Grade 7 Herbert Hurd Primary School November 2019

Second Semester Assessment: Natural Science Total: 60

Instructions:

1. Read through your questions carefully.
2. Take note of all the mark allocations.
3. Rule a line after every section
4. Diagrams to be done in pencil and labelled in pen.

Section A – Provide the correct term for the following sentences.

1.1 A small generator which changes movement energy into electrical energy.

1.2 Energy generated by the sun.

1.3 The branch of science that deals with space and the universe as a whole.

1.4 A substance formed when dead matter is covered with sediment.

1.5 An energy source that cannot be renewed. (5)

2. The following statements are **false.** Make them true by changing the underlined word. **Write only the correct word**. (5)

2.1 It takes the Earth 12 hours to spin round once, on its axis.

2.2 Earth is the center of our solar system.

2.3 Dark colours reflect heat.

2.4 Time, pressure and water are the main components in forming fossil fuels.

2.5 Conduction is the transfer of heat by movement of liquid or gas particles.

Total: 10

Section B: Energy and Change

3. Read the extract below. It is from one of the powerful speeches written by Greta Thunberg, who is a Climate Change and Global Warming activist. (6)

> We cannot solve a crisis without treating it as a crisis. We need to keep the fossil fuels in the ground and we need to focus on equity. And if solutions within this system are so impossible to find then maybe we should change the system itself. We have not come here to beg world leaders to care. You have ignored us in the past and you will ignore us again. We have run out of excuses and we are running out of time. We have come here to let you know that change is coming whether you like it or not. The real power belongs to the people!
> Thank You!

3.1 From the extract above, what do you think is the crisis we are facing? (1)

3.2 Name two types of fossil fuels. (1)

3.3 Why do you think we should keep the fossil fuels in the ground? (2)

3.4. Hydropower is an example of a renewable resource. Provide two disadvantages of using Hydropower as a source of electricity in South Africa. (2)

4. Complete the following sentence by filling in the missing words.

The law of conservation of energy states:

"Energy cannot be a. _____ or b. _____; it can only be c. _____ from one d. _____ to another". (2)

5. Study the diagram below and complete the energy flow diagram. You need to indicate the following:

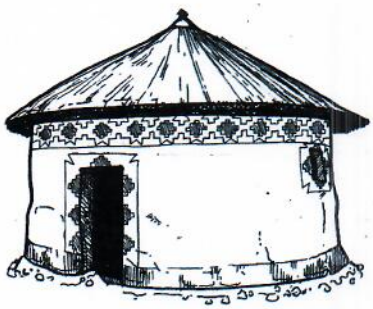
   a. Type of energy at each stage (input- process- output)

   b. Brief explanation of each stage.

   c. The energy transfer taking place at each stage. (4)

   d. What is the waste energy for the fan?

6. An architect designed and built three houses. Each house was built with different insulating materials.



   a. House A: Built with a cone-shaped thatch roof made with grass, string and dung.

   b. House B: Built with a flat metal roof.

   c. House C: Built with only sticks and grass.

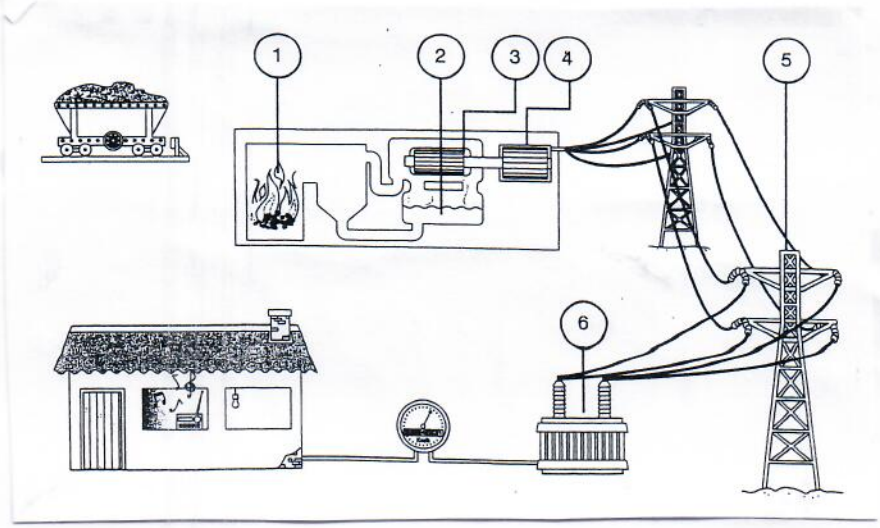
6.1 Which house do you think will be the coolest in the summer and why?

