

HOUSE WIRING

INTRODUCTION:

Electrical wiring is defined as a system of electrical conductor, components and apparatus for conveying electric power from the source to the point of use. Power is supplied domestic installation through a phase and a neutral forming a single phase AC 230 V two wire system. For industrial establishment, power is supplied through three-phase wire system to give 440 V. The neutral is earthed at the distribution substation of the supply. When supplied to domestic utilities, phase is fed to a kilowatt meter and then to a distribution panel. The panel distribution passes along with circuits.

ELEMENTS OF HOUSE WIRING:

1. Fuses and circuit breakers: 7

These are devices designed to provide protection to a circuit against excess current.

2. Electric Switch:

This is a device that makes and breaks or changes the course of electric circuit.

3. Plug:

It is a device carrying two or three metallic contacts in the form of pins, intended for engaging with corresponding socket contacts and arranged for attachment to appliances such as radio, T.V., Fan etc.

4. Socket outlet:

It is a device carrying two or three contact designed for engagement with corresponding plug pins and arranged for connection to fixed wiring.

5. Lamp Holder:

Lamp Holder is designed to hold lamps and connect there in the circuit.

6. Main Switch:

This is a switch intended to connect or cut off the supply of the electricity to the whole of insulation. It contains one or more fuses.

Combination Plier: It is made of steel and its size is given according to fix length. It has a cutter for cutting the wires.

Electrician knife: It is the tool used for removing the insulation from the wires. It has two folding blades, one for removing the insulation and the other for clearing the wires.

Test Lamp: A test holder with a lamp is called a test lamp. It is used for testing the supply.

Pocker: It is long sharp tool used for making pilot holes in wood before fixing and tightening of wood screws.

Rawl plug tool and bit: It has two parts namely the tool bit and tool holder. The tool bit is made of carbon steel and the tool holder is made of mild steel. It is used for making holes in brick and concrete walls or ceilings. Its size depends upon the number, as the number increases; the thickness of the bit as well as the plug also increases.

Ball peen Hammer: There are different types of hammers used for different purposes. The purpose of ball peen hammer is generally used in electrical trades. The size of hammer is usually indicated by its weight.

Electric soldering Iron: It is used for soldering wires to commutator segments and small joints with solder. It consists of pointed oval copper bit fixed to an iron rod which is heated by an electric element only.

EXPERIMENT NO. E1:

AIM: To prepare a wiring to control two lamps connected in series by one switch.

To prepare a wiring to control two lamps connected in parallel by one switch

TOOLS REQUIRED:

1. Screw driver,
2. Connector,
3. Tester,
4. Lamp holders,
5. One way switch, wires,
6. Wire clips,
7. Nails, Pocker,
8. Bulbs,
9. Wire cutter,
10. Nose plier,
11. Cutting plier,
12. Ball peen hammer

SEQUENCE OF OPERATIONS:

1. The outline of the wiring diagram is marked on the wooden wiring board.
2. Clips are nailed to the board, following the wire diagram.
3. Wires are stretched and clamped with the clips.
4. Wires are connected to the holder and the switch as shown in the above diagram,
Which are then screwed on the board.
5. Bulbs are fitted to the holders.
6. The wiring connections are tested by giving power supply.

EXPERIMENT NO. E1:

AIM: To prepare a wiring to control two lamps connected in series by one switch.

