Example 2.15. Draw the wiring diagram for a residential house. The circuit should consist of separate panels for lighting and power controls. Draw the circuit starting from energymeter, main switch etc. Show at least four subcircuits on each lighting and power circuits.

Solution.

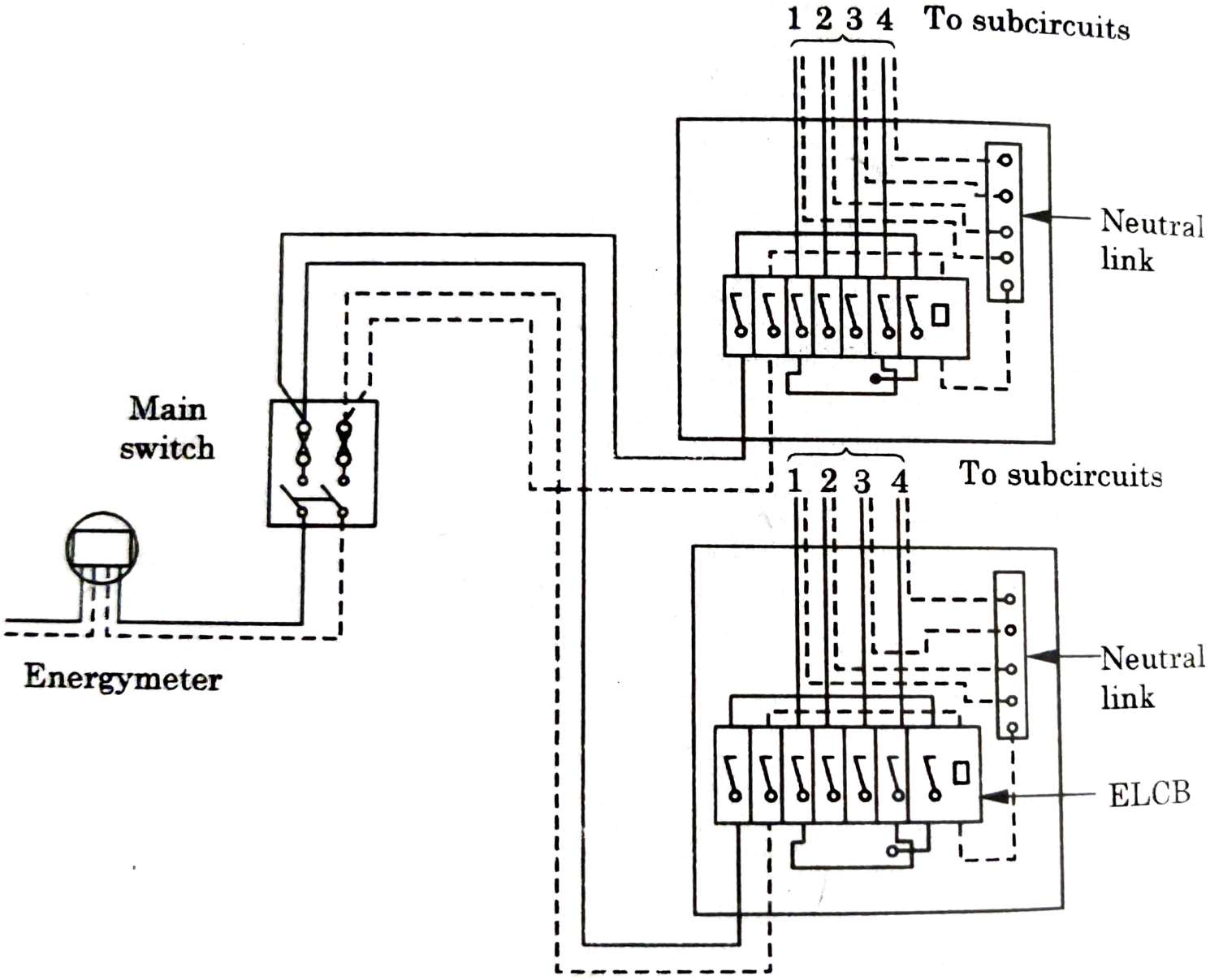


Fig. 2.47 : Wiring diagram

Example 2.21. Draw the wiring diagram of fluorescent tube controlled from one s

Solution.

