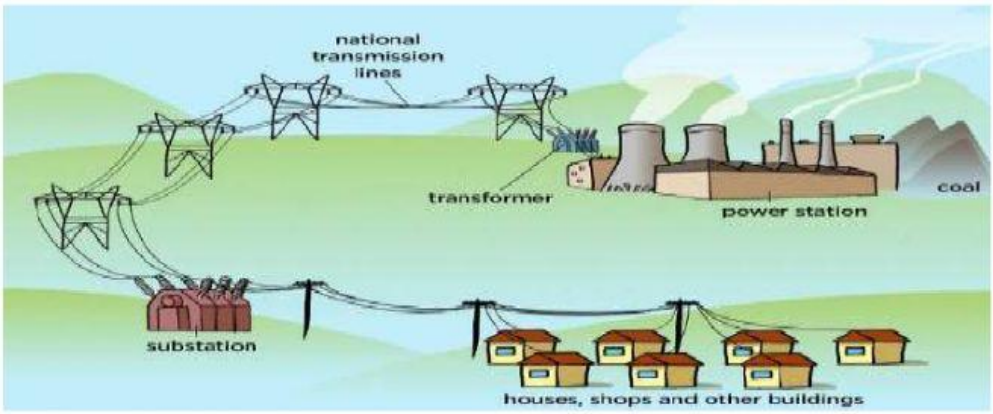
L. N. Coakley Science Department

Energy Unit Quiz

Name:_____ Date:_____ Grade_____.

1. The diagram below shows how the electrical energy is distributed from the power station to the consumers.

I. Which two of the following parts are the component of the power grid?



a) Wires and power station

b) Power station and transformers

c) Wires and transformers

d) Transformers and consumers

2. Which of the following statement best define the definition of power grid?
   a) The system of cables and transformers linking the power station to the consumers
   b) The system made up the power stations (Non-renewable and Renewable), cables, transformers, and the consumers.
   c) The system made up the power station, cables and the consumers.
   d) All of the above.

3. Complete the following paragraph about the power grid's functioning.

   a) When electricity comes out of the power station it passes through a _____ transformer to increase the _____ and reduce the _____. Reducing the current makes the transfer of electricity more efficient as less energy is loss in the form of _____. The form the electricity gets to our home, the voltage needs to be _____ back down to a safe level, the electricity therefore passes through a _____ transformer.

4. Generating stations send power long distances using.

   a) High voltage, high current

   b) High voltage, low current

   c) Low voltage, high current

   d) Low voltage, low current

5. Mention 3 important safety rules to consider when we are working with electrical appliances.

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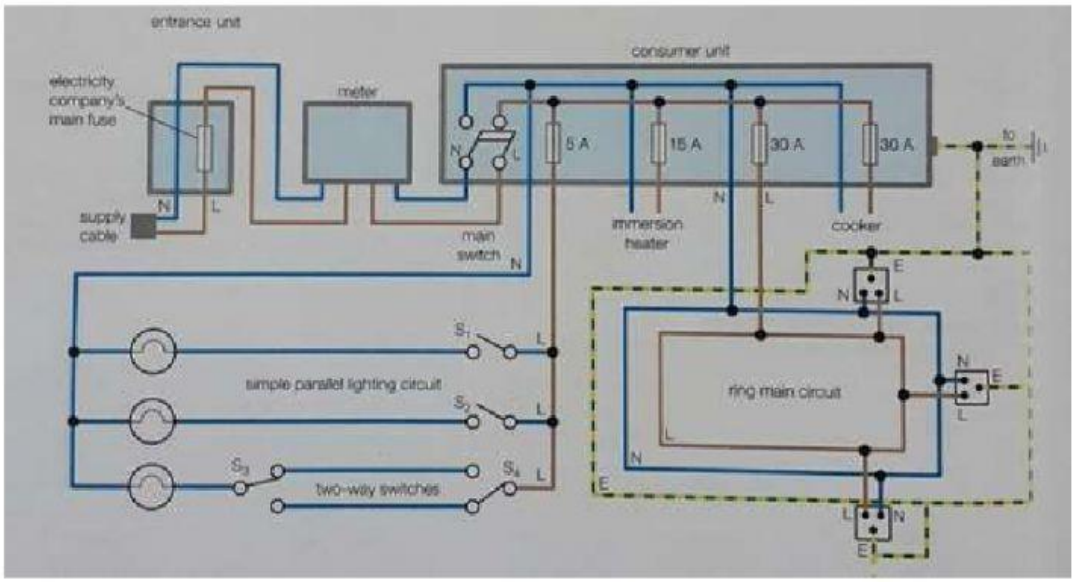
_____

_____

6. The following diagram shows the electrical circuit of the drawing of the house.



a) What color wire represents the live wire? _____.

b) What color wire represents the neutral wire? _____.

c) What color wire represents the earth wire? _____.

d) What is the function of the company's main fuse?

