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Fifth Semester B.E. Degree Examination, December 2017  
(CIVIL ENGINEERING)

**COMPUTER AIDED BUILDING PLANNING AND DRAWING**

Time: 3 Hours

Max. Marks: 80

Note: Answer any *TWO* full questions. Assume any missing data suitably.

- Q1.** Draw to scale a singly reinforced beam for the following details. Size of the beam 400mm X 550 mm, clear span 4500mm, the beam is reinforced with 4 nos of 16 mm dia bars as main reinforcement, two hanger bars of 12 mm dia, and 8 mm dia 2LVS at 140 mm c/c. supported on wall 230mm thick.
- Longitudinal section showing the reinforcement details.
  - Cross section at center of beam and face of support

(30 Marks)

OR

- Q2.** Draw the cross section and Plan of a RCC dog legged stair for a building having the following details.  
Clear stair hall size 2.5X4.5m, width of landing 1.2m, width of each flight 1.2 m,  
Rise=150mm, Tread=150mm, Thickness of waist slab = 150mm Floor to floor height 3.6m.

(30 Marks)

- Q3.** The line diagram of a Residential building is given in Fig Q3. Draw to scale the following :
- Plan at sill.
  - Front elevation.
  - Section along XX.
  - Schedule of openings.

(50 Marks)

OR

- Q4.** The line diagram of a Hospital building is given in Fig Q4. Draw to scale the following :
- Plan at sill.
  - Front elevation.
  - Section along XX.
  - Schedule of openings.

(50 Marks)