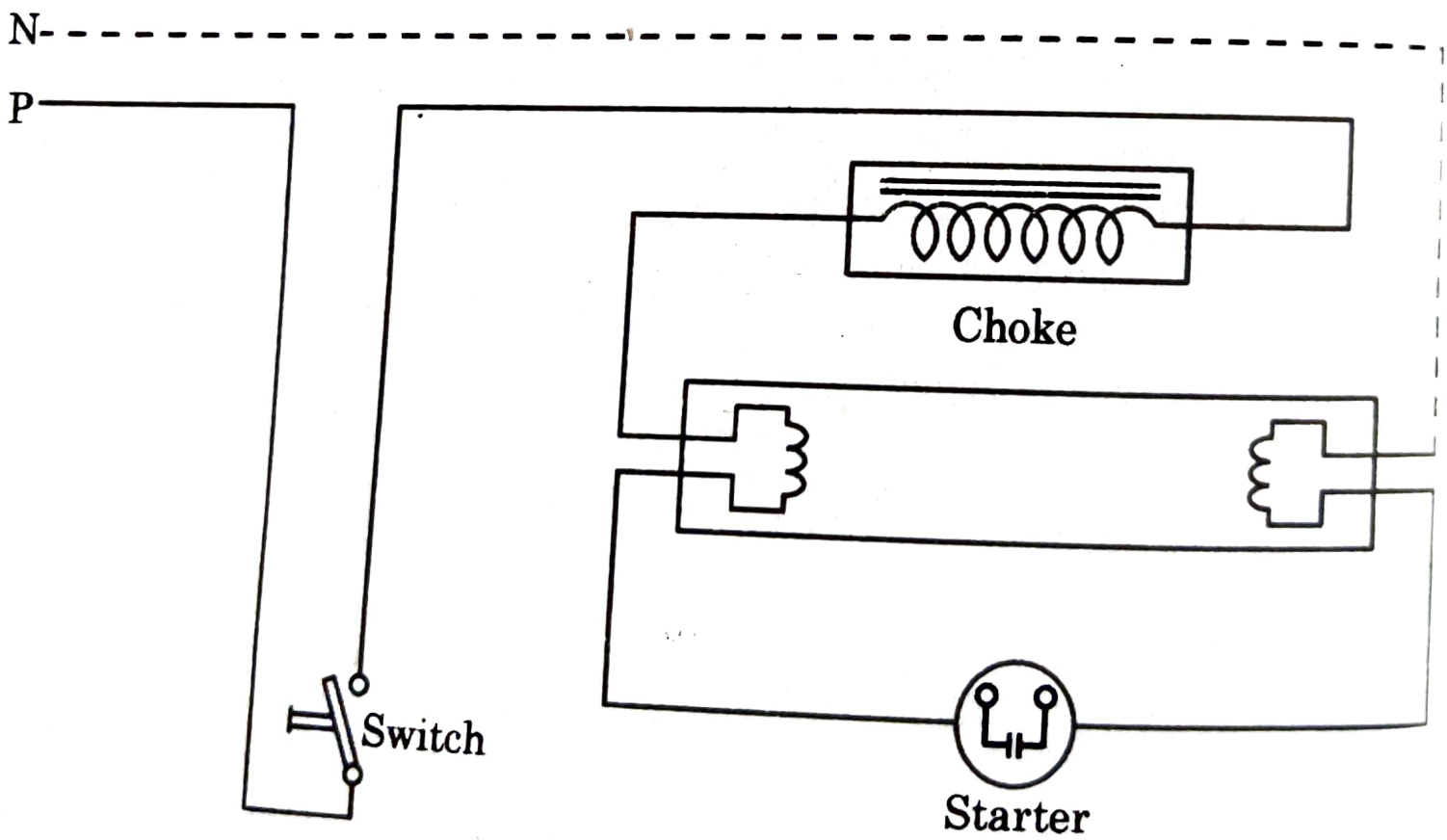


Fig. 2.60 : Wiring diagram of fluorescent tube light

Example 2.26. The plan of a single room 6m × 4m is given in fig. 2.64 below. Draw the installation plan and wiring diagram.

