

SECTION A

1. Multiple Choice – Write only the number and the correct letter

- 1.1. **Cooking with a pot that has a wooden handle is preferred over a pot with a metal handle because...**
a) the metal handle is an insulator so it gets hot quickly.
b) wood is an insulator so the heat from the pot is conducted easily.
c) metal is a good conductor of heat so it gets hot quickly.
- 1.2. **Methane is a flammable gas that is released when...**
a) the atoms in uranium are split and give off heat energy.
b) plants decompose and produce biogas.
c) the silicon in the sand is used to channel solar energy.
- 1.3. **The Earth spins on an axis that is tilted at an angle of ...**
a) 23,5°
b) 25,3°
c) 90,5°
- 1.4. **The coastline area between the high and low water marks is known as the**
a) tides.
b) Inter-tidal zone.
c) shoreline ecosystem.
- 1.5. **The Earth moves around the Sun in a pathway called a/an...**
a) orbit.
b) revolution.
c) rotation.

[5]

2. VOCABULARY – Write only the correct term being described

- 2.1. A small generator which changes movement energy into electrical energy (e.g. used in some bicycle lights)
- 2.2. Energy created from heat
- 2.3. A community of living organisms and their interaction with their environment
- 2.4. The small range of tides that occur when the Sun's gravitational pull and the Moon's gravitational pull are perpendicular to each other.
- 2.5. To turn on an axis (e.g. the Earth moving around its own axis)

[5]

3. MATCH THE COLUMNS – Write only the number and the matching letter.

Column A	Column B
3.1. Electrical energy	A – Heat passing through an object.
3.2. Circle of illumination	B – Energy of moving parts pushing or pulling.
3.3. Reflection	C – Energy produced by the movement of charged particles.
3.4. Axis	D – Line dividing the lit from the dark half of the Earth.
3.5. Nuclear fission	E – Heat bouncing off an object
	F – An imaginary line through the centre of Earth from the North Pole to the South Pole.
	G – When atoms are split in substances like Uranium.

[5]

SECTION B: Energy and Change

4. Study the two newspaper headlines below.

A	Construction of R550m Port Elizabeth wind farm to start soon.
B	Plans for Thyspunt nuclear power station are fatally flawed.

4.1. Indicate which source of energy (renewable or non-renewable) is mentioned in each headline.

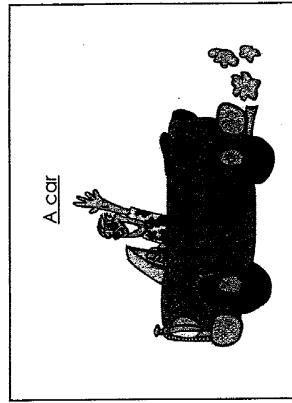
4.2. Give 1 advantage of the energy source mentioned in A.

4.3. Give 1 disadvantage of the energy source mentioned in B.

[3]

5. Study the diagram below and complete the energy flow diagram.

You will need to indicate the type of energy of each stage (input – process – output), a brief explanation of each stage as well as the waste energy for the system.



[4]

6. Identify whether the given statement refers to CONDUCTION, CONVECTION or RADIATION.

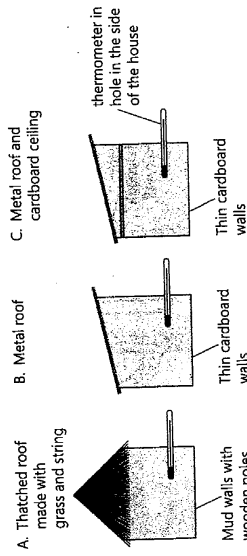
6.1. Hot air rises and cool air sinks.

6.2. Insulators like wood do not transfer heat easily.

6.3. Heat is transmitted through glass.

[3]

7. Learners built three model houses and each had a thermometer placed through a hole, as seen in the diagrams below. They were then placed in the Sun for 30 minutes. Study them carefully and answer the questions which follow:



7.1. Which of the three models would have the highest temperature?

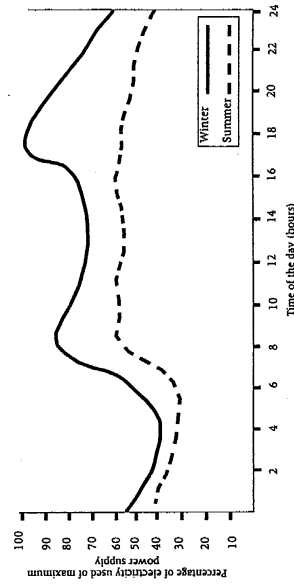
Give a reason for your answer.

7.2. Which model will show the lowest temperature?

Give a reason for your answer.

[4]

8. Study the graph showing the amount of electricity used on one weekday during summer and one weekday during winter in South Africa.



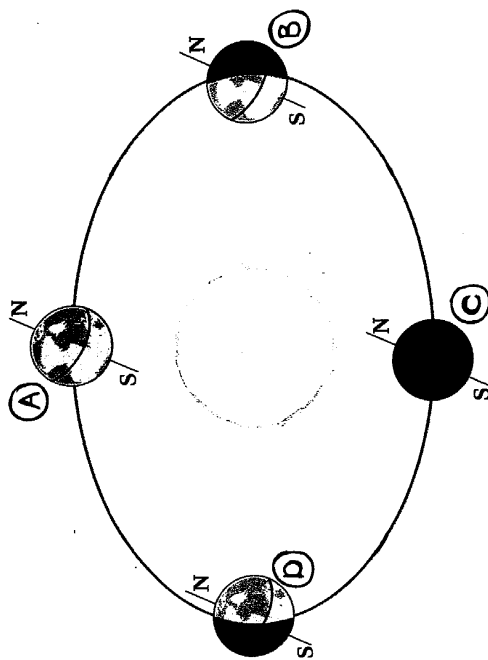
A graph showing the percentage of the electricity supply that is used during summer and winter

- 8.1. Why is more electricity used in winter than in summer?
- 8.2. At what time of the day is most electricity used in winter?
Explain why this is so.
- 8.3. When is the least energy used in both summer and winter?
Explain why this is so.

[5]

SECTION C: Planet Earth and beyond

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



- 9.1. In which direction (clockwise or anticlockwise) does the Earth revolve around the Sun?
- 9.2. Which season would we (South Africa) experience at D?
- 9.3. Give a reason for your answer to 9.2.
- 9.4. At which letter on the diagram would we experience Autumn?

[5]

10. Gravity is the tendency of objects to attract or pull each other. Name and describe the TWO FACTORS which determine the pull of gravity. [4]

11. What is the main cause of the tides on Earth? [1]

12. During which two moon phases will we experience a spring tide? [2]

13. There are many ways in which the rise and fall of the tides sustain plant and animal life.

13.1. Give one example which describes how this action sustains **plant** life.

13.2. Give one example which describes how this action sustains **animal** life. [2]

14. Match the astronomical discoveries below with the correct astronomer. Write only the number and the astronomer's name.

Copernicus	Gallilei	Kepler	Newton
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14.1. Wrote a book in which he explained that the movement of planets could be predicted by mathematics.

14.2. Discovered that our moon has craters.

14.3. The father of observational astronomy.

14.4. First person to correctly describe the force of gravity.

14.5. Worked out that the orbits of the planets were not circles.

14.6. Proposed that the planets revolved around the Sun and not around the Earth.

[6]

SECTION D: Long Question

15. Use the diagram below to explain how electricity is made in a power station.
Your answer must be in paragraph format. [6]