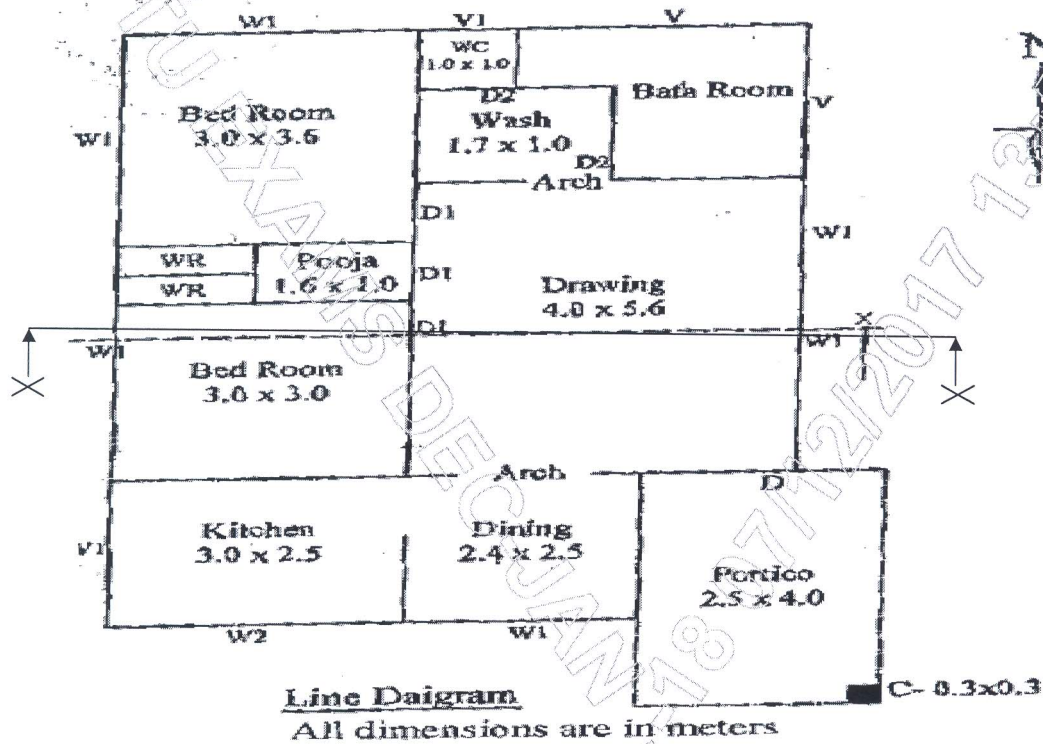


Fig. Q3

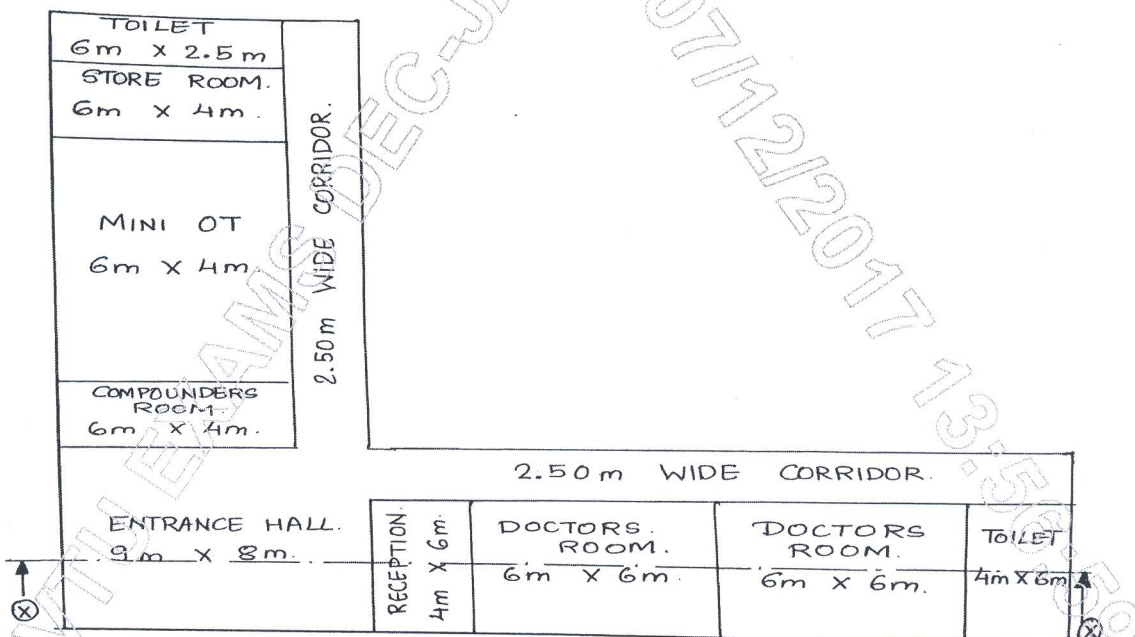


Fig. Q4



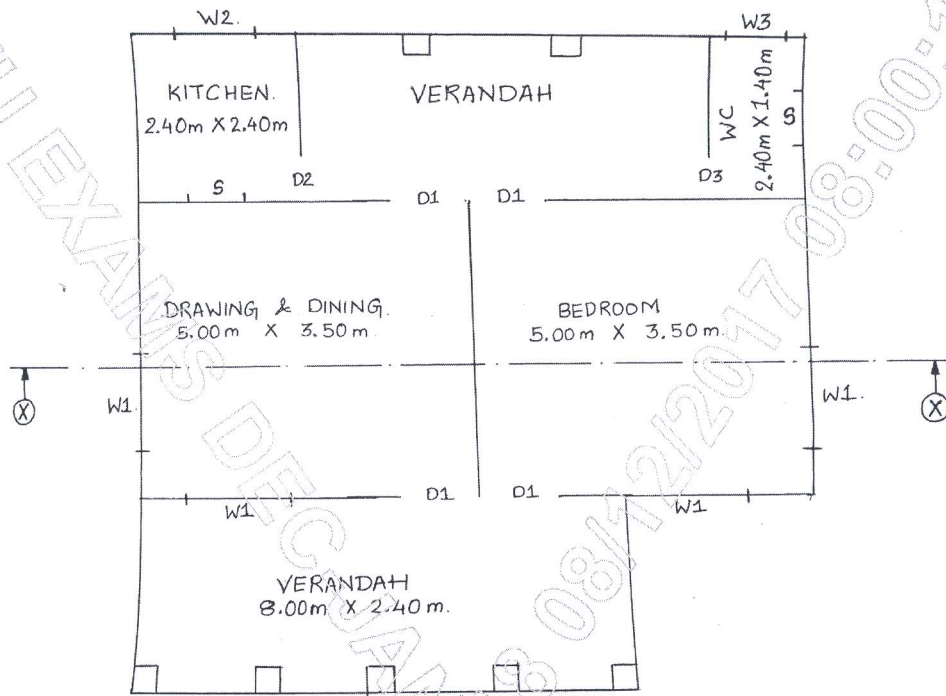


Fig. Q3

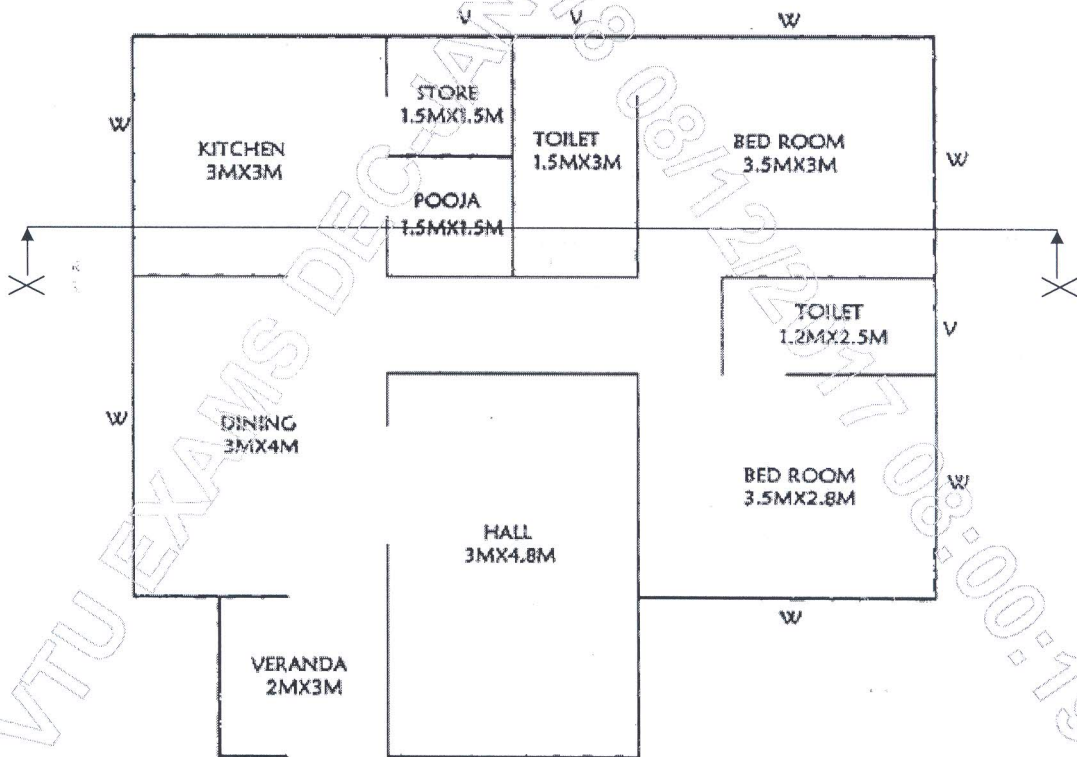


Fig. Q4

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Time: 3 Hours

Max. Marks: 80

**Note:** Answer any *TWO* full questions. Assume any missing data suitably.

- Q1.** A square RCC column 450X450 mm is resting on a sloped RCC square footing. The depth of foundation is 1.3 m below the ground level. The size of footing is 1400X1400mm. Thickness of PCC bed is 150mm. The depth of footing is reduced to 650 mm at the face of column to 250 mm at the edge of the footing. The column reinforcement consist of 6 bars of 20mm dia, with 2 legged 8 mm dia stirrups at 200 mm c/c and the footing reinforcement consist of 12 mm dia bars @ 125 mm c/c, both ways. Draw to scale the following :
- Plan of the footing showing the reinforcement details.
  - Vertical section of the column with footing
  - Cross section of column.

