

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)

Thursday **2 June 2016** 2:15 P.M.–3:15 P.M.

INSTRUCTIONS TO CANDIDATES

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

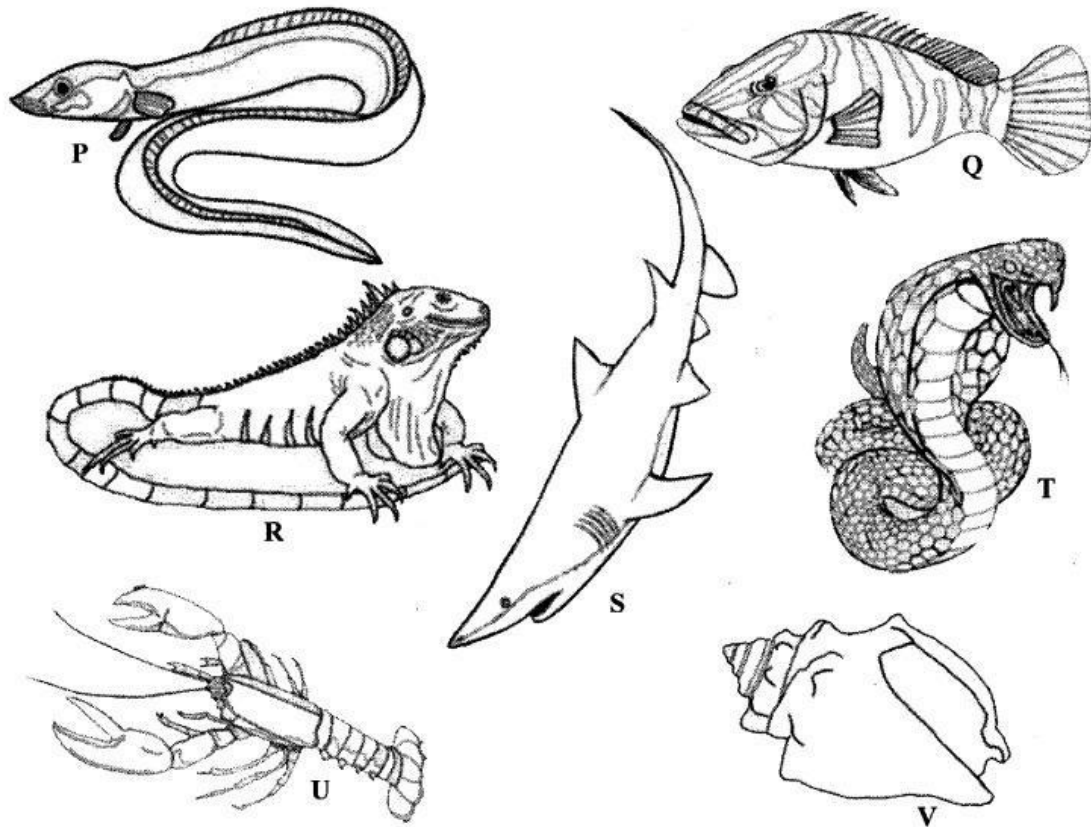
Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.

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



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

1. The living world around us is very biodiverse. Each organism, even within species, is distinct in its own way so that it can adapt to its environment.



(a) The diagram shows several different animals.

- (i) Identify **ONE** fish and **ONE** reptile from the diagram.

fish _____ [1]

reptile _____ [1]

- (ii) Briefly describe the body covering of organisms Q and V.

Q _____ [1]

V _____ [1]

- (iii) Organisms are found in many different habitats on land or in water.

Give the name of an organism shown whose habitat is on land.

_____ [1]

- (b) (i) Name **TWO** of the organisms shown which are protected by a closed season.

1. _____
2. _____ [2]

- (ii) Name **ONE** of the organisms shown which is protected by a size restriction.