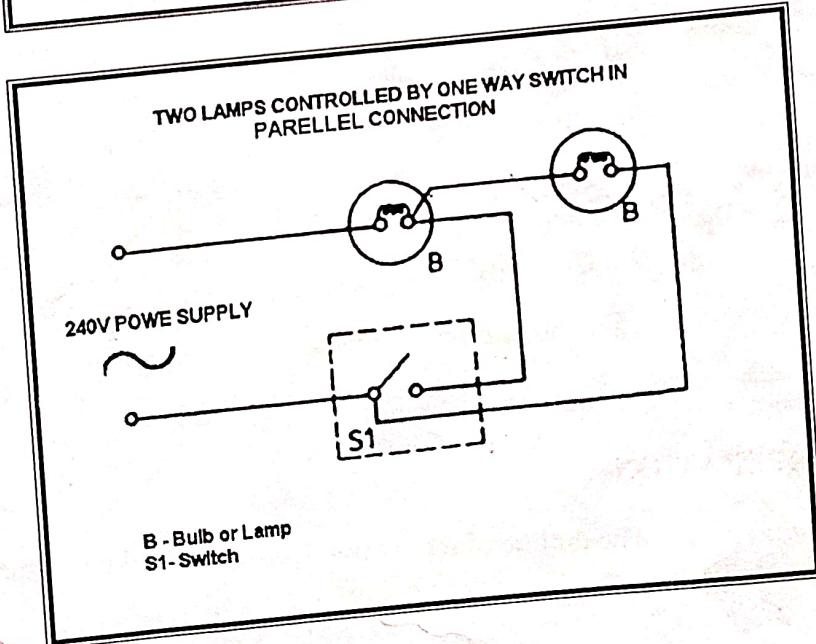
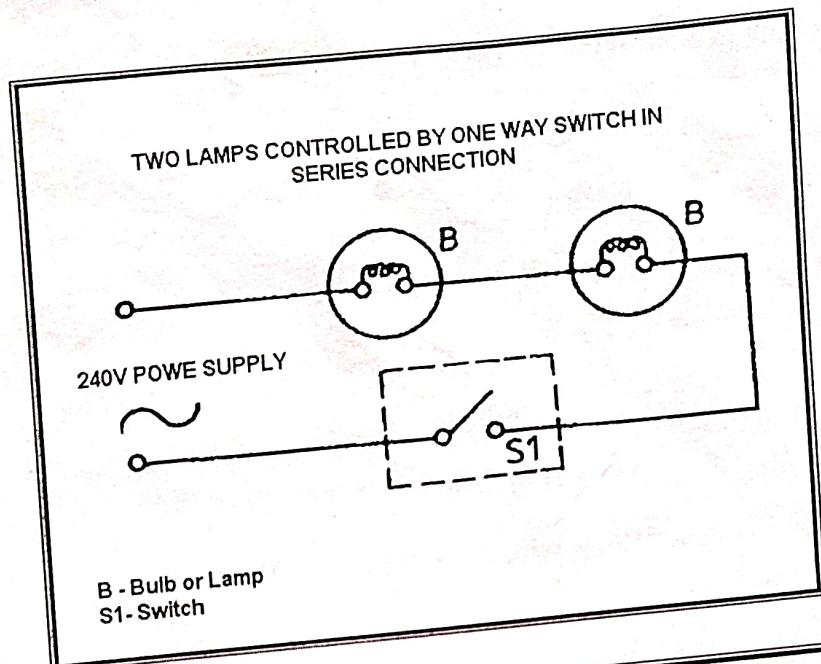
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Which are then screwed on the board.
5. Bulbs are fitted to the holders.
6. The wiring connections are tested by giving power supply.

**PRECAUTIONS:**

1. Never remove a plug from an outlet by pulling the cord.
Always pull by the plug.
2. Whenever there is power failure, put off the power supply to all equipment in order to prevent spontaneous recovery.
3. Put on mains only ascertaining completion of correct wiring.

RESULT:

EXPERIMENT NO. E2:

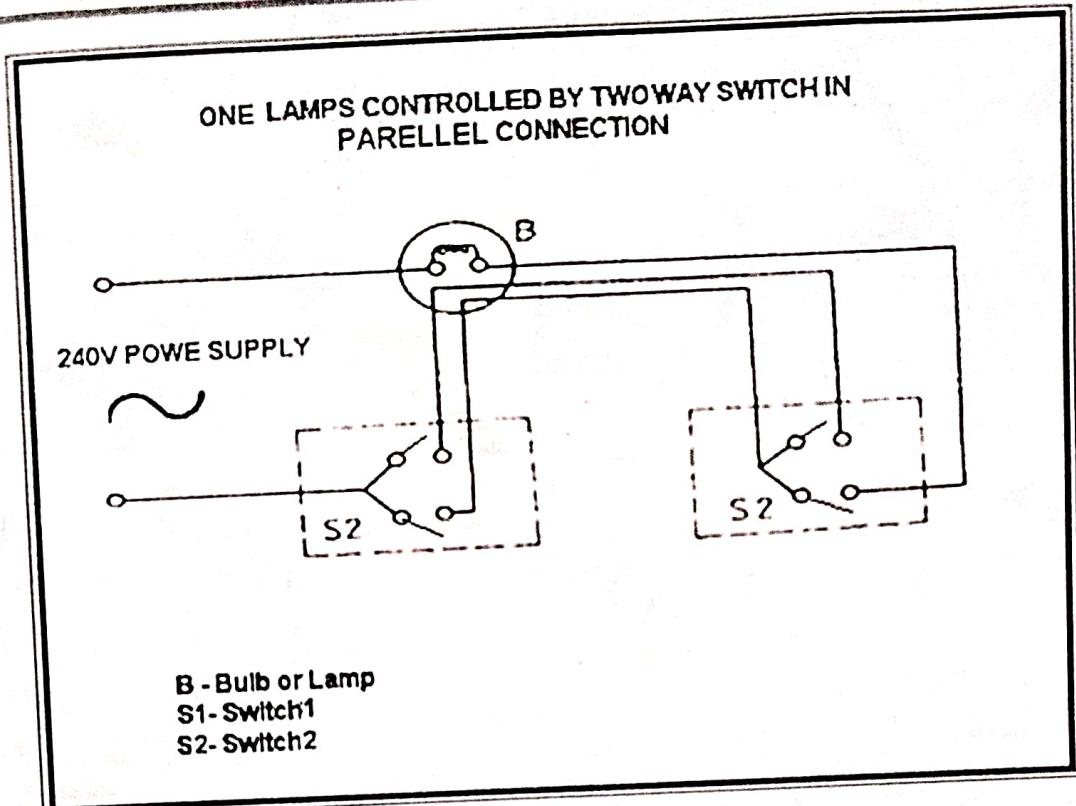
AIM: To prepare a wiring to control one lamp controlled by two 2-way switches.