(30 Marks)

OR

- Q2.** A One way slab for a hall of internal dimension 7.0 m x 11.77m has the following details:
- Thickness of slab=150mm
  - Wall thickness =230mm
  - Mail steel along short span =10 mm #@100mm c/c
  - Distribution steel=8 mm #@150mm c/c
- Draw to suitable scale the following
- Plan showing the reinforcement details
  - Cross section of slab @mid span along short span
  - Cross section of slab @mid span along long span

(30 Marks)

- Q3.** The line diagram of a residential building is given in Fig Q3. Draw to scale the following :
- Plan at sill.
  - Front elevation.
  - Section along AA'.
  - Schedule of openings.

(50 Marks)

OR

- Q4.** The line diagram of a Hostel building is given in Fig Q4. Draw to scale the following :
- Plan at sill.
  - Front elevation.
  - Section along XX.
  - Schedule of openings.

(50 Marks)

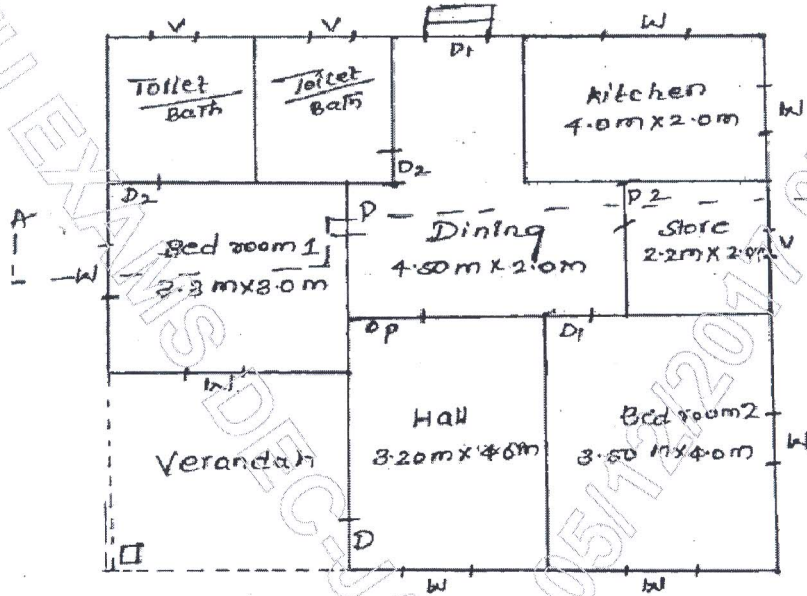


Fig. Q3

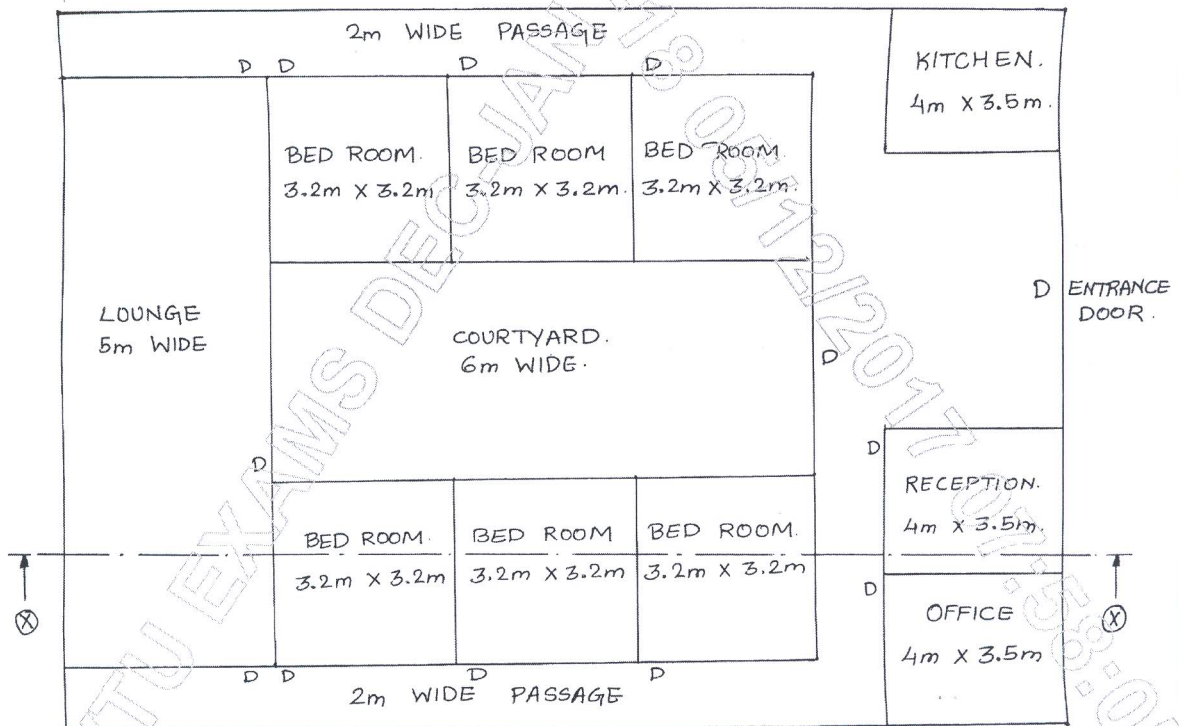


Fig. Q4

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**Fifth Semester B.E. Degree Examination, December 2017  
(CIVIL ENGINEERING)**

**COMPUTER AIDED BUILDING PLANNING AND DRAWING**

Time: 3 Hours

Max. Marks: 80

