

MARKER CODE			



STUDENT ENROLMENT NUMBER (SEN)							

FORM TWO COMMON EXAMINATION

2018

SCIENCE

QUESTION AND ANSWER BOOKLET

Time Allowed: 2 Hours

INSTRUCTIONS

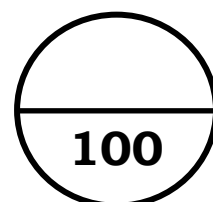
1. Write your **Student Enrolment Number (SEN)** on the top right hand corner of this page and on page 31.
2. This paper has **FIVE SECTIONS**. ALL Sections are **COMPULSORY**.

SECTION A	SCIENCE SKILLS	15 Marks
SECTION B	LIVING WORLD	25 Marks
SECTION C	PHYSICAL WORLD	20 Marks
SECTION D	MATERIAL WORLD	23 Marks
SECTION E	PLANET EARTH AND BEYOND	17 Marks

3. Answer ALL questions in the spaces provided.
4. Use a BLUE or BLACK ball point pen only for writing.
5. If you need more spaces for answers, ask the supervisor for extra paper.
6. Check that this booklet contain pages **2-31** in the correct order and that none of the pages is blank.

YOU MUST HAND IN THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL MARKS



SECTION A:**SCIENCE SKILLS****(15 MARKS)****PART A: Multiple Choice Questions****(3 marks)**

Circle the letter of the best answers.

If the best answer is A then circle A. If you want to change your answer from A to C, then put a cross on A and then circle C.

For example:  B  D

1. What is the name of the equipment shown below?



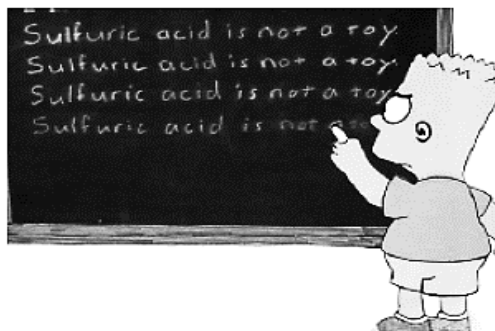
- A. test tube
B. beaker
C. measuring cylinder
D. conical flask
2. To find out the coldness of water during the night, we would measure it with a _____.
- A. ruler
B. water
C. balance
D. thermometer
3. An explanation used to verify the AIM in an experiment is the _____.
- A. Title
B. Results
C. Method
D. Conclusion

P.2**3**

PART B: Extended Answer Questions (12 marks)

1. Sione is working in the laboratory.

Figure 1.1



- a. Give **TWO** (2) important safety rules that must be followed at all times by everyone in the laboratory.

Rule 1:

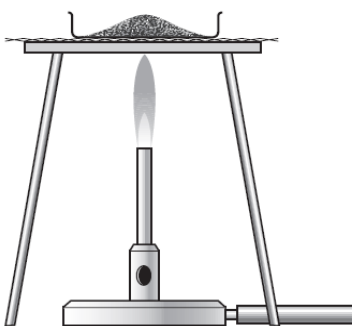
(1 mark)

Rule 2:

(1 mark)

2. Name any **ONE** (1) laboratory equipment shown in the diagram below.

Figure 1.2



Equipment One: _____
(1 mark)

P.3

3	

3. Methanol is sometimes used in antifreeze. It can be added to water in car windscreen wash bottles to prevent the water from freezing in the cold conditions.

Figure 1.3



The label on the bottle of the antifreeze has **TWO** (2) warning symbols.

- a. Write down the names for **ONE** (1) warning symbol shown on the Antifreeze.

Name of symbol: _____ (1 mark)