TOOLS REQUIRED:

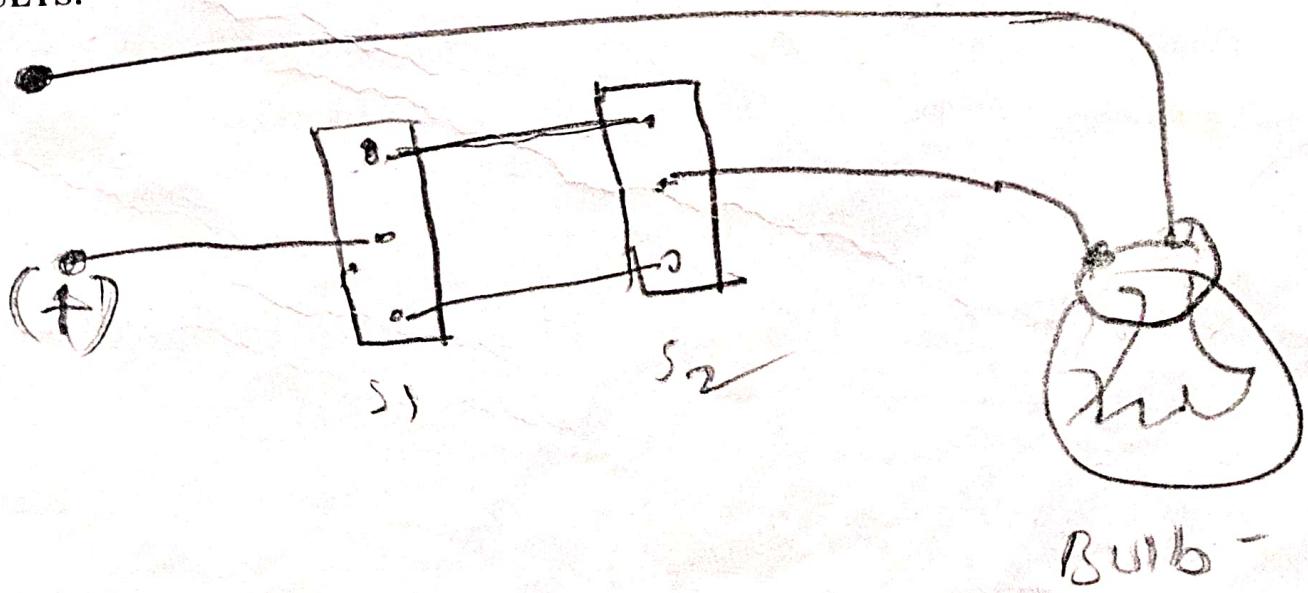
1. Screw driver
2. Connector
3. Tester
4. Lamp holders
5. One way switch
6. Wires, wire clips
7. Nails
8. Pocker
9. Bulbs
10. Wire cutter
11. Nose plier
12. Cutting plier
13. Ball peen hammer

SEQUENCE OF OPERATIONS:

1. The outline of the wiring diagram is marked on the wooden wiring board.
2. Clips are nailed to the board, following the wiring diagram.
3. Wires are stretched and clamped with clips.
4. Wires are connected to the holder and the switch as shown in above diagram, which are then screwed on the board.
5. Bulbs are fitted to the holders.
6. The wiring connections are tested by giving power supply.