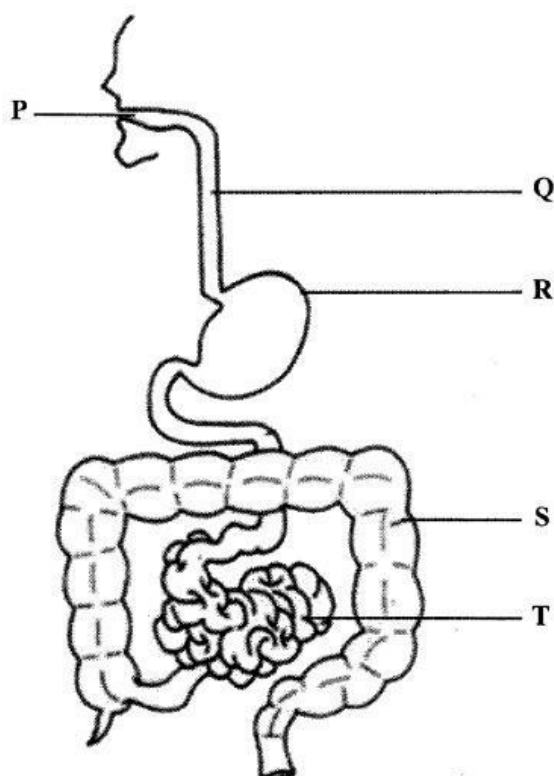
_____ [1]

- (c) Give the names of **TWO** endangered **bird** species in The Bahamas.

1. _____
2. _____ [2]

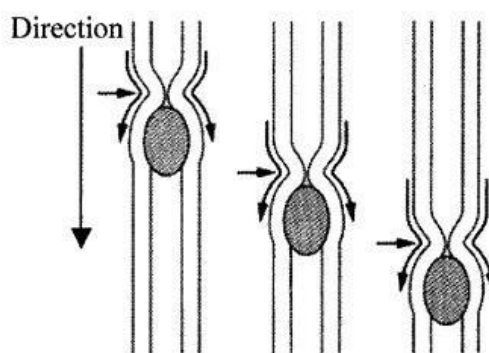
TOTAL MARKS [10]

2. The diagram shows the organs in a human body system.



- (a) (i) Name the human body system shown.
_____ [1]
- (ii) Give the name of the structure labelled Q.
_____ [1]
- (b) Identify the structure of this system where substances are
- (i) broken down into smaller pieces (chewed); _____
- (ii) churned and mixed with gastric juices; _____
- (iii) completely digested and nutrients absorbed. _____ [3]

- (c) The diagram shows the passage of substances through the system.



- (i) Name this process where muscles contract and relax to push substances through the system.
 _____ [1]
- (ii) Name the tiny finger-like projections which aid absorption of nutrients in the structure labelled T.
 _____ [1]
- (d) Name the substances which speed up chemical digestion.
 _____ [1]
- (e) Macy comes in with her lunch in a brown paper bag. The bag is covered with large grease marks.
- (i) Give the name of the likely food **nutrient** in the bag.
 _____ [1]
- (ii) A diet of fried foods is tasty but may contribute to a higher risk for certain health conditions.
 Name the health condition which may be caused by a diet of fried foods.
 _____ [1]

TOTAL MARKS [10]

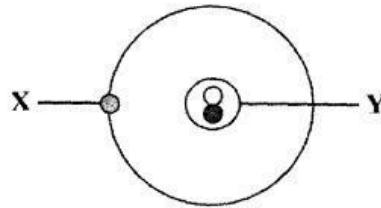
3. Matter is anything that has mass and volume (occupies space).

(a) List **THREE** kinds of matter.

1. _____
2. _____
3. _____ [3]

(b) Atoms are the basic building blocks of matter and are made up of three different kinds of particles.

The diagram represents an atom of **hydrogen**.



(i) Name **ONE** particle found in Y.

_____ [1]

Particles in an atom can have positive or negative charges or they can be neutral.

(ii) Give the kind of charge on particle X.