_____

_____

e) Why the water heater and the electrical stove are connected to a separate circuit and not to the ring circuit?

_____

_____

_____.

7. An electricity company's fixed rate is $ 0.20 per unit and the fuel adjustment rate is $ 0.30 per unit. Calculate the cost of operating eight (8) 300W floodlight for 10 hours.

8. What current rating of circuit breaker would be more appropriate for 120 V, 1250 W hair dryer?

   a) 5 A
   b) 10 A
   c) 15 A
   d) 20 A

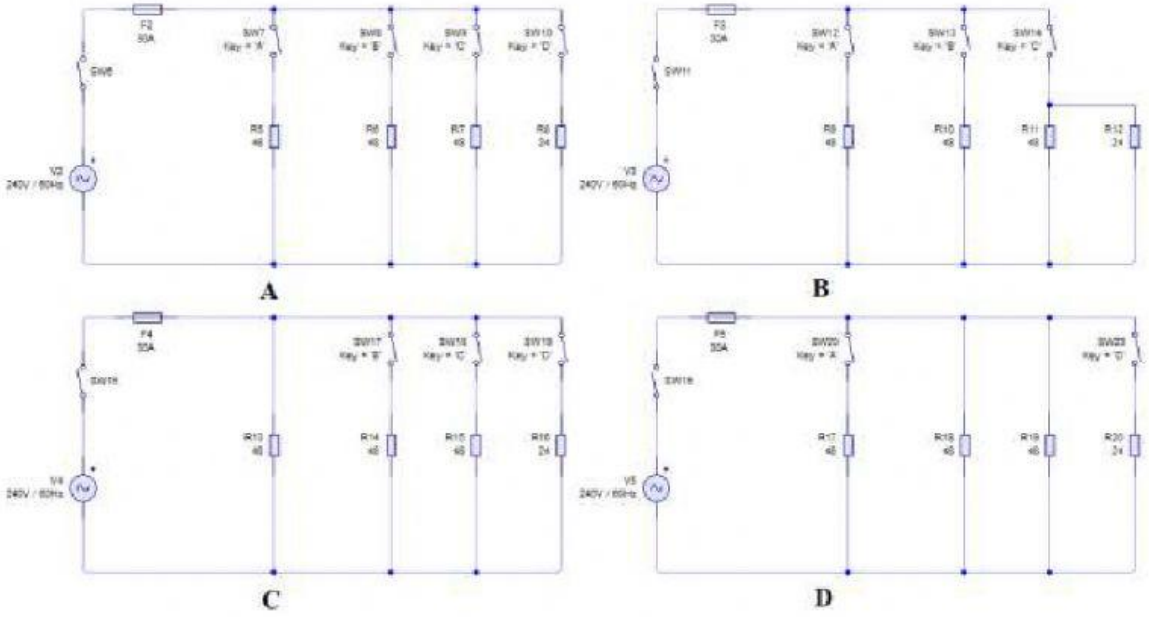
9. How many 60 W lamps can be accommodated on a 120 V circuit that is protected by a 10 A circuit-breaker?
   a) 12 lamps
   b) 18 lamps
   c) 30 lamps
   d) 20 lamps

10. The reading of the meter of the Exuma Market grocery store today 25/1/21 is 22986 KWh. How much will the cost of the electricity is the last month the reading was 21986 units.

   a) $290.76
   b) $300.00
   c) $259.76
   d) $390.76

11. An electric stove has three stove-top heating elements of resistance 48Ω each and one of resistance 24Ω. The elements can be switch on and off independently.

i. Select the circuit diagram that fits more to the specifications, (the symbol for a resistor is been used as that for a heating element) to show how the elements and the switches are connected to the live and neutral wires of a 240 V supply.



A B C D

ii. Calculate the total current drawn from the supply when all four elements are operating at full power. _____.

iii. Calculate the power of the stove. _____.