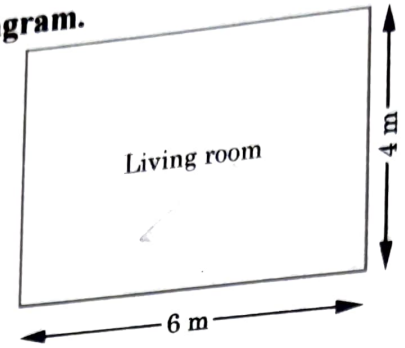
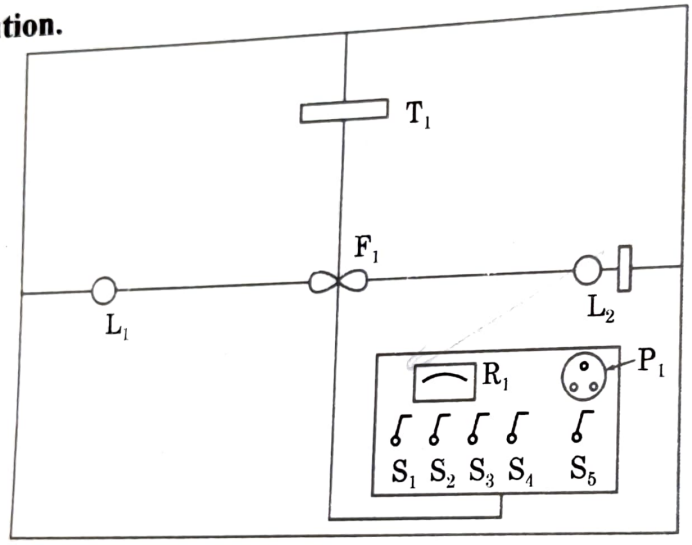


Fig. 2.64

Solution.



T_1 = Tubelight
L_1 = Lamp
S_1, S_2, S_3, S_4, S_5 = Switches
R_1 = Regulator
P_1 = Socket Outlet