_____ [1]

(iii) Name the **neutral** particle found in an atom.

_____ [1]

(c) Hydrogen combines with oxygen to form water.

(i) Write the **chemical formula** for a molecule of water.

_____ [1]

(ii) Draw a water molecule.

_____ [1]

(d) Water can exist in **THREE** states of matter.

(i) In which state of matter are water molecules moving the **fastest**?

_____ [1]

(ii) Name the form of energy needed to change water from one state to another state.

_____ [1]

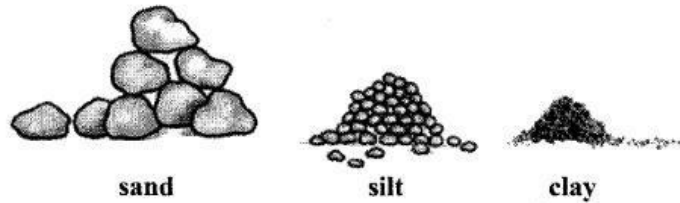
TOTAL MARKS [10]

4. This question is about soil, fertilisers and a natural cycle.

- (a) Name the process by which soil is formed from bedrock.

_____ [1]

- (b) The diagram shows three different kinds of soil.



Identify the type of soil in which water drains

- (i) rapidly, poor water storage; _____
- (ii) slowly, good water storage. _____ [2]

- (c) A **fertiliser** is applied to soils to supply nutrients essential for the growth of plants.

- (i) Name the **TWO** kinds of fertilisers.

1. _____

2. _____ [2]

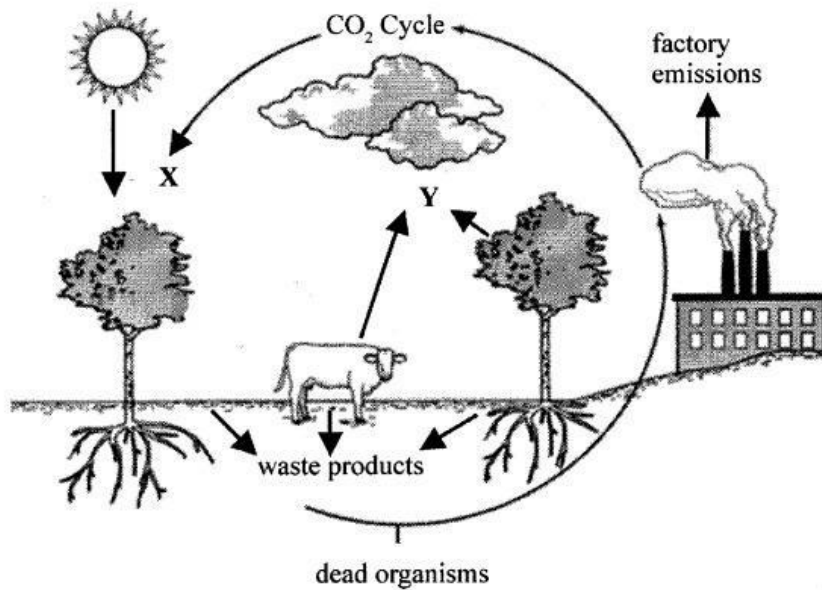
- (ii) Name the kind of fertiliser which can leach from the soil into rivers and lakes to cause water pollution.

_____ [1]

- (iii) State **ONE** harmful effect of water pollution on living organisms.

_____ [1]

- (d) The diagram shows how carbon dioxide is removed from the atmosphere and put back into the atmosphere.



Plants remove carbon dioxide from the atmosphere to perform the process at X.

Both plants and animals put carbon dioxide back into the atmosphere during the process which takes place at Y.

- (i) Name the processes taking place at X and Y.

X _____ [1]

Y _____ [1]

- (ii) The normal percentage of carbon dioxide in the air is about 0.04%, however this percentage is increasing.