**PRECAUTIONS:**

1. Never remove a plug from an outlet by pulling the cord. Always pull the plug.
2. Whenever there is power failure, put off power supply to all equipment in order to prevent spontaneous recovery.
3. Put on mains only after ascertaining completion of correct wiring.

RESULTS:

ONE LIGHT CONTROLLED BY ONE SWITCH +

Aim: To give connections to one lyt controlled by one switch.

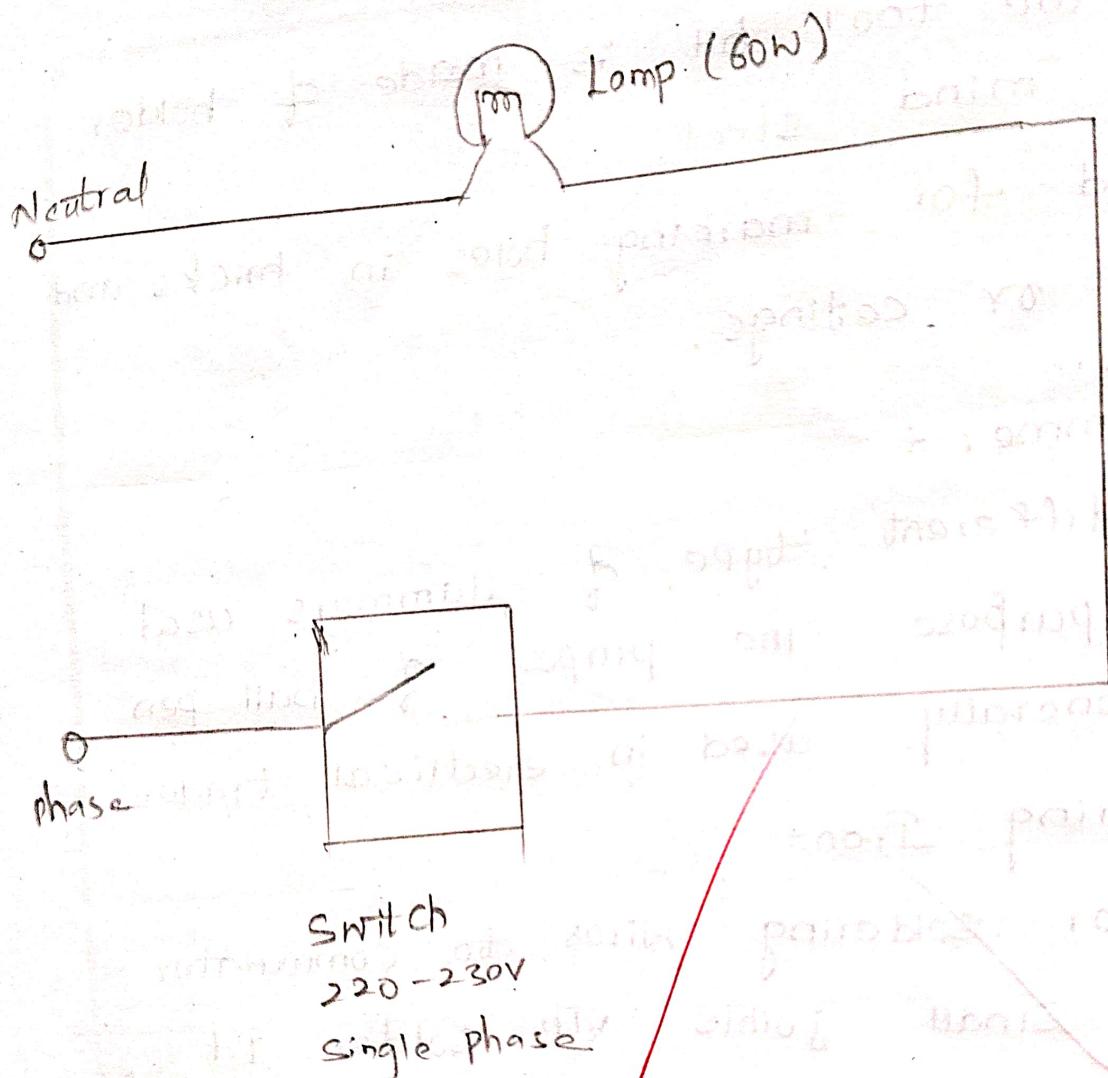
Tools Required : wooden wiring board , one way switch ; lamp holder, vth casing box, connecting, screw drivers 14/36 wires , wire clips, nails, Tester, insulator remover and GOW bulb .