(2)

6.2 Which house do you think will be the hottest in summer and why? (2)

7 The following diagram shows how electricity is generated in a power station.

Explain what is happening at stages 1 2 5 (3)



8. Long Question: Heat Energy Transfers.

The pictures below show three different ways in which heat energy can be transferred.

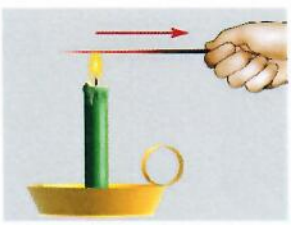
Provide a detailed description for what is happening in each stage. (9)

A.

Hands warming by a fire.

B.

A metal rod on an open flame.

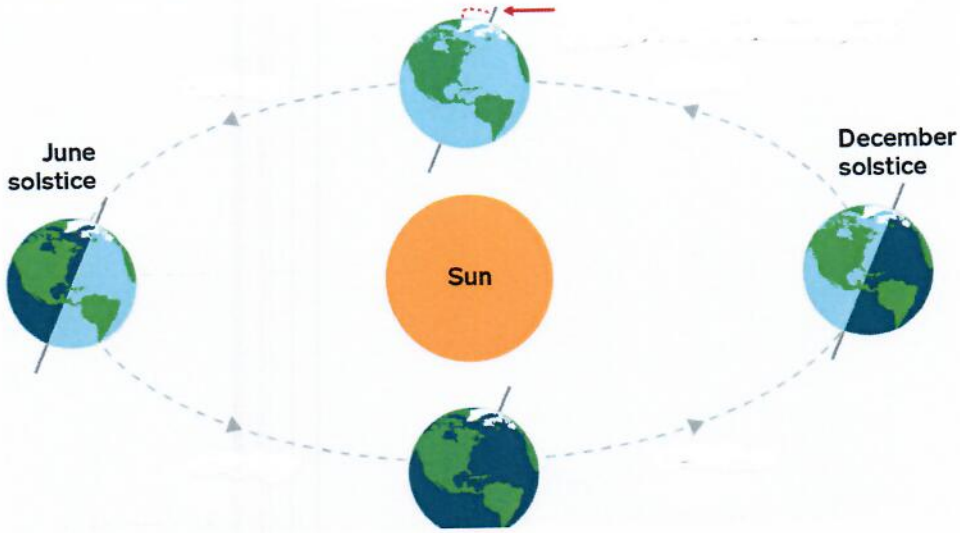


C.

A floor heater.

Section C- Planet Earth and Beyond

9. Study the diagram below and answer the questions which follow.



a. In what direction does the Earth revolve around the Sun? (1)

b. What two factors determine the length of a day? (2)

c. In the June solstice, what seasons would the Northern and Southern Hemispheres be experiencing. Explain why? (4)

10. Gravity is the tendency of objects to attract or pull each other.

10.1 What two factors does the pull of gravity depend on? (2)

10.2 What is the main cause for the Earths tides? (1)

10.3 A spring tide occurs once a month. Explain the reason for the spring tide. (2)

10.4 There are many ways in which the rise and fall of the tides sustain life in the inter-tidal zone. Describe 3 ways in which animals and plants have adopted to living in the rapidly changing conditions caused by tides. (6)

11. People have made and continue to make important discoveries in astronomy. In the table below, match the discoveries to the correct person. Write only the number and the correct letter. Eg: 1 F (4)

Column A	Column B
1. Sir Isaac Newton	A. He is the founder of the "The Three Laws of Planetary Motion". This enables people to make accurate predictions about the movement of the Moon and planets.
2. Galileo Galilei	B. The first person to correctly describe the force of gravity.
3. Nicolaus Copernicus	C. Constructed a 20x refractor telescope and also discovered that the Moon has craters.
4. Johannes Kepler	D. He proposed that the planets revolved around the Sun. He also designed the Heliocentric Model.

The End