P.4

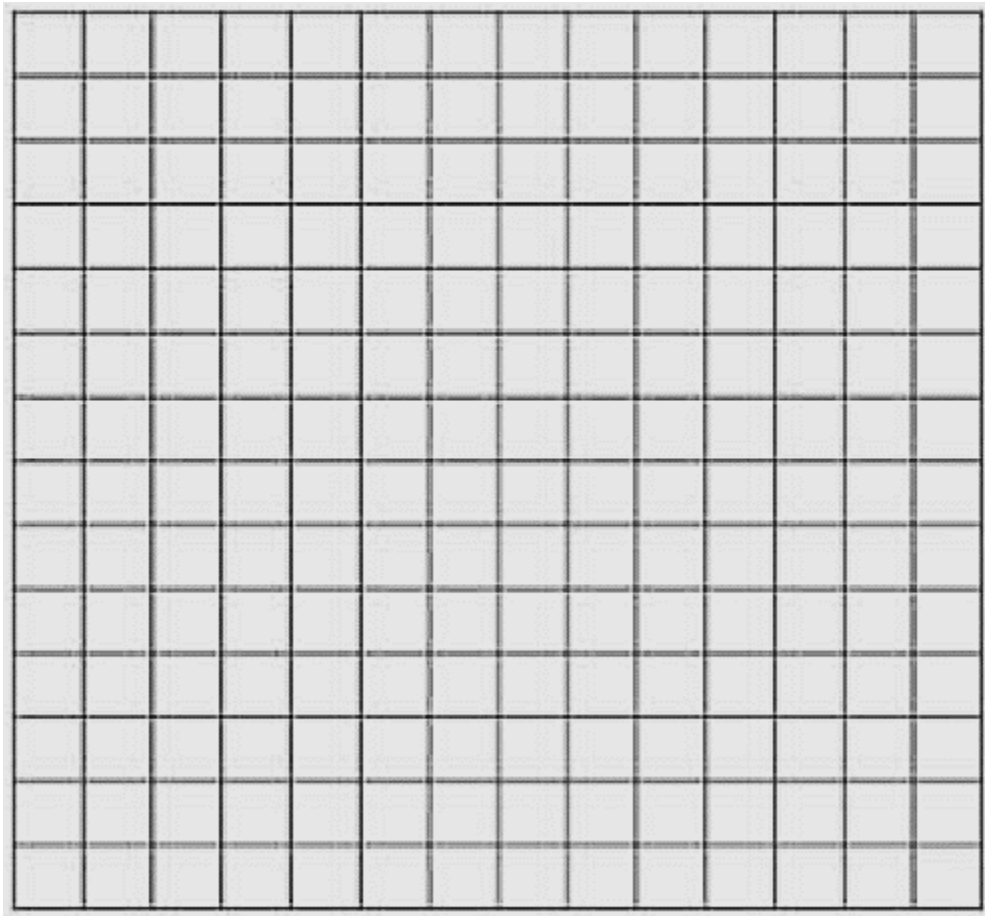
1	

4. A pair of student wish to test which material was the best insulator, so they conduct an experiment where they wrapped a cup of hot chocolate in various materials and measured how far the temperature dropped after five minutes.

The results are shown in the table below.

Materials	Temperature at the start. (°C)	Final Temperature. (°C)	Temperature Drop after 5 minutes (°C)
Tin foil	70°C	50°C	20°C
Paper	70°C	65°C	5°C
Wool	70°C	60°C	10°C

- a. Draw a **bar graph** of the results showing the importance features of how to draw a graph.



(3 marks)

P.5

3	

b. For this experiment, state the:

i. **Independent Variable:** _____ (1 mark)

ii. **Dependent variable:** _____ (1 mark)

iii. One of the two controlled variables:

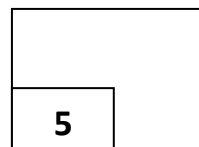
Control Variable 1: _____ (1 mark)

c. Study the graph that you have drawn in (a) on page 5 and:

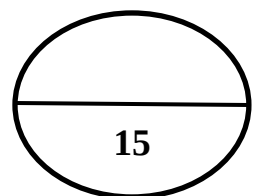
- i. Identify which material is the best insulator.
- ii. Explain why do you think so.

(2 marks)

P.6



S.A



SECTION B:**LIVING WORLD****(25 marks)****PART A: Multiple Choice Questions (3 marks)**

Circle the letter which contains the BEST answer.

1. Consider the following **FOUR** (4) statements. Photosynthesis;

- I. Requires carbon dioxide and water.**
- II. Requires glucose and oxygen.**
- III. Produces carbon dioxide and water.**
- IV. Produces glucose and water.**

Which of the statements above are correct?

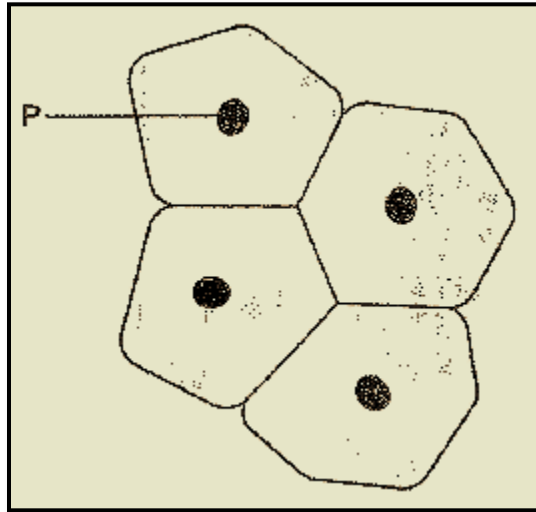
- A. I and IV
 - B. II and IV
 - C. II and III
 - D. I and III
2. Which of the following is the word equation for respiration?
- A. Glucose + Oxygen $\longrightarrow$ carbon dioxide + water + energy
 - B. Glucose + Carbon Dioxide $\longrightarrow$ Oxygen + water + energy
 - C. Carbon dioxide + Water $\longrightarrow$ Oxygen + Glucose + Energy
 - D. Carbon Dioxide + Water + Energy $\longrightarrow$ Glucose + Oxygen
3. Which of these characteristics is common to Fishes and Reptiles?
- A. Skin type
 - B. Blood Type
 - C. Movement
 - D. Reproduction

PART B: Extended Answer Questions (22 marks)

Answer all questions in the spaces provided.

