

Circuits & Cost of Electricity Test

INFORMATION SHEET

- $R = \frac{V}{I}$
- $P = \frac{W}{t}$
- $P = VI$
- Cost = kWh x tariff

CHOOSE ONLY A, B, C OR D

QUESTION 1:

1.1) When a circuit is closed, a chemical reaction takes place where electrical energy comes from:

- A.) Electrical energy.
 - B.) The battery.
 - C.) Chemical energy.
 - D.) None of the above.
- (2)

1.2) Current flows from the positive pole to the negative pole. This current is called:

- A.) Current strength.
 - B.) Conventional current.
 - C.) Potential difference.
 - D.) None of the above.
- (2)

1.3) In a parallel connection, which option indicates the correct characteristics of this type of connection?

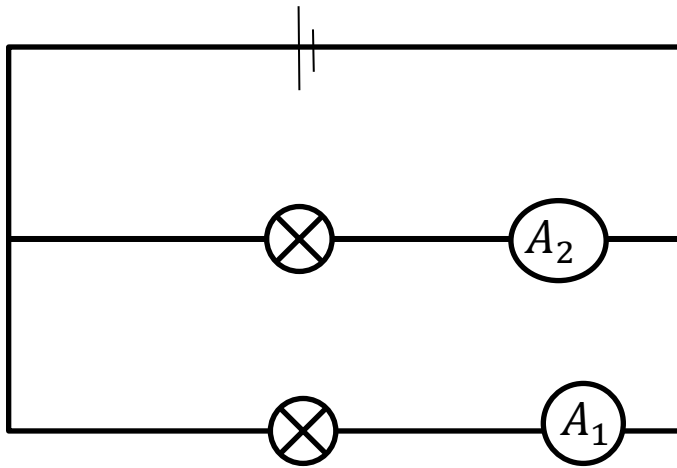
- A.) The current is the same everywhere.
 - B.) The potential difference is the same everywhere.
 - C.) The current over the parallel connection = the current in the main current.
 - D.) A and C.
- (2)

1.4) The correct word for the following description is:

The variable in an experiment that is measured.

- A.) Independent variable.
 - B.) Dependent variable.
 - C.) Control variable.
 - D.) Investigative variable.
- (2)

1.5) Consider the following circuit. What is the correct option for the reading A_1 and A_2 if a battery V-volt is provided?



- A.) $A_2 = A_1$.
- B.) $A_2 > A_1$.
- C.) $A_1 > A_2$.
- D.) None of the above

(2)

QUESTION 2:

- 2.1) Define the term resistor. (2)
- 2.2) Write down the unit of resistance. (1)
- 2.3) Discuss the four factors that influence the resistance of a conductor. (4x2)
- 2.4) Draw a circuit with two conductors connected in parallel containing one cell. (4)

QUESTION 3:

3.1) Two appliances are compared to each other.

Appliance A has a power of 2000W and is used for 2 hours at R1.50 p/h.

Appliance B delivers 200 Volts at an unknown current strength for 1 hour at R1.50 p/h.

Appliance A's cost of electricity is twice the cost of Appliance B.

3.1.1) How much kW is delivered by appliance A? (1)

3.1.2) Write down an expression for the power of appliance B in terms of current strength and volts.

(2)

3.1.3) Calculate the current strength of Appliance B. (5)