**Note:** Answer any *TWO* full questions. Assume any missing data suitably.

- Q1.** A square RCC column 500X500 mm is resting on a sloped RCC square footing .The column carries a total load of 80 tonnes. The SBC of the soil is 20 t/m<sup>2</sup>. The depth of foundation is 1.5 m below the ground level. The depth of footing is reduced to 700 mm at the face of column to 300 mm at the edge of the footing. The size of footing is 1400x1400 mm. thickness of PCC bed is 150 mm.The column reinforcement consist of 8 bars of 16mm dia, with 2 legged 8 mm dia stirrups at 200 mm c/c and the footing reinforcement consist of 12 mm dia bars @ 150 mm c/c ,both ways .Draw to scale the following :
- Plan of the footing showing the reinforcement details.
  - Vertical section of the column with footing
  - Cross section of column

(30 Marks)

OR

- Q2.** Draw a cross section and plan of a RCC dog legged stair for a building having the following particulars:  
Clear size of stair hall=2.5X4.5m  
Width of landing=1.2m  
Width of each flight=1.2m  
Rise=150 mm Tread=300 mm  
Thickness of waist slab=150 mm  
Height of floor=3.6 m

(30 Marks)

- Q3.** The line diagram of a residential building is given in Fig Q3. Draw to scale the following :
- Plan at sill.
  - Front elevation.
  - Section along XX.
  - Schedule of openings.

(50 Marks)

OR

- Q4.** The line diagram of a Hostel building is given in Fig Q4. Draw to scale the following :
- Plan at sill.
  - Front elevation.
  - Section along XX.
  - Schedule of openings.

(50 Marks)

