DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING
BANGLADESH UNIVERSITY OF ENGINEERING & TECHNOLOGY
EEE 414: Electrical Service Design

EXPERIMENT NO.4: SWITCHBOARD CONNECTION DIAGRAM

OBJECTIVE:

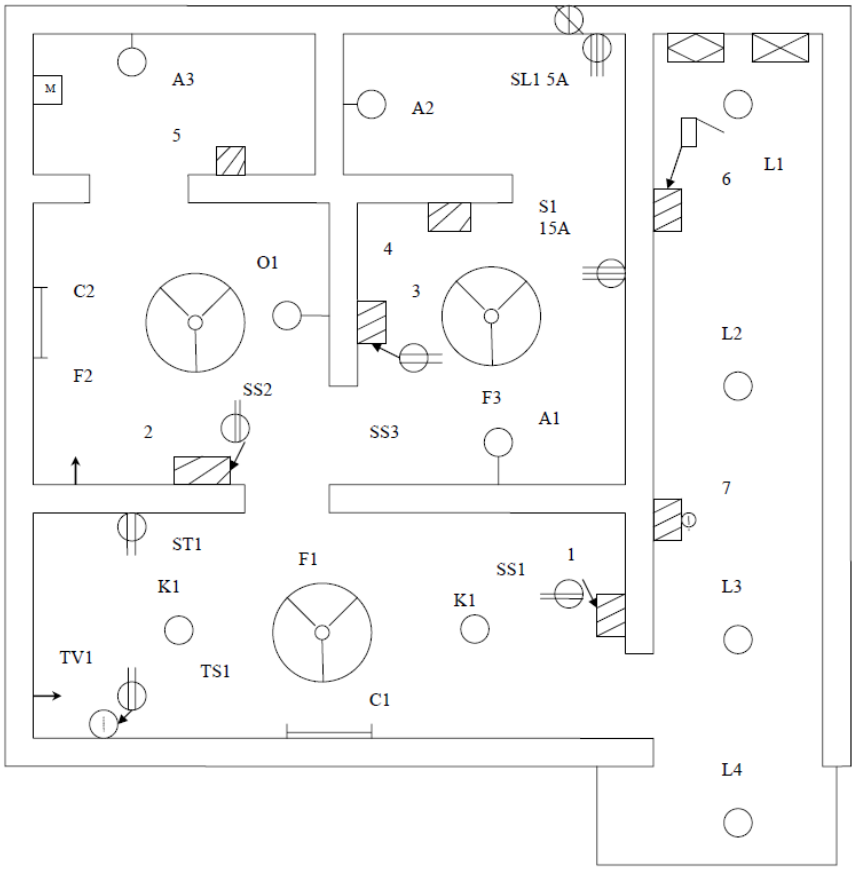
To learn and draw a switchboard connection diagram with its various components.

INTRODUCTION:

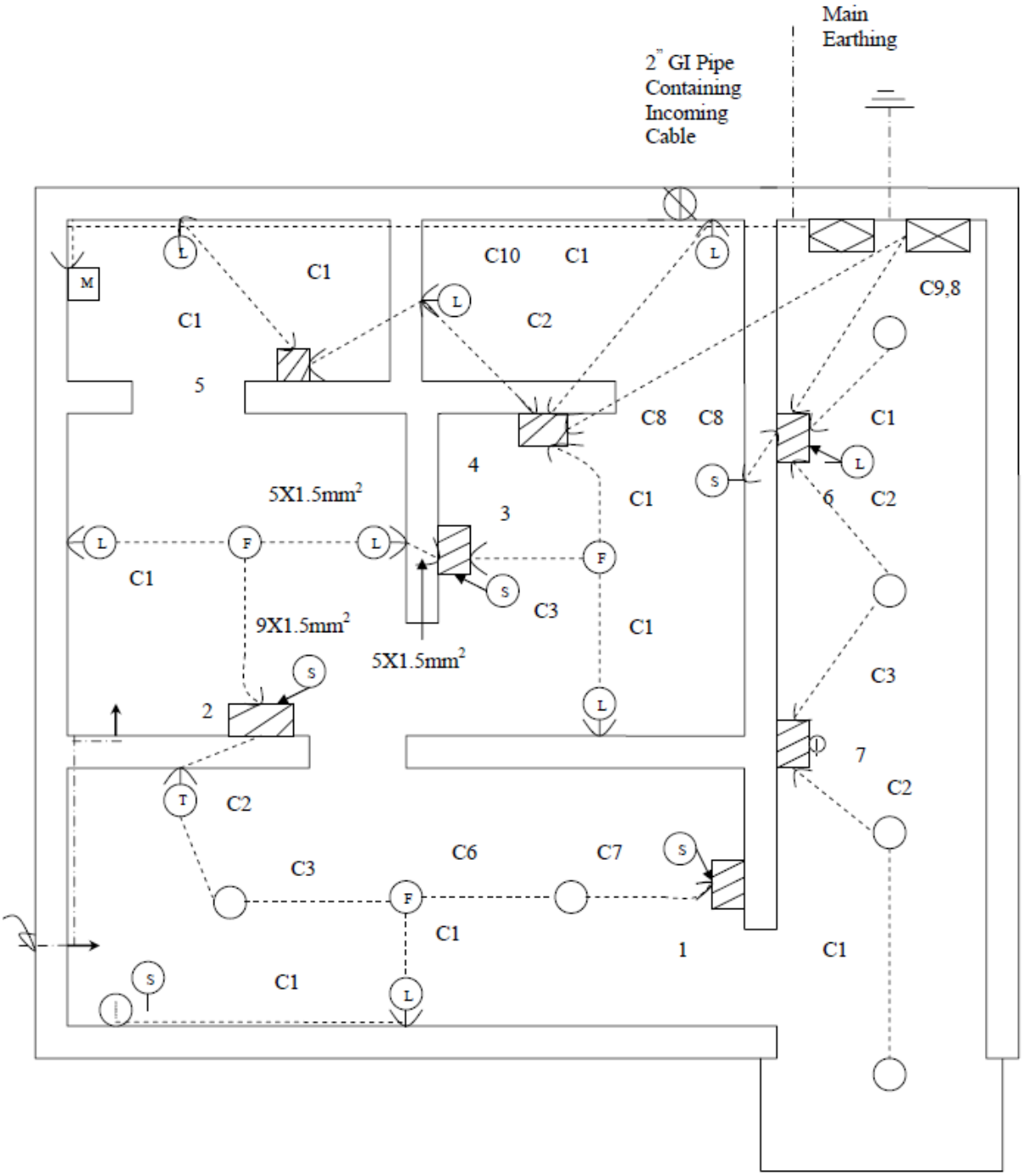
A switchboard diagram shows how the incoming electric power is distributed throughout a building. Along with general connectivity, different wire schedules and protection equipment such as circuit breakers are shown. Moreover, various complicated wiring can be done which is often not clear from the conduit layout. They are clearly specified in the switchboard connection diagram.

PROCEDURE:

1. Consider the following fittings and fixture layout.



2. The conduit layout for this fitting and fixture layout is given below:



Note, here the wall bracket light O1 is connected to both switchboard 2 and 3. The connection is done in such a way that switches in both switchboard 2 and 3 can toggle the light on or off. This is a Two-way switch.

Two-way switches are a special type of switching condition where an appliance is driven by two switches from two different locations. To create a two-way switch SPDT (Single Pole

Double Through) switches need to be used. This is shown in the figure below. In this case, three wires are drawn from each switchboard.

