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| FOR EXAMINER'S USE ONLY |      |
|-------------------------|------|
| QUESTION                | MARK |
| 1                       |      |
| 2                       |      |
| 3                       |      |
| 4                       |      |
| 5                       |      |
| 6                       |      |
| TOTAL                   |      |

| SCHOOL No. | CANDIDATE No. |
|------------|---------------|
|            |               |
| INITIALS   | SURNAME       |
|            |               |

# **MINISTRY OF EDUCATION BAHAMAS JUNIOR CERTIFICATE EXAMINATION**

## **0047 GENERAL SCIENCE PAPER 2 STRUCTURED QUESTIONS (60 Marks)**

Friday     **31 May 2024**     2:15 P.M.–3:15 P.M.

### ***INSTRUCTIONS TO CANDIDATES***

**Do not open this booklet until you are told to do so.**

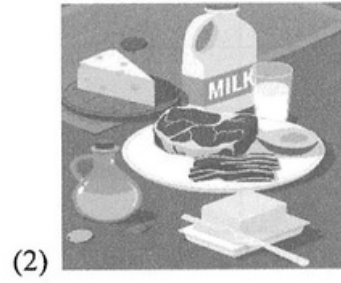
Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.

Answer **ALL** questions in the spaces provided.



This question paper consists of **11** printed pages and **1** blank page.

1. Food provides nutrients that the body needs to remain healthy.



- (a) Name the main nutrient found in each group of foods shown in the diagrams.

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

[3]

- (b) During different stages of their lives, the nutritional needs of individuals change.

In each example, state which nutrient you would recommend and why.

- (i) an adult woman suffering bone loss

Nutrient: \_\_\_\_\_

Reason: \_\_\_\_\_

[2]



- (ii) a teenage boy on the soccer team

Nutrient: \_\_\_\_\_

Reason: \_\_\_\_\_ [2]

- (c) Identify the nutrient:

(i) essential for good vision. \_\_\_\_\_

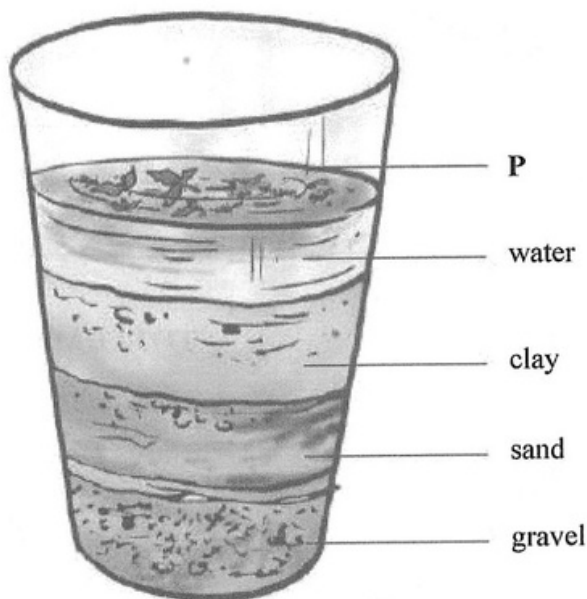
(ii) that prevents overheating of the body. \_\_\_\_\_

(iii) that prevents goitre. \_\_\_\_\_ [3]

**TOTAL MARKS [10]**

2. The diagram shows the soil profile of a soil sample.

Jerry pours water into a container with a sample of the soil he is investigating. The mixture is stirred and allowed to settle.



- (a) Define the term 'mixture'.

\_\_\_\_\_ [2]

- (b) Name component **P** and state why it is important.

\_\_\_\_\_ [2]

- (c) State **one** difference between clay and sand particles.

\_\_\_\_\_ [2]

- (d) Soil serves as an important habitat for many organisms.

Identify two micro-organisms found in soil.

1 \_\_\_\_\_  
2 \_\_\_\_\_ [2]



- (e) Earthworms live in the soil. State one way in which earthworms are beneficial to the soil.

\_\_\_\_\_ [1]

- (f) Bahamian soil is slightly alkaline. Suggest the pH range of Bahamian soil.

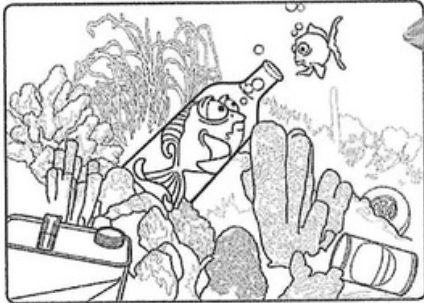
\_\_\_\_\_ [1]

**TOTAL MARKS [10]**

3. The diagram shows a coral reef.

Threats to the coral reef ecosystem can be natural or human.