Fig. 2.65 : Installation plan

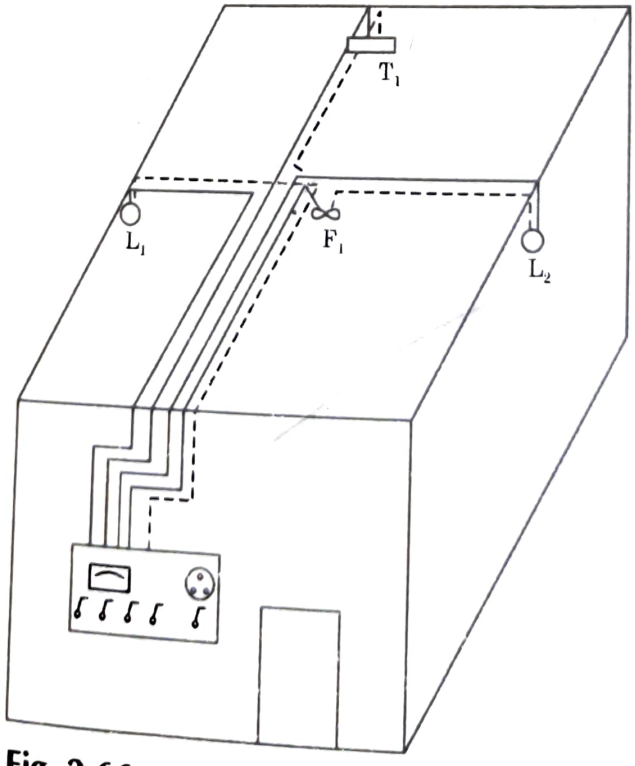


Fig. 2.66 : Installation plan in 3D view

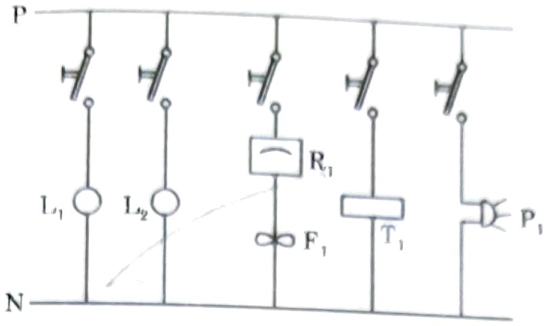


Fig. 2.67 : Schematic diagram

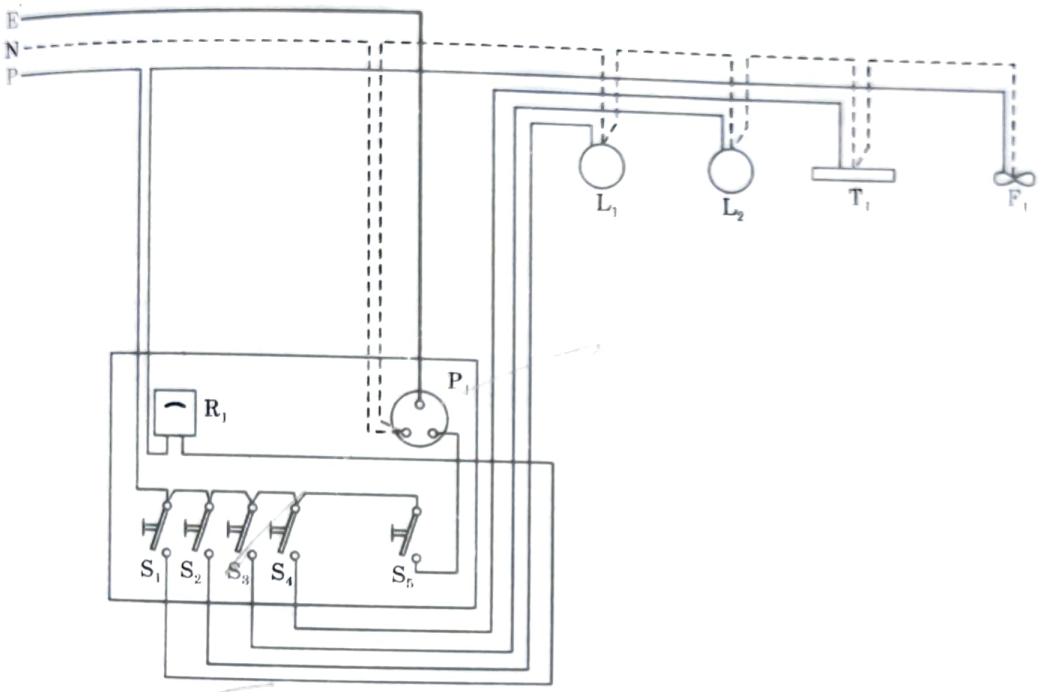


Fig. 2.68 : Wiring diagram

Example 2.27. The plan of a two room set is shown in fig. 2.69 below. Draw the installation plan and wiring diagram for doing wiring of the rooms. Assume the height of the roof is 3.5 m. One plug point is to be provided in each room.

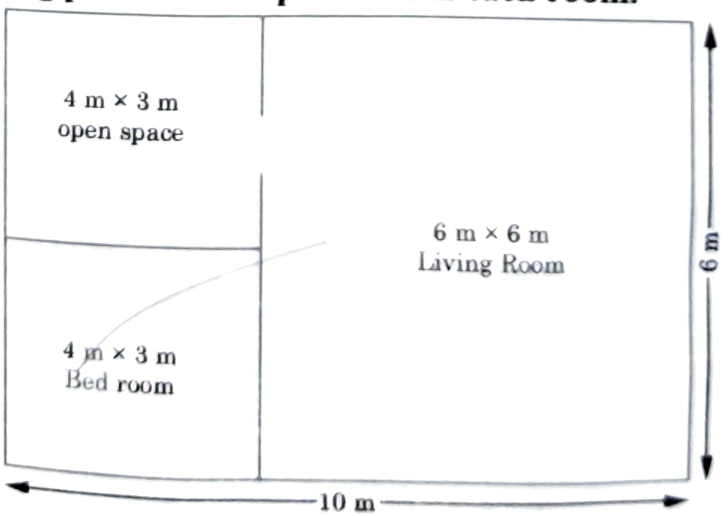


Fig. 2.69 : Plan of the House

Solution. The installation plan for doing wiring of the rooms shown in fig. 2.70 is show
Fig. 2.70 below.