1. The diagram shows a group of cells from the lining of the mouth.

Figure 2.1



- a. Give the name and function of **Part P**.

Name of part P: _____ (1 mark)

Function of part P: _____
 _____ (1 mark)

- b. Which word describes these group of cells?

Tick the correct box.

Compound

☐

Organism

☐

Organ

☐

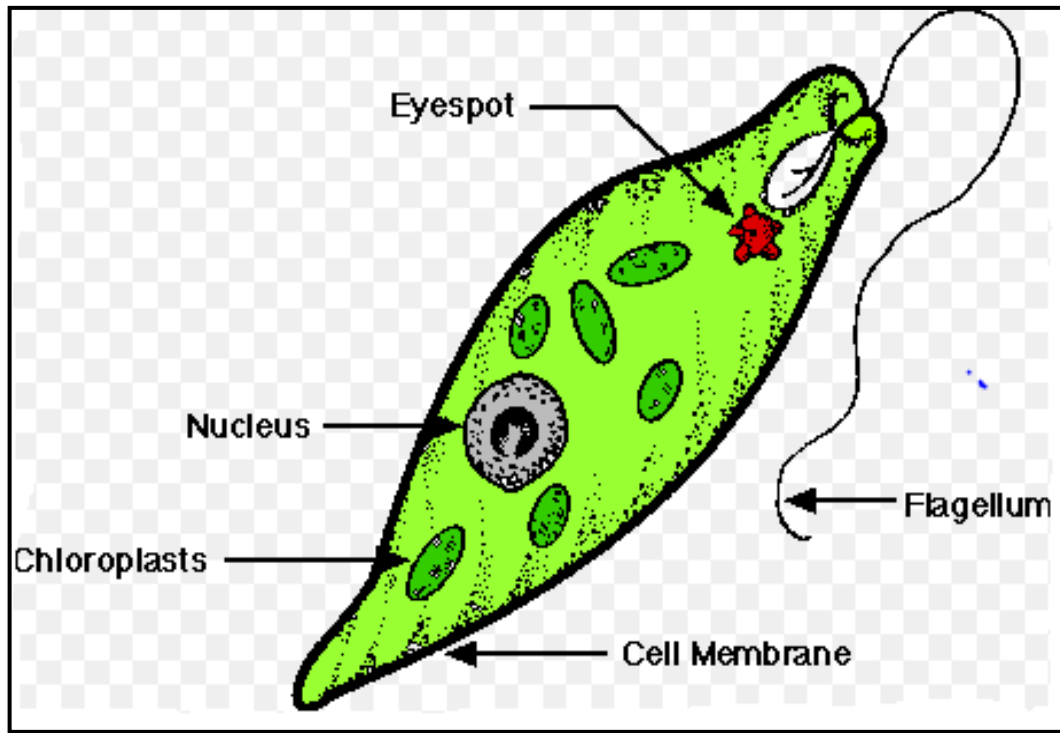
Tissue

☐

(1 mark)

2. The diagram below shows an organism known as Euglena. It is made of one cell. It lives in pond and stream. Euglena have features of both plants and animals.

Figure 2.2



- a. Give **TWO** (2) organelles that suggests it is an animal cell NOT a plant cell.

Organelle 1: _____ (1 mark)

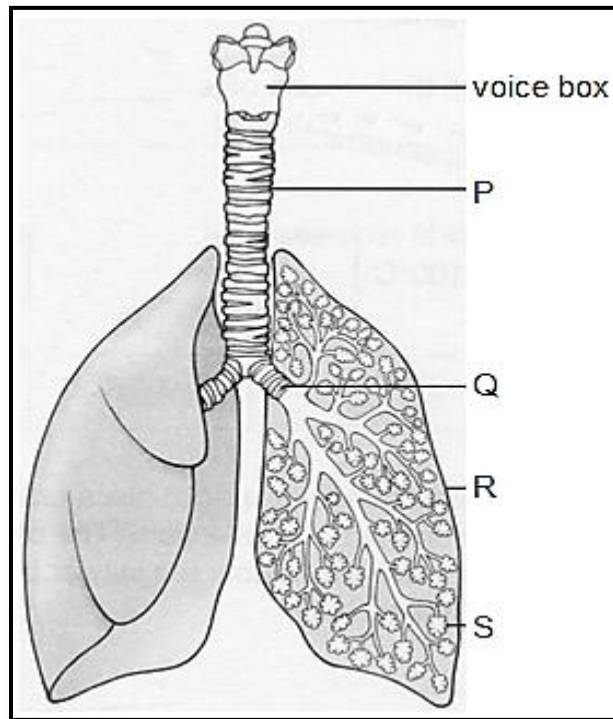
Organelle 2: _____ (1 mark)

- b. Plant cells can carry out photosynthesis. How can you tell that Euglena can carry out photosynthesis?

