C20-C–**307**

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 is 900 mm.
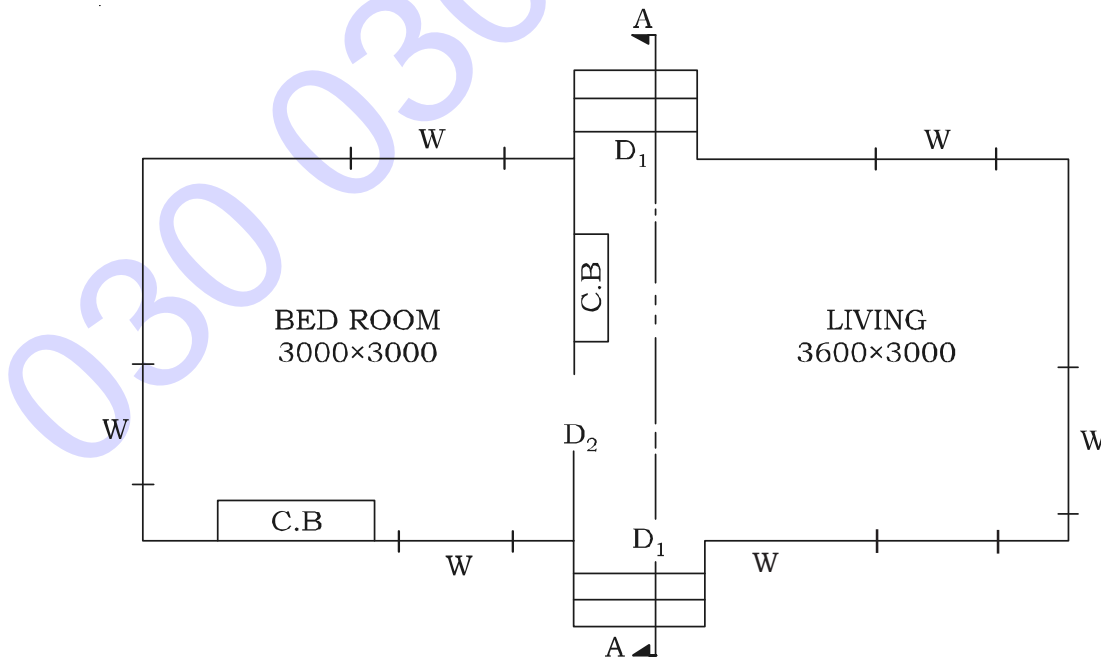

Figure - 1

2. Draw the electrical wiring diagram in a single bed roomed residential building as shown in the fig.

Electrical fittings required :

In bed room = 1 Fan,1 Lamp, 1 Tube light, 1-5A Socket outlet.