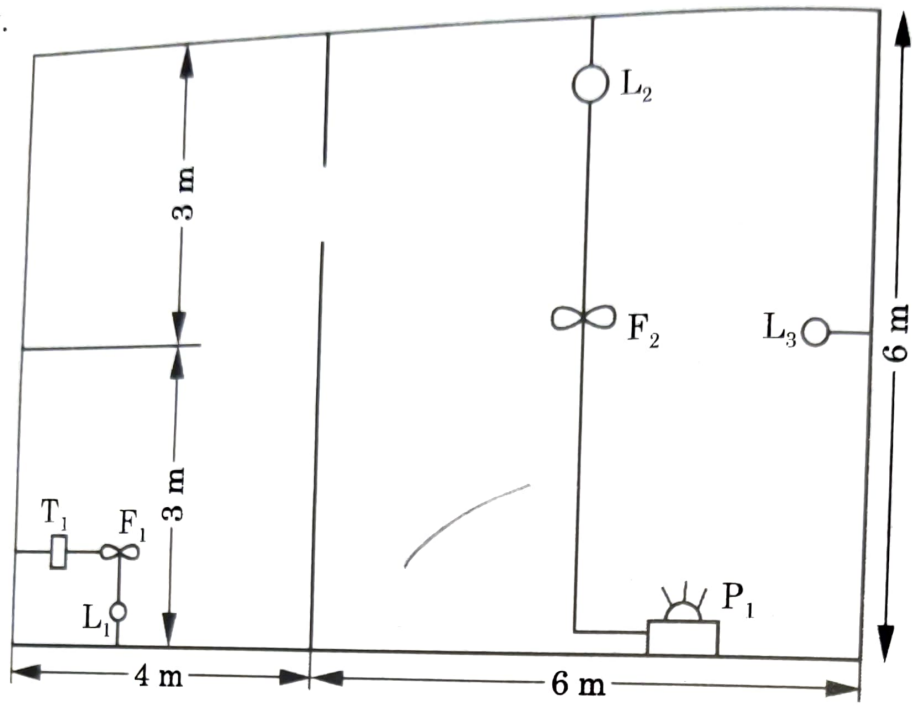


Fig. 2.70 : Installation plan

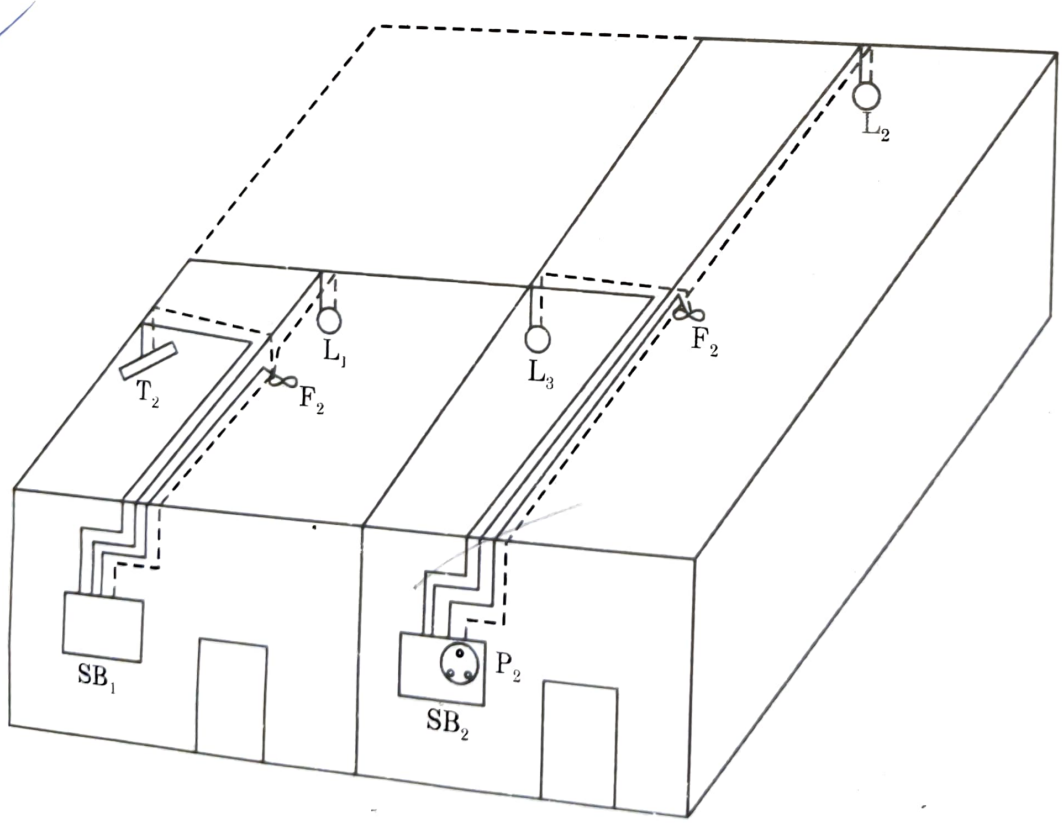


Fig. 2.71 : Installation plan in 3D view

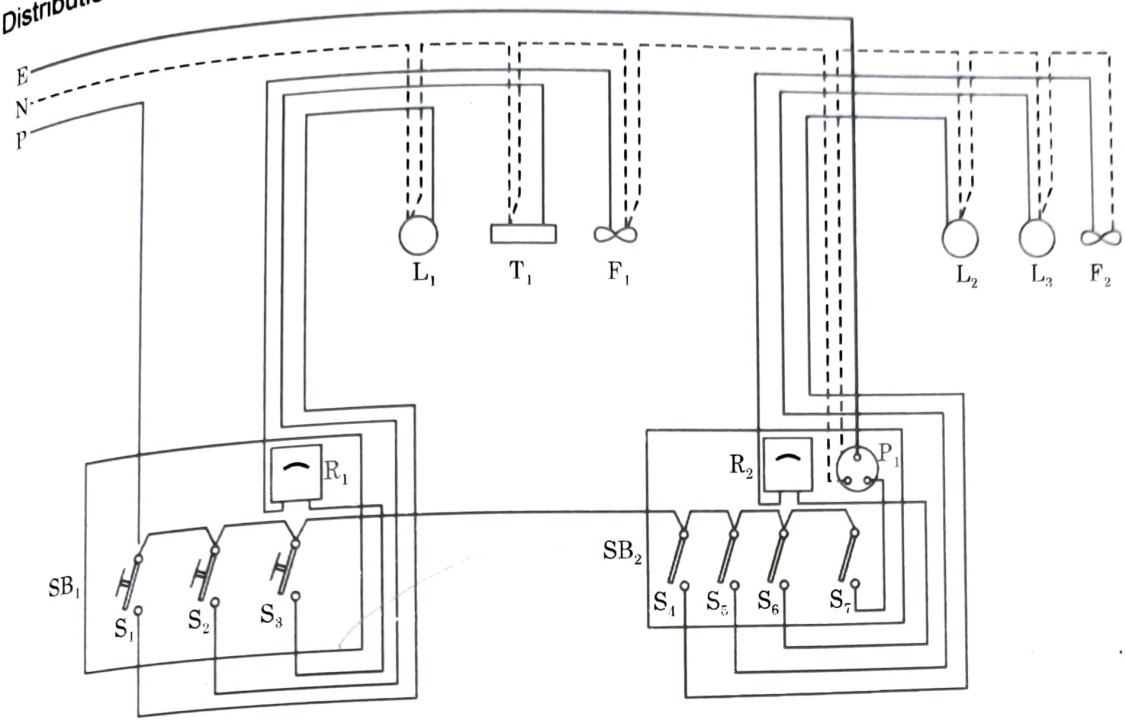


Fig. 2.72 : Wiring diagram