Natural threats are caused by the environment or other organisms in the environment. Human threats are caused by human activity.



- (i) Put an **N** next to the natural threats, and an **H** next to the human threats to the coral reef.

- \_\_\_\_\_ Marine debris washed from the beach  
 \_\_\_\_\_ Deposits from nearby construction sites  
 \_\_\_\_\_ Predators like crown of thorns and parrotfish that feed on coral  
 \_\_\_\_\_ Chemical and thermal wastes, fertilisers, and sewage

[4]

- (ii) Group the following items as **biodegradable** and **non-biodegradable**.



flower



bottle



rat



rock



car



sandwich



fork

| Non-biodegradeable | Biodegradable |
|--------------------|---------------|
|                    |               |
|                    |               |
|                    |               |
|                    |               |
|                    |               |
|                    |               |

[3]



- (iii) Give **one** harmful effect of pollution on the coral reef.

\_\_\_\_\_ [1]

- (iv) Name **one** substance that causes land pollution and **one** substance that causes air pollution.

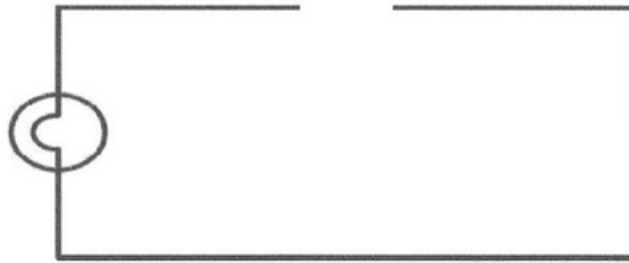
land pollutant \_\_\_\_\_

air pollutant \_\_\_\_\_ [2]

**TOTAL MARKS [10]**

4. Susan makes a circuit using a bulb, cell and wire.

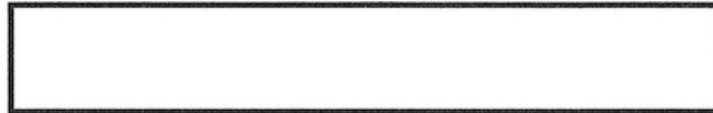
- (a) Complete the circuit diagram shown by drawing the symbol of the missing part that will allow the bulb to light. [1]



- (b) Name the component that can be added to the circuit to turn the bulb on and off. \_\_\_\_\_ [1]

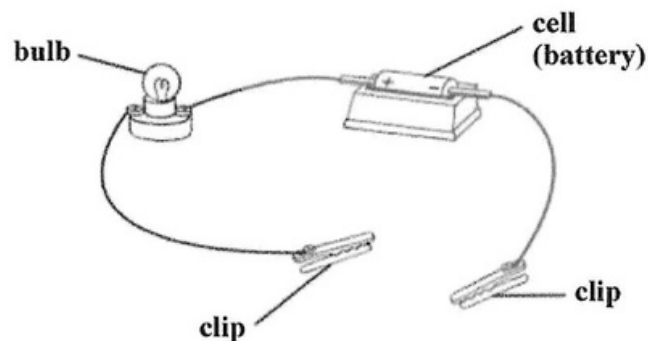
- (c) In the box provided, draw the symbol for the component named in (b).

Symbol:



[1]

- (d) Susan wants to test which objects are able to conduct electricity using the circuit shown.



- (i) She places the objects between the clips. Explain how she will know if the object conducts electricity.

\_\_\_\_\_  
 \_\_\_\_\_ [1]



- (ii) The table shows which objects were placed between the clips. Tick (✓) three objects which conduct electricity.

| Object         | Conducts electricity |
|----------------|----------------------|
| Paper-clip     |                      |
| Steel scissors |                      |
| Plastic ruler  |                      |
| Rubber         |                      |
| Iron nail      |                      |

[3]

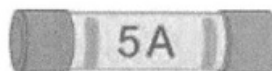
- (e) State the name given to materials that do not conduct electricity.

[1]

- (f) Name the particle that flows through a material to create an electric current.

[1]

- (g) The diagram shows a fuse.



Give the function of the fuse in an electric circuit.

