

Natural Sciences Grade 7 November 2015 District Common Examination

EKURHULENI NORTH DISTRICT

Natural Sciences

November Common Examination

Memorandum

SECTION A

Question 1 Multiple Choice

1.1 B. Hydropower ✓

1.2. A. mechanical energy ✓

1.3. D. energy can neither be created nor destroyed. ✓

1.4. D. gravity ✓

1.5. A. Telescope ✓

[5]

=====

Question 2

2.1. True ✓

2.2. True ✓

2.3. False ✓

2.4. True ✓

2.5. False ✓

[5]

=====

Question 3

3.1. G ✓

3.2. C ✓

3.3. F ✓

3.4. E ✓

3.5. B ✓

[5]

=====

Total for Section A : 15

SECTION B

Question 1

1.1.62% ✓✓

1.2.38% ✓

1.3. $2/38 \times 100 = 5$ ✓

1.4. 36 units ✓

1.5. Use energy saving bulbs in light fittings. ✓
Switch of lights when not in use. ✓

1.6. White or silver ✓✓

1.6.1. White and silver objects reflect radiation waves, so they heat up slowly. ✓ This means the inside of a house with a white or silver roof will be cooler than the inside of a house with a black roof. ✓

1.7. Energy is the ability of a system to do work. ✓ [13]

Question 2

2.1. Length and the diameter of the rods, distance from flame, size of drawing pin, amount of Vaseline used to attach the drawing pin. ✓✓ (Any two answers are acceptable).

2.2. Time taken for the drawing pin to drop. ✓

2.3. Stopwatch or watch with a second hand. ✓

2.4. Type of material, that is copper and plastic. ✓

2.5. The material that is the poorer conductor will take longer for the heat to travel through it and melt the Vaseline. Therefore the last pin to drop is the substance that is the poorer conductor. ✓✓✓

2.6. A good conductor in this case copper can be used to make cooking pots. ✓

A poor conductor in this case plastic can be used to make pot handles. ✓ [10]

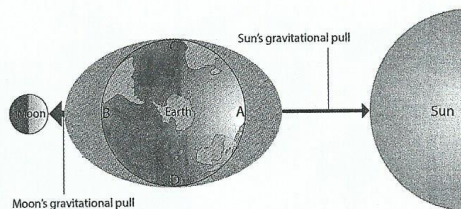
Question 3

3.1. The learners' diagram must show Earth between the Sun and the Moon and each must be labelled. One mark for Moon, one mark for the Earth and one mark for the Sun. ✓✓✓ (No marks if the Earth is not between the Moon and the Sun).

3.2. The side of the Moon and Earth facing away from the Sun must be shaded. ✓✓

3.3. The water must bulge towards the Moon. Low and high tides must be labelled. (Two marks for tidal bulges and two marks for proper labelling).√√√√

The learners' diagram must look like the one below.



3.4. Spring Tides √

3.5. New Moon √

[11]

Question 4

4.1. Convection is the way that heat energy flows through liquids and gases.√

4.2. Hot air rises, therefore the heater is positioned on the floor so that as the warm air rises, the cooler air sinks down to be warmed by the heater until the whole room is full of warm air.√√

4.3. The air conditioner is best positioned next to the ceiling, since the cool air generated by the air conditioner sinks and the warm air rises (to be cooled by the air conditioner) until the room is eventually filled with cool air.√√ [5]

Question 5

5.1. In December √

5.2. As Earth revolves around the Sun, different parts of Earth are tilted towards the Sun or away from it at different times. √√

5.3. Green plants absorb light energy from the Sun and produce their own energy containing food in their leaves. All animals depend directly or indirectly on plants for their food. Plants and animals depend on the Sun for warmth. Life on Earth needs water to survive. The Sun's heat energy drives the water cycle. √√√ (Any other explanation that shows the importance of solar energy on Earth). [6]

Total for Section B :45

TOTAL MARKS: 60