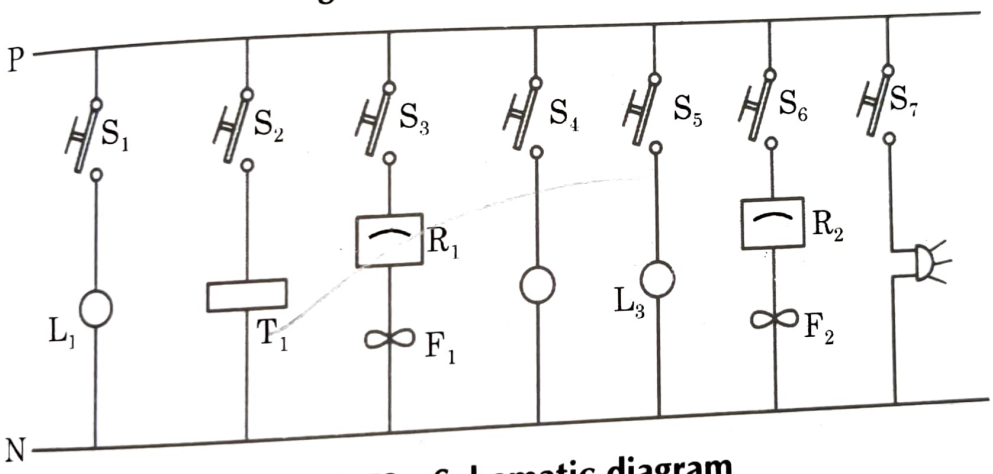


Fig. 2.73 : Schematic diagram

Example 2.28. The plan of a two room set consisting of a room of size 4m × 4m and a store of size 2m × 4m is drawn in fig. 2.74 below. Draw the installation and wiring diagram.

