1. What is an electric circuit ? Distinguish between an open and closed circuit.
2. Define :- (a) S.I unit of electric current.

(b) coulomb

(c) 1 volt.

(3) State the relationship between the electric current, the charge moving through a conductor and

the time of flow

1. Calculate the chrge passing through an electric bulb in 20 minutes if the value of current is 200mA.
2. How is the direction of electric current related to the direction of flow of electron in a wire .
3. Calculate the current in a circuit if 500 coulomb of charge passes through it in 10 minutes.
4. A piece of wire of resistance 20 ohm is drawn out so that its length is increased to twice its original length. Calculate the resistance of the wire in the new situation.
5. Two resisters of 10 ohm and 15 ohm are connected in series to a battery of 6 V . How can the values of current passing through them be compared ?
6. A wire of resistance 20 ohm is bent to form a closed square.what is the resistance across a diagonal of square ?
7. Two device of rating 44W ,220V and 11W, 220V are connected in series. The combination is connected across a 440V mains. The fuse of which of the two devices is likely to burn when the switch is ON ? Justify Your answer.
8. Name the physical quantity which is (i)same (ii) different in all the bulbs. When three bulbs of:- (a) same wattage are connected in series.

(b) same wattage are connected in parallel

(c) different wattage are connected in series.

(d) different wattage are connected in parallel

(12) Series arrangements are not used for domestic circuits.List any three reasons.

(13) A torch bulb is rated 2.5V and 750mA. Calculate (i) Its power (ii) Its resistance and (iii) the

energy consumed if this bulb is lighed for four hours.

1. The waqttage of a bulb is 24w. when it is connected to a 12V battery. Calculate its effective wattage if it operates on a 6V battery (Neglect the change in resistancedue to unequal heating of the filament in the two cases).
2. An electric iron has a rating of 750W, 220V. Calculate the (i) Current flowing through it.(ii) its resistance when in use.
3. A 6 ohm resistance is cut into three equal parts and connected in parallel. Find the equivalent resistance of the combination.
4. Draw circuit symbols of (i) Rheostat/Variable resistor (ii) Condenser (iii) Wire crossing without touching each other.
5. A given length of a wire is doubled on itself and this process is repeated once again. By what factor does the resistance of the wire change ?
6. What happens to resistance of a conductor when its area of cross-section is increased ?
7. How is an ammeter and voltmeter connected in a circuit.
8. Potential difference between point A and B in an electric field is 1V. Explain the above statement.
9. Two identical wires one of nichrome and other of copper are connected in series and a current (I) is passed through them.state the change observwd in the temperatures of the two wires. Justify your answer. State the law which explains the above observation.
10. State difference between the wire used in the element of an electric heater and in a fuse wire.
11. (a) Define electric power.Expressit in terms of potential difference V and resistance R. (b) A electrical fuse is rated at 2A. what is meant by statements.
12. (a) write S.I unit of resistivity. (b) Name a device that helps to maintain a potential difference across a conductor. (c) What is the commercial unit of electric energy ? Convert it into Joules. (d) out of 60W and 40W lamps which one has higher electrical resistace when in use.
13. Write two points of difference between electrical energy and electrical power.
14. State ohm’s law. Write the necessary conditions for its validity.HOW is this law verified experimentally? What will be the nature of graph between potential difference and current for a conductor? Name the physical quantity that can be obtained from this graph.
15. What is meant by electrical resistivity of a material? Derive its S.I unit. Describe an experiment to study the factor on which the resistance of a conducting wire depends.
16. What is meant by electric current? Name and define its S.I unit. In conductor electrons are flowing from Y to Z. What is the direction of conventional current?
17. Define 1 volt. Express it in terms S.I unit of work and charge. calculate the amount of energy cosumed in carrying a charge of 1 coulomb through a battery of 3V.
18. Draw a closed circuit diagram consisting of a 0.5m long nichrome wire YZ, an ammeter, a voltmeter, four cells of 1.5V each and a plug key.
19. Explain with the help of a labeled circuit diagram. How will you find the resistance of a combination of three resisters,of resistance R1,R2,R3, Joined in parallel. Also mention how will you connect the ammeter and voltmeter in the circuit and the potential difference across one of the three resisters of the combination.

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