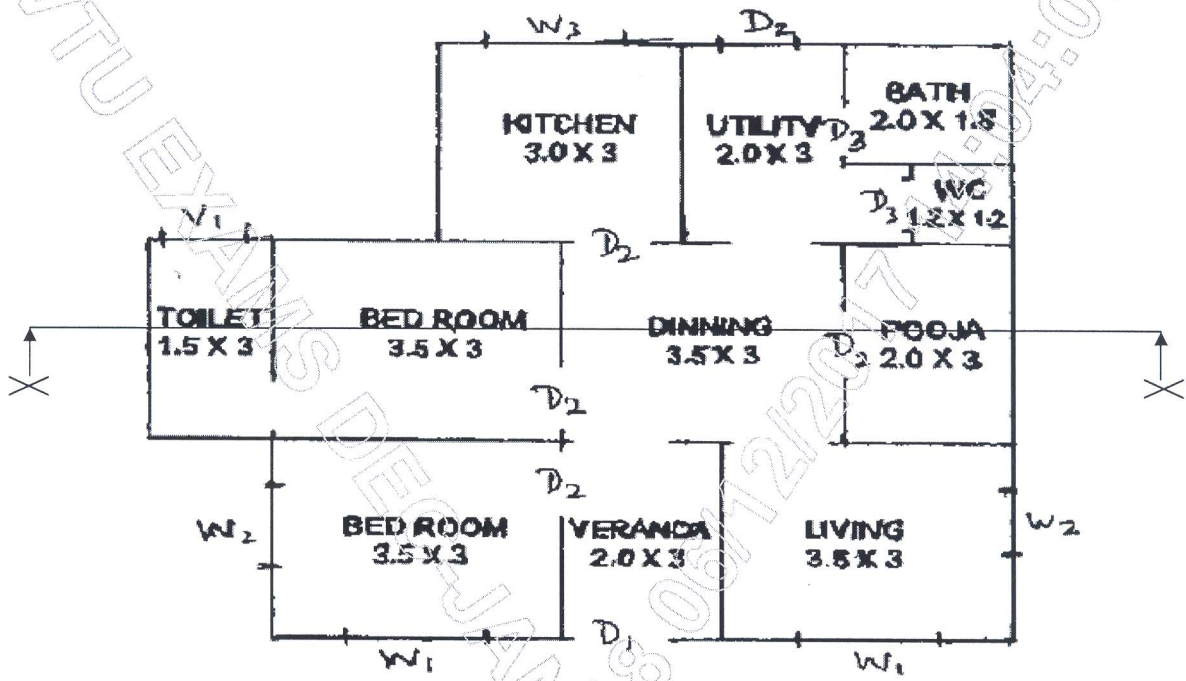


Fig. Q3

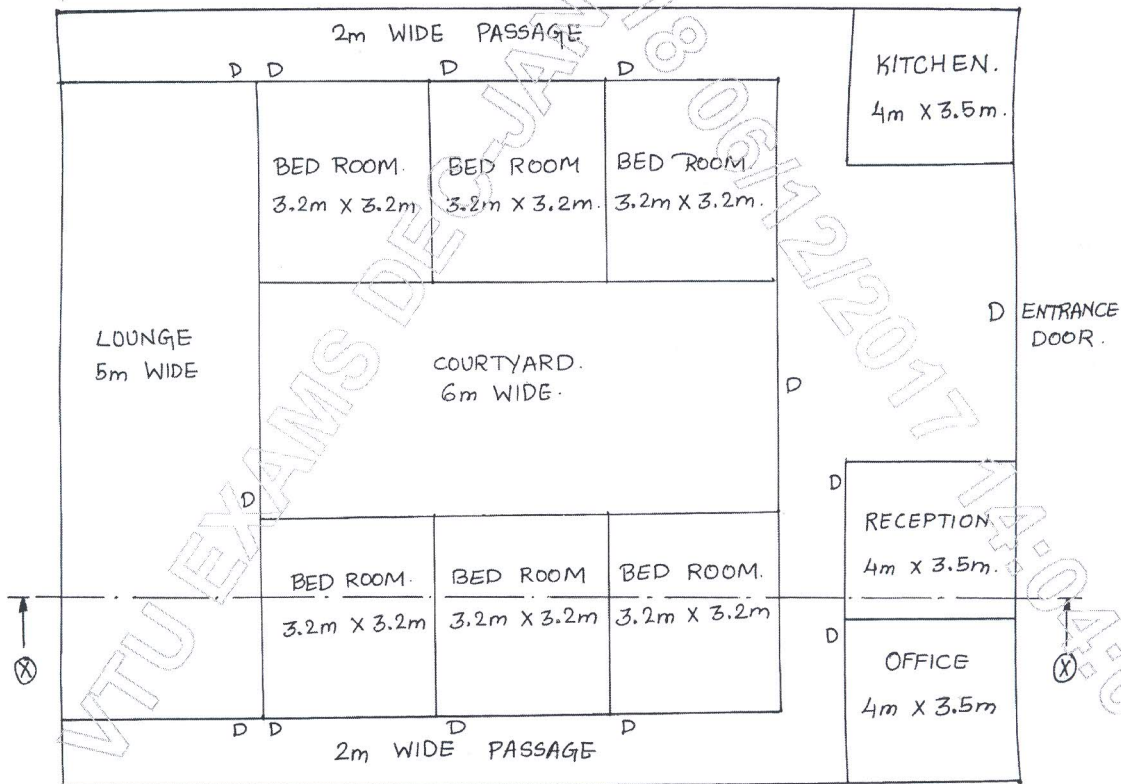


Fig. Q4