

7230

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

DCE - THIRD SEMESTER EXAMINATION

CIVIL ENGINEERING DRAWING—I

Time : 3 Hours ]

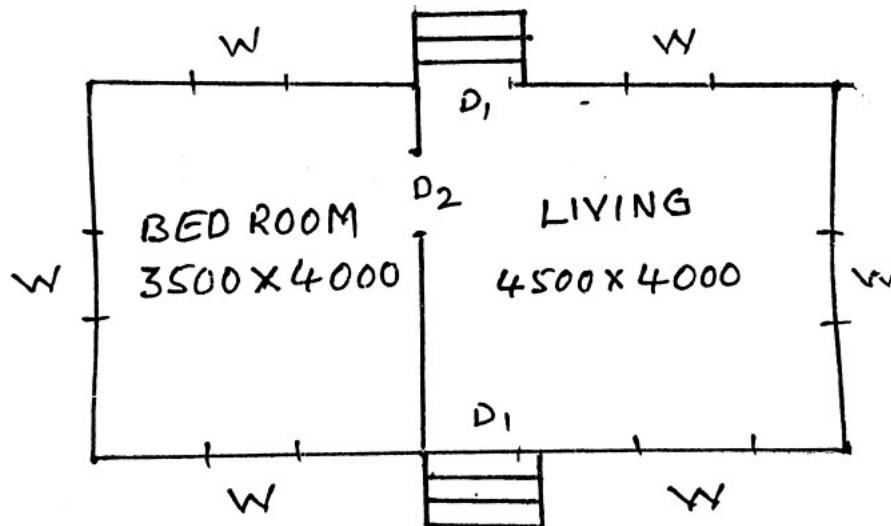
[ Total Marks : 60

## PART—A

10×2=20

- Instructions :** (1) Answer **all** questions.  
 (2) Each question carries **ten** marks.  
 (3) All parts must be drawn to scale.  
 (4) Any missing data may be assumed suitably.

1. Draw the working drawing for the purpose of marking the width of foundation for a two-roomed building as shown in the fig. Take the superstructure wall thickness as 200 mm and width of foundation concrete as 800 mm.



2. Draw the typical layout of active solar water heating system.

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **twenty** marks.  
(3) All parts must be drawn to scale.  
(4) Any missing data may be assumed suitably.

- 3.** The line diagram of a residential building showing the internal dimensions of the rooms is shown in the figure. From the given specifications draw the following views to the scale of 1 : 50.  
(a) Detailed plan  
(b) Section along A-A

**SPECIFICATIONS :**

**Foundation :** The depth of foundation shall be 1000 mm below the ground level. The PCC (1 : 4 : 8) bed in the foundation will be 800 mm wide and 200 mm deep. The footing shall be of brick masonry in CM (1 : 4) with width of first and second footing will be 500 mm and 400 mm respectively and the depth of both the footings will be 400 mm.

**Plinth or Basement :** The height of basement is 600 mm and width is 300 mm in brick masonry in CM (1 : 4). Damp proof course shall be provided under the super structure walls with 50 mm thick.

**Super structure :** The walls of super structure will be of brick masonry in CM (1 : 6). Height of the walls is 3300 mm from the floor to bottom of the RCC slab. Width of all the walls are 200 mm except the partition walls. The partition walls are 100 mm thick constructed from floor level. The partition walls are toilet room walls of bed room and wall between puja room and toilet room.

\* **Lintels and Sun shades :** Lintels with RCC (1 : 2 : 4) are provided on all openings with depth 150 mm and bearings of 150 mm on either side. Sun shades are provided on all the outer doors and windows. Sunshade is 100 mm thick at the wall face and 75 mm thick at free end and projection of 600 mm from the face of the wall.