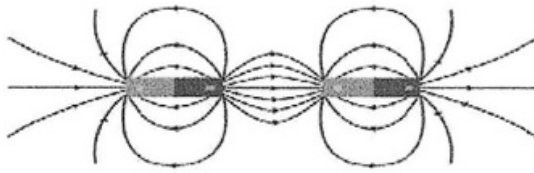
[1]

**TOTAL MARKS [10]**

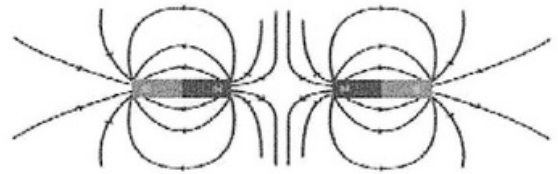


**[Turn over]**

5. Diagrams A and B show the magnetic field around two bar magnets.



**Diagram A**



**Diagram B**

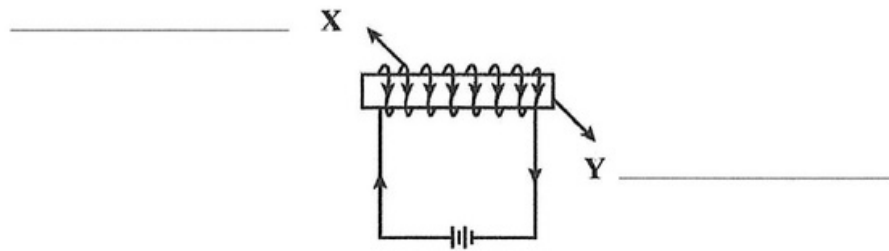
- (a) Explain why Diagram A is different from Diagram B.

\_\_\_\_\_ [2]

- (b) Magnets can occur in the natural environment. Give the name of this kind of magnet.

\_\_\_\_\_ [1]

- (c) Diagram C shows an electromagnet.



**Diagram C**

- (i) Label the part X and Y on the diagram of the electromagnet. [2]

- (ii) Explain how an electromagnet works.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

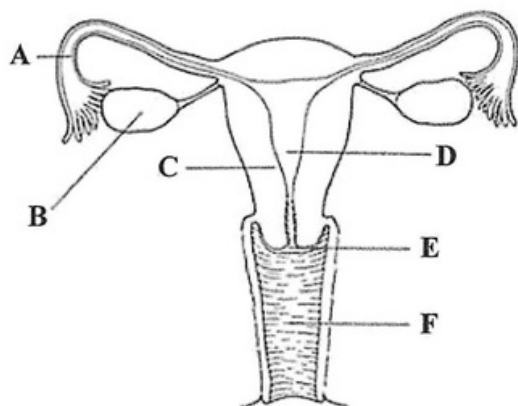
- (d) Magnetism and friction are examples of forces. State why they are different.

\_\_\_\_\_  
\_\_\_\_\_ [2]

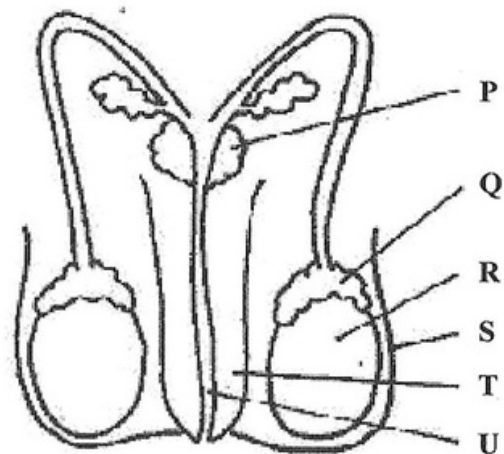
**TOTAL MARKS [10]**



6. The diagrams show the male and female reproductive systems.



**Female**



**Male**

Using the letters on the diagrams identify the part of the reproductive systems where these events occur.

- (i) An egg is released from here each month \_\_\_\_\_ [1]
- (ii) The fertilised egg travels through here on its way to the uterus \_\_\_\_\_ [1]
- (iii) A fertilised egg implants itself here \_\_\_\_\_ [1]
- (iv) Here the fertilised egg develops into a baby \_\_\_\_\_ [1]
- (v) The part that produces sperm cells \_\_\_\_\_ [1]

- (a) Name the part of the male reproductive system where sperm is stored.

\_\_\_\_\_ [1]

- (b) A sample of semen contains 40 million sperm cells. Only sixty percent of these sperm cells are capable of swimming.

Calculate how many sperm cells in this semen sample are capable of swimming.

[2]

- (c) Condoms are used as one form of birth control. Explain how the condom works as a birth control method.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ [2]

**TOTAL MARKS [10]**

**End]**



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