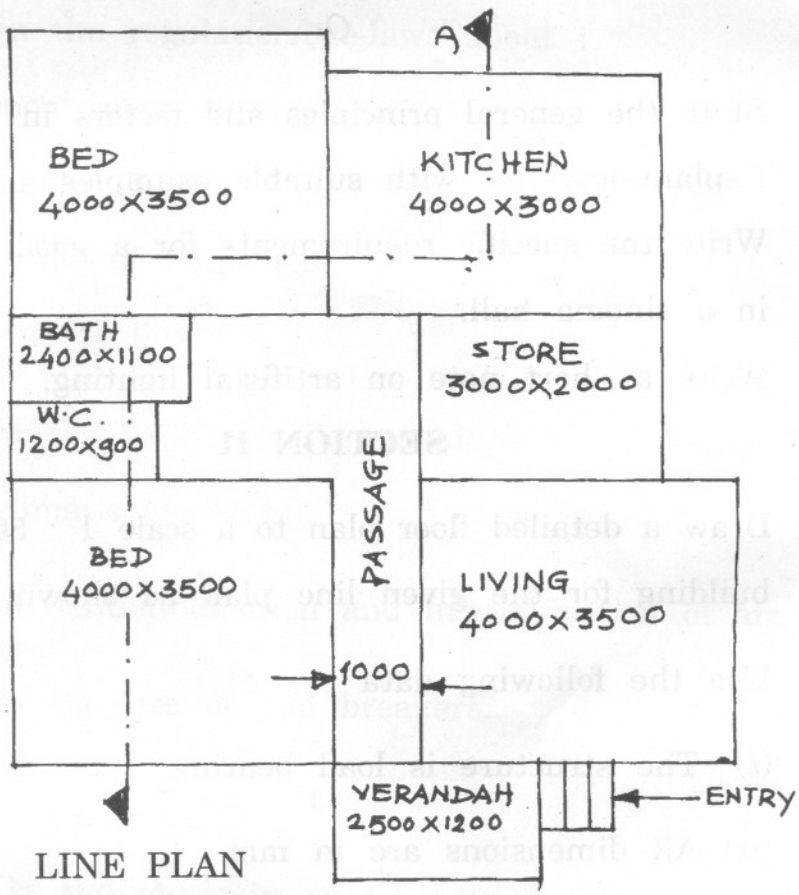
(*iv*) The building is single storey only.

(*v*) Assume suitable sizes of doors and windows.

(*vi*) Consider plinth height as 1000 mm.

(*vii*) Give the detailed dimensions. [12]

(*b*) For the line plan shown in Fig. 1.0, draw the detailed sectional elevation along line CD. Assume suitable dimensions for the footing. [8]




LINE PLAN

ALL DIMENSIONS ARE IN MM.

Fig. 1

*Or*

**8.** It is proposed to construct a bungalow with the the following data. The bungalow is two-storeyed and is RCC framed structure. It should satisfy the following requirements.

| Sr. No. | Name of Unit | Internal area $m^2$ | No. of Units |
|---|---|---|---|
| (1) | Living room | 16 | 01 |
| (2) | Bedroom | 13 each | 02 |
| (3) | Master bed with attached toilet and bath | 18 | 01 |
| (4) | Kitchen-Dining | 14 | 01 |
| (5) | Verandah | 10 | 01 |
| (6) | W.C. | 1.2 | 02 |
| (7) | Bath | 2.8 | 01 |
| (8) | Staircase | Decide suitable dimensions | 01 |

Draw :

(*i*) Draw a detailed line plans (ground and first floor) to a scale 1 : 50. Show north line. [15]

(*ii*) Locate all openings and columns. [5]

**9.** It is proposed to construct a primary school building for 400 students. Each class-room accommodates 50 students. The area per student is 1.2 $m^2$. The building also consists of supporting units like Headmaster Room, teachers room, office, separate toilets for staff and students. The building is RCC framed structure. Assume additional suitable data if required.

Draw :

(*i*) Line plan showing position of doors and windows. [10]

(*ii*) Detailed plan of a class-room showing furniture arrangement. [5]

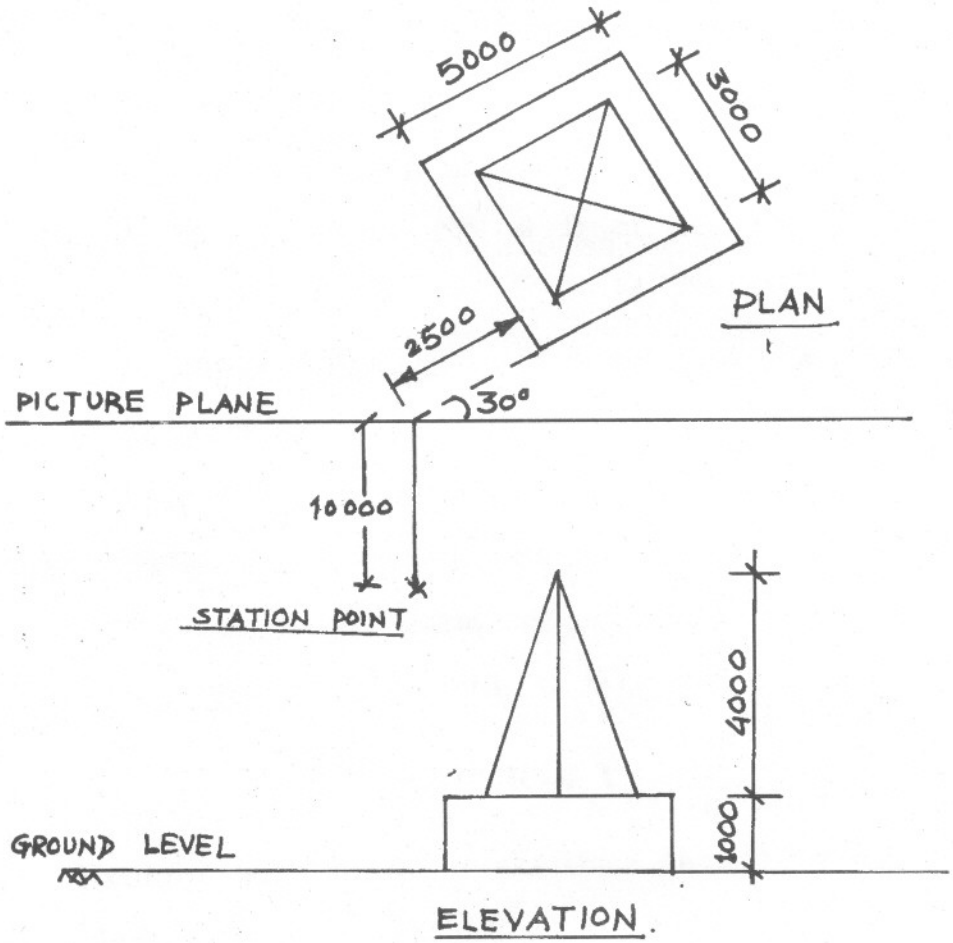
(*iii*) Detailed cross-section of foundations. [5]

*Or*

**10.** Draw a line plan for a Bus Stand building for Taluka head-quarter town. The Bus Stand consists of 12 platforms. The building is RCC framed structure and is single storeyed only. Show all necessary units. Use standard norms to finalise the dimensions of each unit. [15]

Show proper seating arrangement for passengers. [5]

**11.** Draw to a scale 1 : 100 or suitable a two point perspective view of the object shown in Fig. 2. Eye level is situated at 5.0 m above ground level. [15]




ALL DIMENSIONS ARE IN 'MM'.

Fig. 2