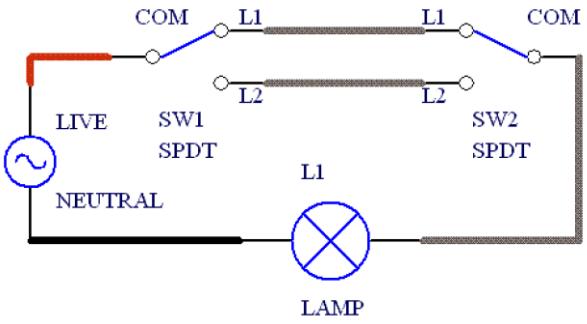
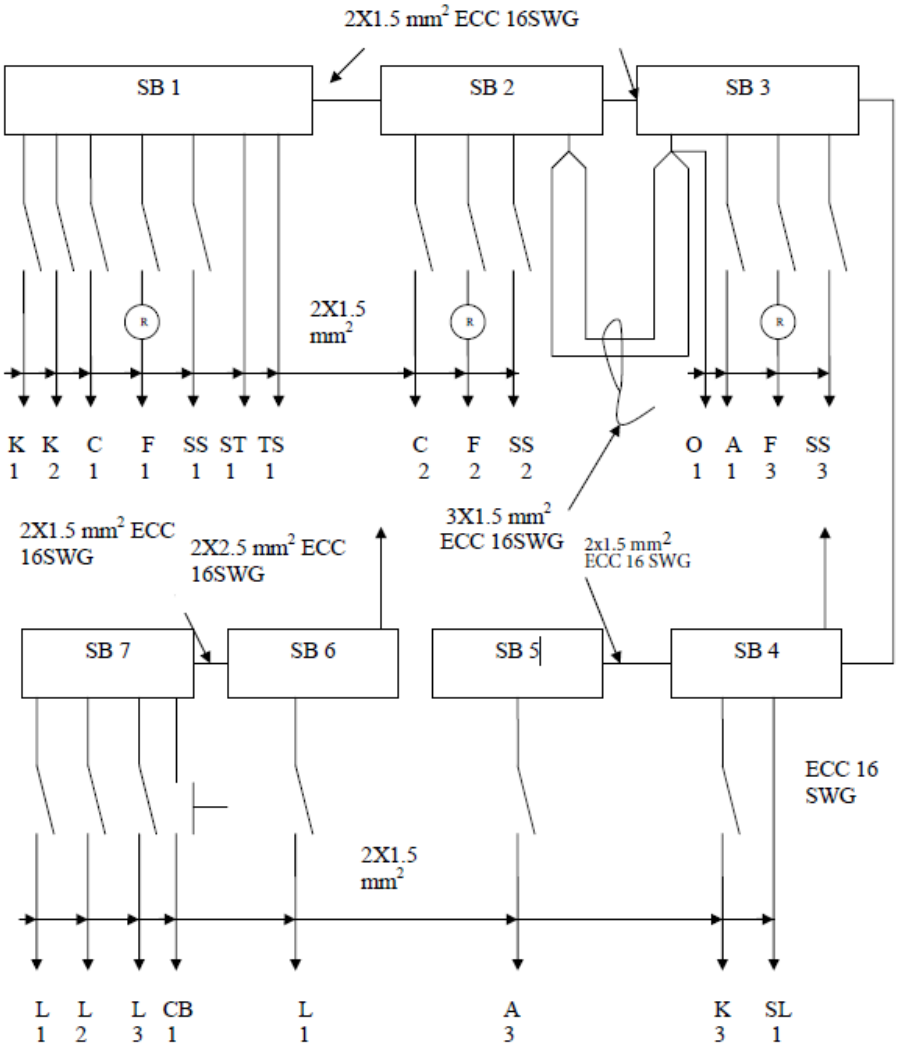
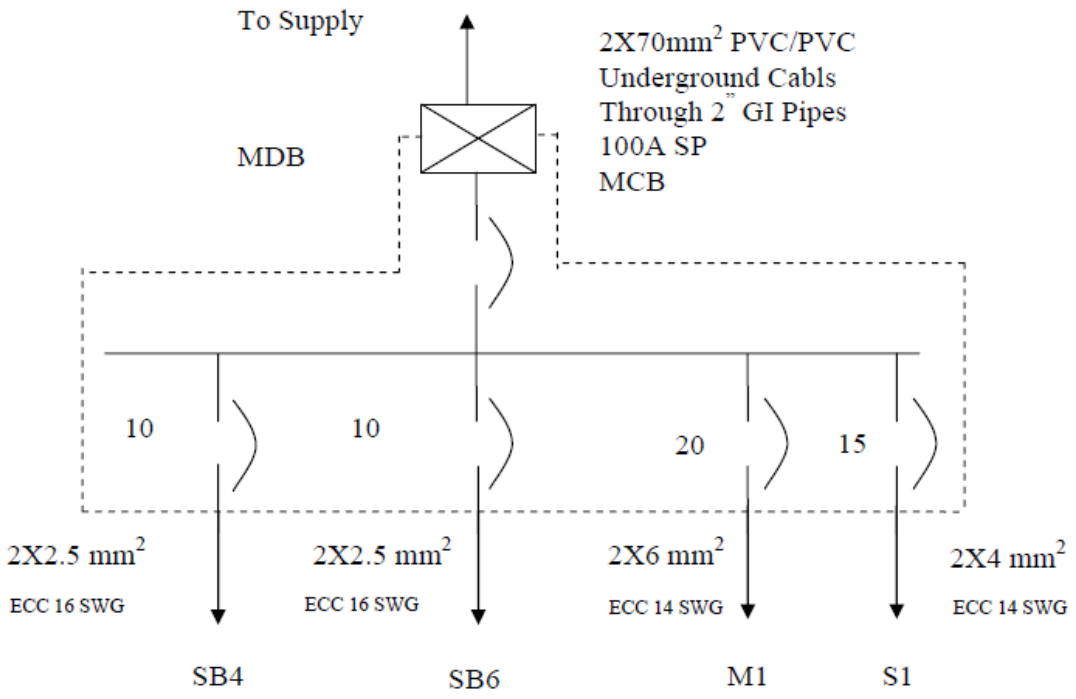


Figure: Two-way switching.

3. The switchboard diagram for this layout is given below:



4. The Distribution board connection diagram is shown below:



TASK:

Draw the switchboard connection diagram and distribution board connection diagram for your design from Experiment 3. Have at least one appliance connected as a two-way switch. Place the appropriate wires and circuit breakers for your design.

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