**Roofing :** Roofing consist of RCC (1 : 2 : 4) slab 110 mm thick and weather proof course of 20 mm thick over slab.

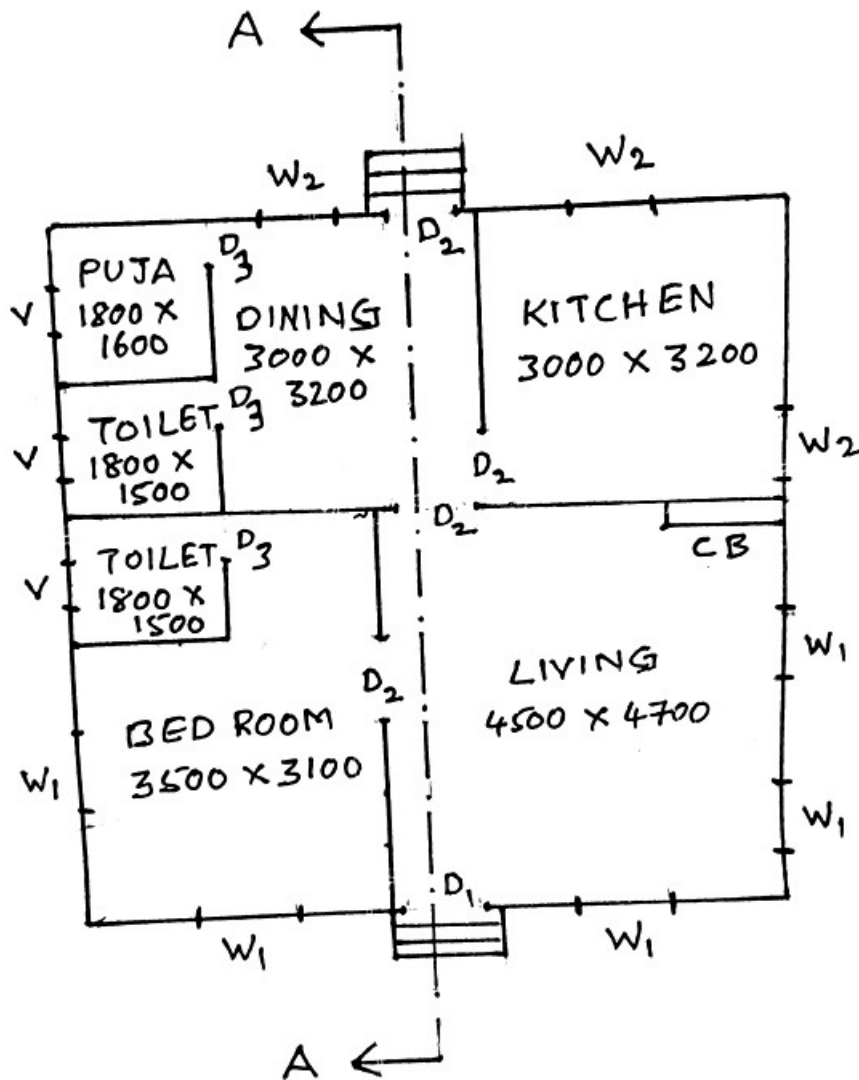
**Flooring :** Flooring shall be of CM (1 : 4) 20 mm thick over CC (1 : 5 : 10) of 100 mm thick over sand filling in the basement.

**Parapet :** Parapet wall is 100 mm thick and 650 mm height with brick masonry in CM : (1 : 4) shall be constructed all around the building. A coping of 150 × 50 mm thick shall be provided over the parapet.

**Steps :** Steps\* of 1200 mm wide are provided with brick masonry in CM (1 : 6) on both front and rear sides and rest on CC (1 : 4 : 8) bed 150 mm thick and having offset on the three sides equal to 100 mm. Tread of each step is 300 mm and rise is 150 mm.

**Schedule of Doors and Windows :**

- D1 - Flushed door 1200 × 2100 mm
- D2 - Flushed door 1000 × 2100 mm
- D3 - Flushed door 900 × 1800 mm
- W1 - Window 1200 × 1500 mm
- W2 - Window 1000 × 1500 mm
- CB - cupboard 1200 × 1500 mm
- V - Ventilator 1000 × 600 mm



4. Draw the line diagram showing the functional requirements of a rural hospital of 10 beds capacity to a suitable scale.

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