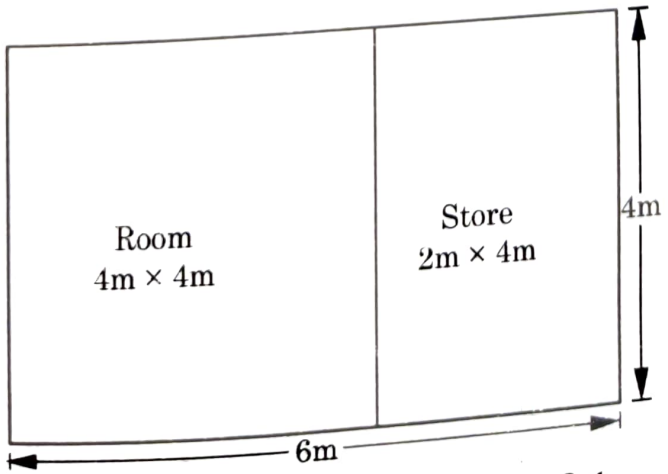


Fig. 2.74 : Plan of Two Room Set

Example 2.30. Draw the single line diagram showing electrical connection to two no. 3 phase motors. The circuit should consists of energymeter, main switch, starters etc.

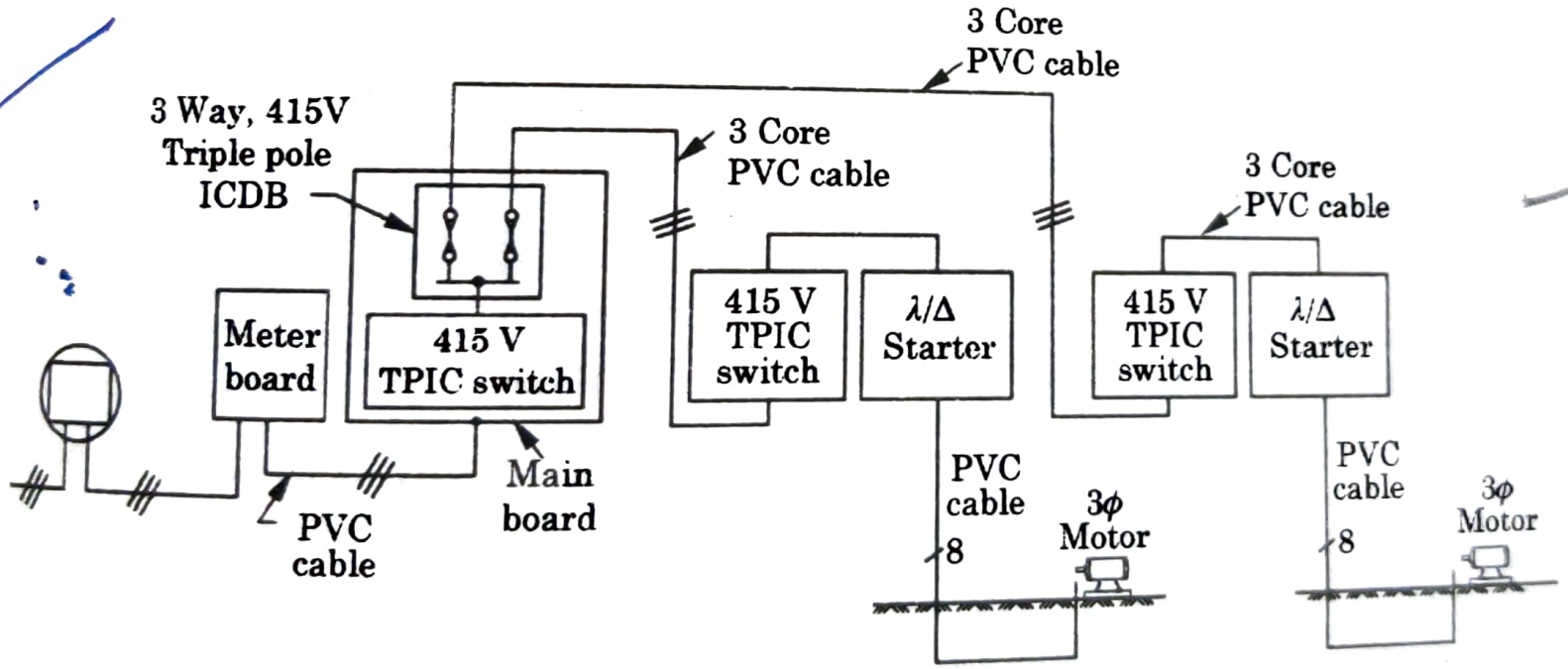


Fig. 2.79 : Single Line Diagram

Example 2.31. Power supply to a 3phase 10 H.P induction motor is to be given which is installed in a room of size 6m × 5 m high. The motor is one meter away from the wall. Draw the installation plan and wiring diagram showing locations of energymeter, main switch, 3φ induction motor etc.