Sequence of operations :

- ① The outline of the wiring diagram is marked on the wooden wiring board .
- ② Clips are nailing to the board , following wiring diagram .
- ③ Wires are stretched and lamped vth the clips .
- ④ Round blocks (2No.s) are screwed onto the board as per the diagram .
- ⑤ Bulbs are fitted to the holders .
- ⑥ Wires are connected to the holders and switch which are then screwed onto the round blocks .
- ⑦ The wiring Connecting are than tested, by giving power supply -

Result : Therefore one lyt Controlled by one switch is performed practically .





CALLING BELL

CONTROLLED BY ONE SWITCH

Aim : To give controlled connections by one switch to calling bell.

Tools Required : Wooden wiring board, One way switch lamp holder with 1u/36 wires, Casting box, connector insulator remover and 60 watts bulb, clips, nails, Tester, Sequence of operation :

- ① The outline of the wiring diagram is marked on the wooden wiring board.
- ② Clips are nailed to the board following wiring diagram.
- ③ Wires are stretched and clamped with the clips.
- ④ Round blocks (2 Nos.) are screwed onto the board as per the diagram.
- ⑤ Wires are connected to the holders and switch which are the screwed onto the round blocks.
- ⑥ Bulbs fitted to the holders.
- ⑦ The wiring connections are tested by giving power supply.



Date.....

precautions:-

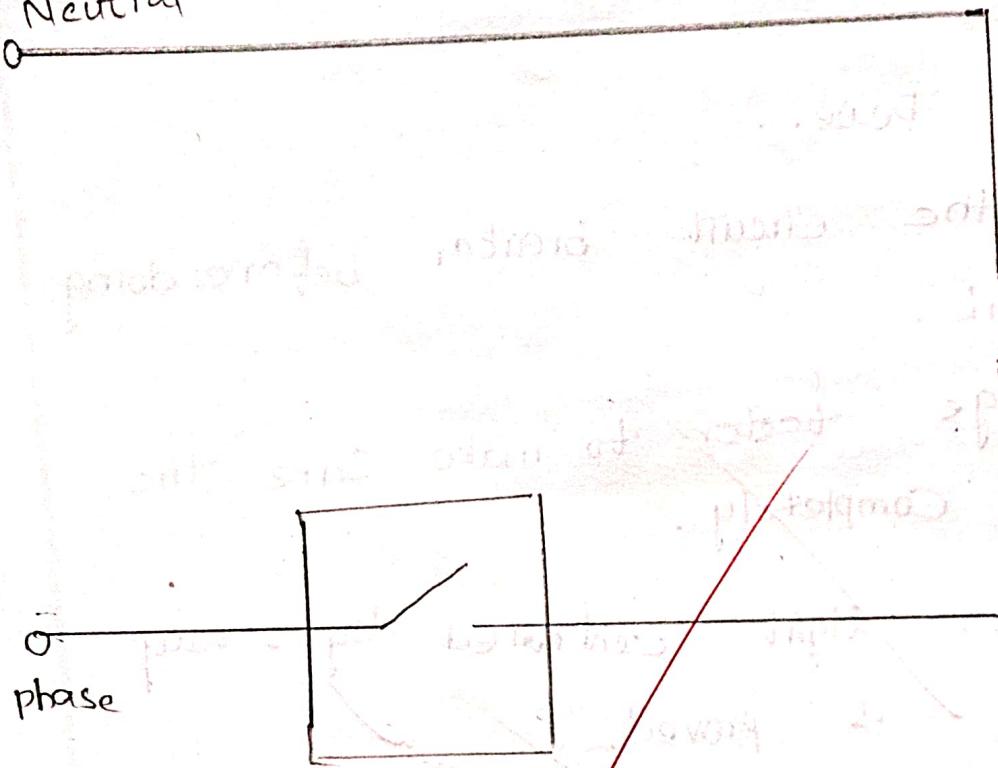
- 1) Ensure that all wires are snugly connected by both ends.
- 2) Loose wires can cause issues with the door bell.
- 3) The neutral must be connected to the bell post switch for safety.

Result + hence the calling bell controlled by one switch is experimentally proved

Ex 28/1m



Neutral



One way switch

220 - 230v

Single Phase