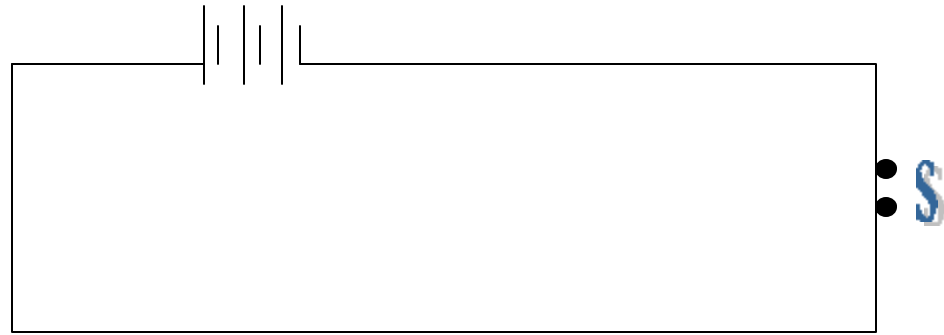


APPENDIX F
NATURAL SCIENCE
GRADE: NINE
MARKING MEMO

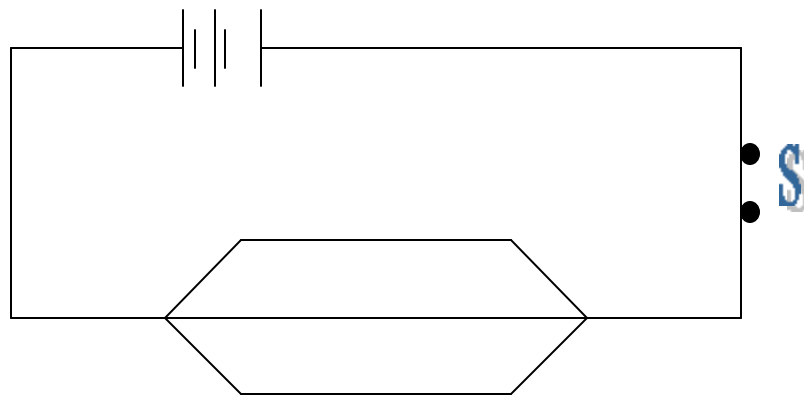
1.
 - 1.1 No movement of pieces of tissue papers (2)
 - 1.2.1 The pieces of tissue paper stuck to the surface of the balloon (2)
 - 1.2.2 The balloon is charged. (2)
2. To explain how objects become charged, we need to know more about matter. Matter is made of small particles called atoms. In the center of an atom are neutral neutrons and positive protons. Moving around the protons and neutrons are negative electrons. The number of electrons in each atom is equal to the number of protons, which means that the atom is neutral. Rubbing through friction can either remove electrons from an atom, making it positive or add electrons to an atom, giving it a negative charge. (4)
3. Lightning is a giant spark that is caused by static electricity. Moving air in clouds makes particles such as raindrops, hailstones or snowflakes. When these particles bump and rub against each other, the clouds become electrically charged. Negative charges collected near the bottom and positive ones near the top of the clouds. When the charges jump between the clouds to the earth a giant spark of lightning is formed. (8)
4. Current electricity is different from static electricity in that the charge or electrons flows in a conductor that forms a closed circuit. Static electricity is short-lived. Charges move around a charged object where there is an electric field. (5)
5. No, because static electricity is conducted through air which is a poor conductor of electricity.

6.

6.1



6.2



6.3 Parallel circuit, it has the advantage that if one bulb is out of order or not functioning the other bulbs are not affected.

6.4 Parallel circuit, potential difference is the same in parallel connections, while it is divided in series connections. (5)

6.5 So that only the effect of series and parallel connections is investigated. The other variables should remain constant. (3)

7.

Material	Effect on light bulb	Conductor or insulator
Paper	No light	Insulator
Safety pin	Light	Conductor
Pencil graphite	No light	Insulator
Chalk	No light	Insulator
Plastic pen	No light	Insulator

8.

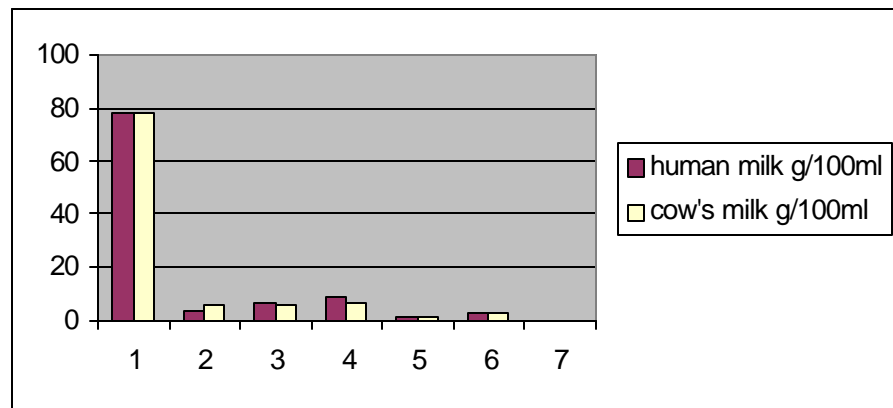
8.1 Vasectomy, sterilization

8.2 Vasectomy, sterilization

8.3 Abstinence, rhythm method

8.4 Vasectomy, sterilization

9.



9.1

9.2

(a) Human milk

3,30g yields 100ml

20g yields x

Therefore $x = \frac{100\text{ml} \times 20\text{g}}$

3,30g

= 606,06ml

(4)

(b) Cow's milk

5,30g yields 100ml

20g yields x

Therefore $x = \frac{100\text{ml} \times 20\text{g}}$

5,30g

= 377,36ml

(4)

9.3 Any correct reasoning depending on the learner's preference for ingredients.

(4)

9.4

9.4.1 Cow's milk, because it has a higher quantity of proteins.

(2)

9.4.2 Human milk, because it has a higher quantity of fat and sugars.

(3)