OAKRIDGE INTERNATIONAL SCHOOL

Revision Worksheet

Subject : **Topic: Electricity**

Grade: MYP 5

Section-A

(Easy to answer and structured questions)

1. How are different electric appliances connected in a house?
2. What is the resistance of an ideal ammeter?
3. A wire of resistivity rho is stretched to double its length. What will be its new resistance?
4. What is the law of combination of resistances in parallel?
5. What is the other name of electric potential?
6. Give the symbol of fixed resistance and variable resistance.
7. Define the unit of resistance.
8. 1 m V is equal to (a) 1 volt (b) 1000 volt (c) 1/1000 volt (d)1/10000 volt
9. Which of the following charge is not possible?

(a) 1.6×10^{-19} C (b) 0.2×10^{-19} C (c) 0.35×10^{-19} C (d) $0.1 \times 1.6 \times 10^{-19}$ C

10. On what factors does resistivity of material depend?
11. Name two special characteristics of heater coil.
12. 10 electrons are removed from a neutral body. The charge acquired by a body is (a) 1.6×10^{-18} C (B) 1.6×10^{-20} C (C) -1.6 X10 C (d) 10 C

13. Differentiate between resistor and resistance.
14. What do you mean by the potential difference? Write and define its unit.

Section B

(Higher order questions)

Q.1. A torch bulb is rated at 3V and 600mA. Calculate it's a) Power b) Resistance c) Energy consumed if it is lighted for 4 Hrs.

Q.2. Which will offer more resistance a 50W lamp or 25W lamp bulb and how many times?

Q.3. Two identical resistors each of resistance 10 ohm are connected 1) in series 2) in parallel, in line to a battery of 6volts. Calculate the ratio of power consumed in the combination of resistors in the two cases.

Q.4. A bulb is rated at 220V- 100W. What is its resistance? Five such bulbs burn for 4 hrs. What is the energy consumed? Calculate the cost if the rate is 50paise per unit?

Q.5. Express ohm's law mathematically. Draw a circuit diagram to verify Ohm's law. Present the relationship between the voltage applied across a conductor and the current flowing through it graphically.

Q. 6Two lamps rated 100W, 220V and 25W, 220V are connected in parallel to 220V supply. Calculate the total current through the circuit.

Q7. How much power is used by a contact lens heating unit that draws 0.070 A of current from a 120 V line?

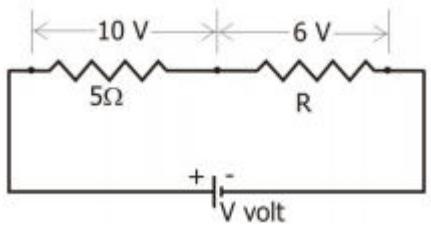
Q 8. Find the resistance of a 1400 W microwave oven and a 150 W electric can opener which are designed to run on 120V?

Q 9 An electric motor has a resistance of 0.25 Ω and produces 100 W of power. How much current does it draw? If the motor works for 30 minutes, calculate the electrical energy consumed.

Section C

(Application / Higher order questions with multiple concepts/Olympiad/Asset)

1. What will be the new resistance if a wire of resistance 80 ohm is bent into a circular form?
2. Calculate the ratio of series to parallel combination if there are n number of resistances.
3. A resistance of 6 ohms is connected in series with another resistance of 4 ohms. A potential difference of 20 volts is applied across the combination. Calculate the current through the circuit and potential difference across the 6 ohm resistance.
4. Two resistances are connected in series as shown in the fig.
(i) What is the current through the 5 ohm resistance?
(ii) What is the current through R?
(iii) What is the value of R?
(iv) What is the value of V?



5. Calculate the effective resistance in the diagram shown in figure.