Kitchen and Dining = 1 Fan, 2 Lamps, 1 Tube light, 1 Exhaust Fan, 2 nos 5A Outlet Socket, 1-15A Socket.
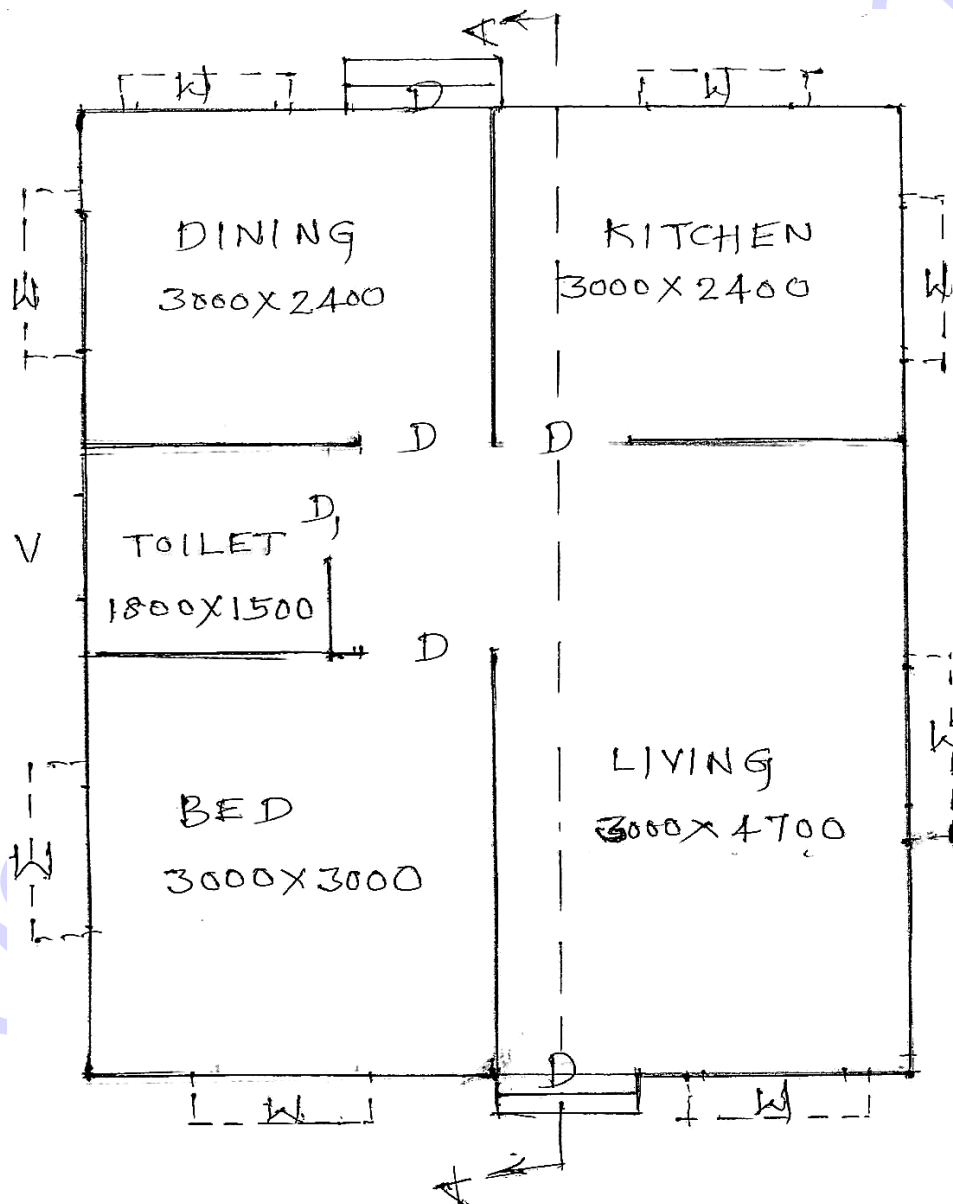
In Bath and Toilet = 1 Lamp, 1-Exhaust Fan,1-15A Socket.

Figure - 2

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. With the given line sketch and with the following specifications of a residential building, draw to scale of 1:50 the plan and section along A-A.

Specifications :

(a) Foundations : The depth of foundation shall be 1100 mm below ground level with cement concrete bed (1:4:8) in the foundation 1000 mm wide and 300 mm deep.

Width of first and second footings will be 700 mm and 500 mm where as depth of both footings will be 400 mm.

(b) Plinth or basement : The height of basement is 600 mm. Damp proof courses of 50 mm thick shall be provided under the superstructure walls. Thickness of walls in basement is 300 mm.

(c) Superstructure : The walls in the superstructure will be of brick masonry in C.M. (1:6) and all the walls are 200 mm thick.

(d) Lintels and sun shades : Lintels with R.C.C. (1:1/2:3) are provided on all openings and depth is 150 mm with a bearing 150 mm on either side.

Sunshades 100 mm thick at the wall face and 75 mm thick at free end are provided projecting from lintels over all openings.

(e) Height of superstructure : The walls in the superstructure are taken to a height of 3300 mm i.e., up to the bottom of roof slab.

(f) Roofing : Roofing consists of R.C.C. (1:2:4) slab 110 mm thick and weatherproof course with two courses of flat tiles in C.M. (1:4) 50 mm thick is laid over R.C.C. slab.

(g) Flooring : Flooring shall be of polished Shahabad stone slab 25 mm thick cement concrete (1:3:6) over sand filling in the basement.

(h) Parapet : Parapet 100 mm thick and 700 mm height with brick masonry shall be constructed all round the building.

(i) Steps : Steps are provided in front side and rear side of length 1200 mm.

Tread = 300 mm and rise of step = 150 mm. These are provided over 150 mm C.C. offset on all sides.