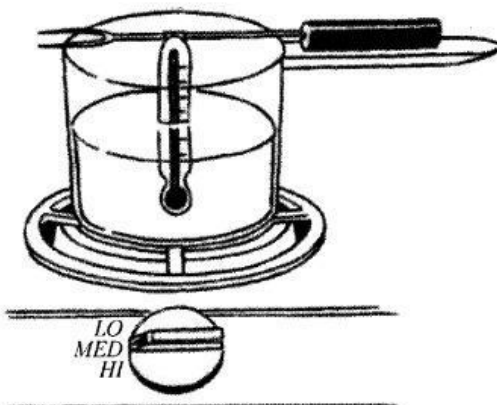
From the diagram, state **ONE** factor which accounts for this change.

_____ [1]

TOTAL MARKS [10]

5. This question is about heat and temperature.

The diagram shows a pot of **pure water** being heated to its boiling point.

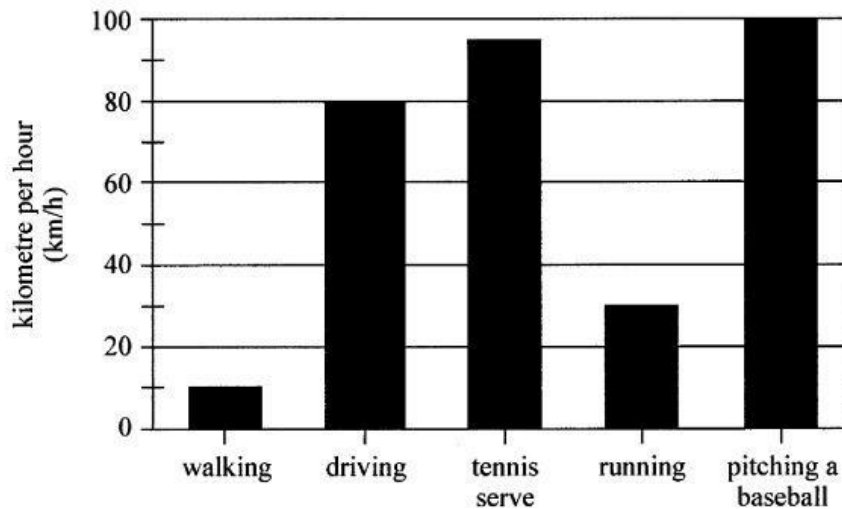


- (a) (i) State what happens to the **movement** of the water molecules when the water boils.
 _____ [1]
- (ii) Name the method of heat transfer from the stove to the
 1. pot; _____
 2. water. _____ [2]
- (iii) Give the name of the **process** taking place when the vapours from the boiling water come in contact with the cooler air.
 _____ [1]
- (iv) State whether this process is a physical or chemical change.
 _____ [1]
- (b) The room temperature of the water is 23°C before it is heated to its boiling point.
 Suggest the possible reading on the thermometer.
 _____ [1]
- (c) (i) Define **temperature**.
 _____ [1]
- (ii) Name the instrument used to measure temperature.
 _____ [1]
- (iii) Name **TWO** temperature scales used to measure and record temperature.
 1. _____
 2. _____ [2]

TOTAL MARKS [10]

6. This question is about speed, work and forces.

(a) The graph shows the speeds for 5 different activities.



Use the information from the graph to

(i) Record the time for the **slowest** and **fastest** activities.

slowest _____ [1]

fastest _____ [1]

(ii) Find the average speed for the walking, driving and running activities shown. (Show **ALL** working).

[2]

(b) (i) Calculate the work done by the pitcher after pitching a ball with a force of 30 N and a distance of 18.4 m. (Show **ALL** working).

[3]

(ii) Name the force which will cause a ball hit upwards into the air to fall to the Earth.

_____ [1]

(iii) Name the force which causes the soles on a runner's tennis shoes and car tyres to become smooth with repeated use.

_____ [1]

(iv) Name the force which makes it possible to walk, run and drive without drifting off into space.

_____ [1]

TOTAL MARKS [10]