Sabaragamuwa Provincial Department of Education
Weekly School

Subject :- Science

Week : 12 July – 16 July

Grade - 11

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Power and Energy of Electric Appliances

We use electrical energy to make our day today activities easy. At every occasion electrical energy is converted into another energy type and used. Energy transformation is occurring in the electrical equipment.

1. Write the electrical transformation of following equipment

    a)   Fluorescent light

    b)   Television

    c)   Electric oven

    d)   Motor

Energy consumed in a unit time is called efficiency. That means the amount of electricity spent in a unit time. The following equation can be used to find it.

Efficiency = Voltage × Current

$P = VI$

Voltage is taken by Volt (V) and current is measured by Amperes (A) and Efficiency is gained from Watt (W)

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2. Calculate the efficiency in a ……… bulb which allows to flow 3A current at 12V voltage.

An electric iron works at 230V voltage if its efficiency is 1000W calculate it's current.

In an electrical circuit P electricity is spend in T time so the total energy spent is PT and that energy is referred as E.

$E = PT$

When P is gained from Wat (W) and time from Seconds (S) total electrical energy (E) is gained from Joules (J)

$P = VI$ so VI can be used instead of P

$E = PT = VIT$

Total electrical energy = Voltage × Current × Time

$E = VIT$

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3. A 60W bulb is lit in a house for 2 hours. Calculate the consumed energy.

4. A bulb in a cycle of 6V uses 0.5A current for 10 minutes. Calculate the electrical energy used.

5. Which bulb is more efficient? (Refer 34 page of text book- 2 10.1 table) (National Power Supplication is taken to house)

6. What is the voltage and frequency of current supplied to house? Voltage ……………… Frequency ……………

7. Write the order of arranging the parts in a home electrical circuit.

   Electric meter, Isolator, Consumer unit, Overload circuit breaker, Distribution box, Trip switch