Schedule of doors and windows : -

Doors-D	1000 mm × 2100 mm
Doors-D_1	900 mm × 2000 mm
Windows-W	1200 mm × 1500 mm
Ventilator-V	600 mm × 200 mm

DINING

3000 X 2400

KITCHEN

3000 X 2400

LIVING

3000 X 4700

TOILET

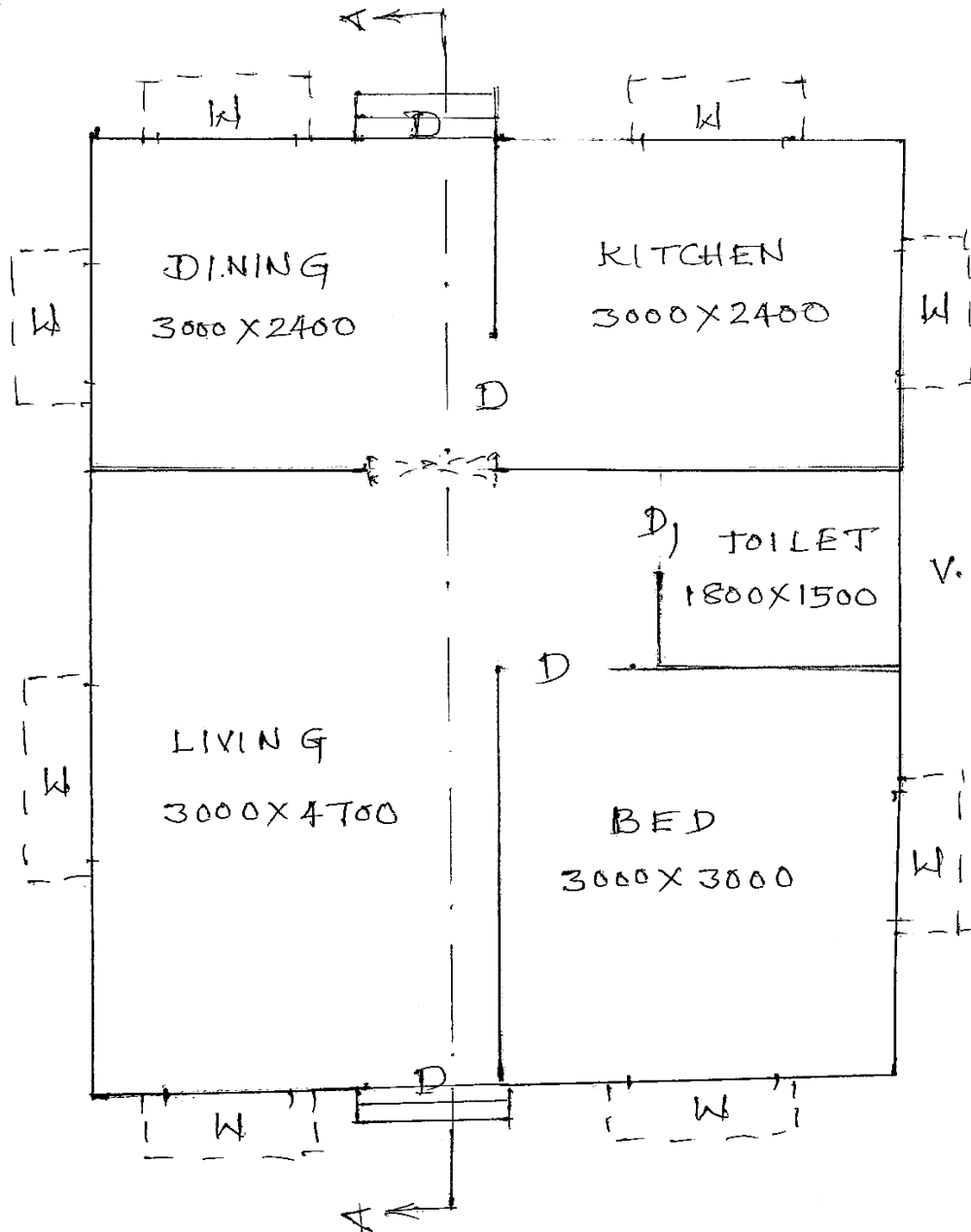1800 X 1500

V.

BED

3000 X 3000

Figure - 3

4. Draw the line diagram showing the functional requirements of a primary school building consisting of class rooms, head master room, store room, staff room, office room, toilets for girls and boys separately to a suitable scale.

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