- Students does not confused among 400V, 415V, 440V in 3-ϕ system.
- India standard voltage in 3-ϕ system is **400V.** (Because $230V \times \sqrt{3} \simeq 400V$)
- Due to voltage drop in lines actually our line voltage is **415V.**
- 440V Never exist, 3 phase equipment design for Higher voltage than actual *i.e.* 440V. 50, 415/440V

write on body of

Solution.

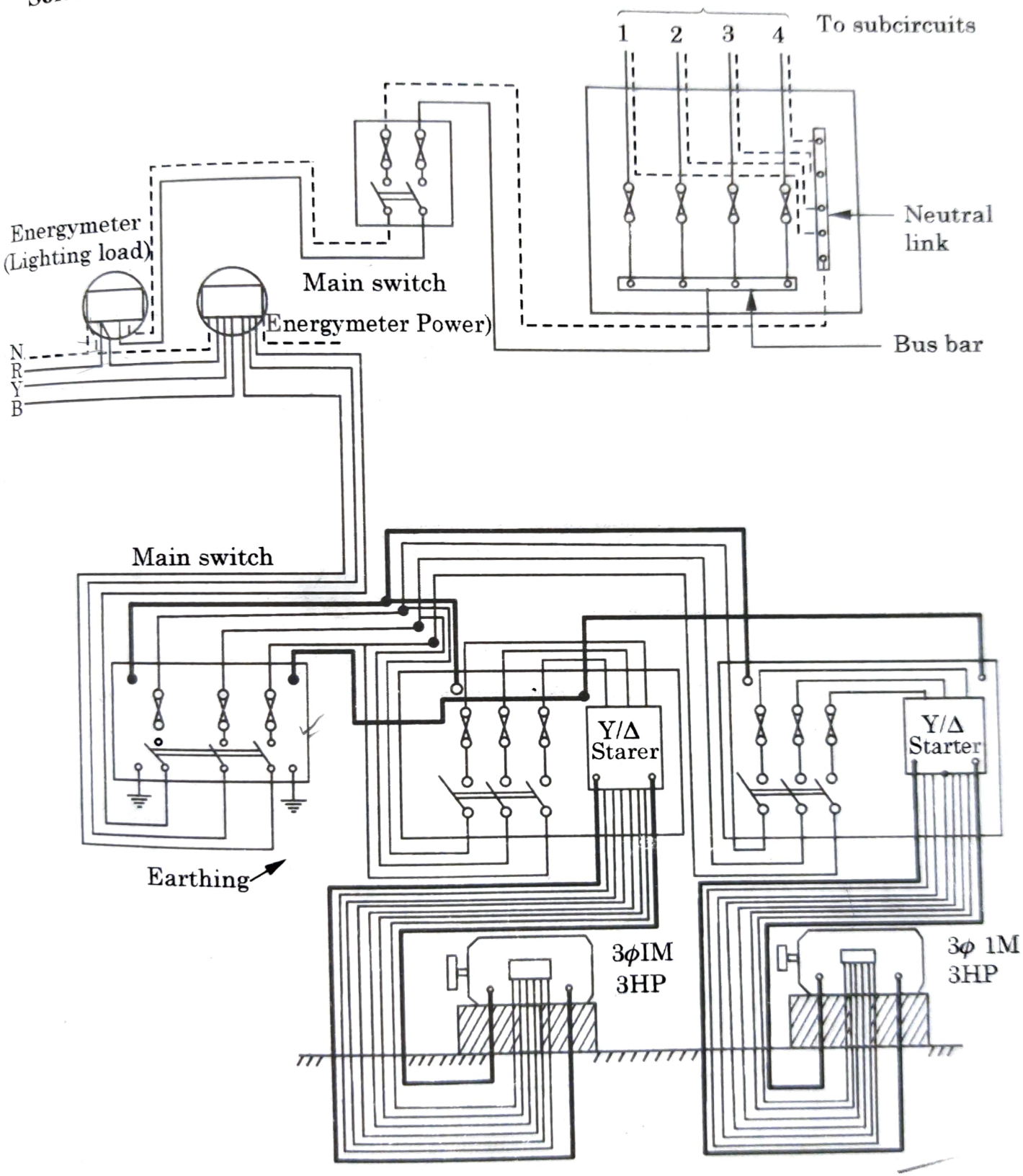


Fig. 2.83 : Wiring diagram

EXERCISE