 _____ (1 mark)

3. The diagram below shows the lungs and the trachea, the airway leading to the lungs. One of the lungs is drawn in section.

Figure 2.3



- a. From the diagram above, give the letter which labels the:
- i. trachea - _____ (1 mark)
 - ii. alveoli - _____ (1 mark)

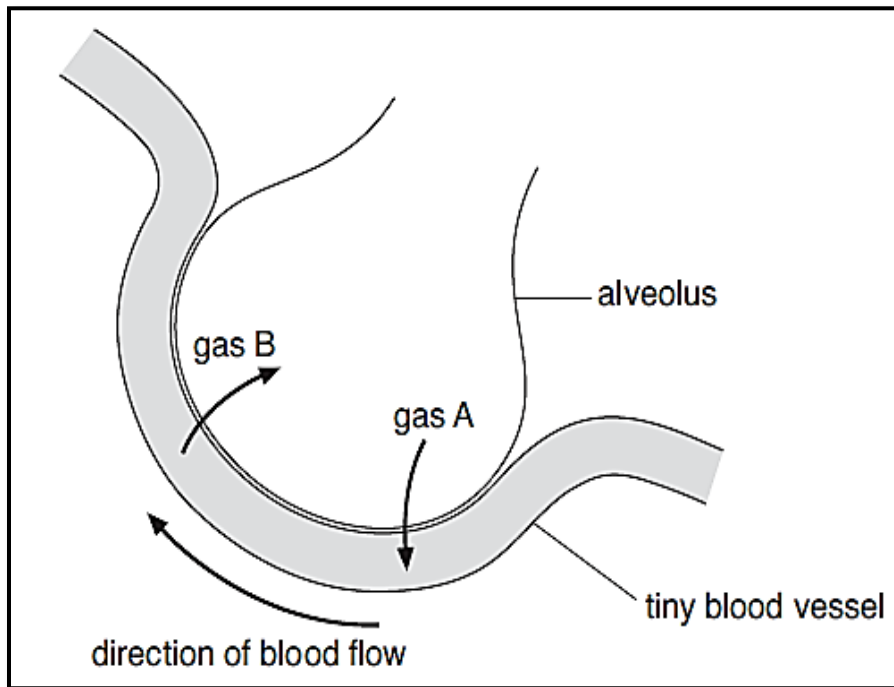
In the wall of the trachea, there are pieces of stiff material called cartilage.

- b. Why is this stiff material necessary in the wall of the trachea?

_____ (1 mark)

- c. **Diagram 2.4** below shows one alveolus and its blood supply.

Diagram 2.4



Looking at **Diagram 2.4**, **Gas A** enters the blood from the alveolus.
Gas B leaves the blood and enters the alveolus.

- i. What is the name for **Gas B**?

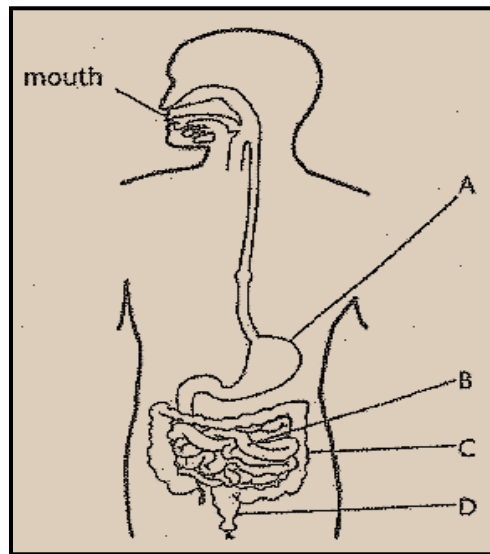
Gas B- _____ (1 mark)

- ii. Give a reason as to why it is easy for gases to pass across the wall of the alveolus.

 (1 mark)

4. **Diagram 2.5** below shows the human digestive system.

Diagram 2.5



- a. What are the names of the organs labelled **A** and **C** in the diagram?

A - _____ (1 mark)

C - _____ (1 mark)

- b. Describe the role of these organs in the digestive system.

- i. **Mouth**

(1 mark)

- ii. **Oesophagus**

(1 mark)

- iii. **Small Intestine-**

(1 mark)

- c. Identify **ONE** (1) disease which can affect the digestive system.

 (1 mark)

5. Write **ONE** (1) example of diseases caused by the following microbes.

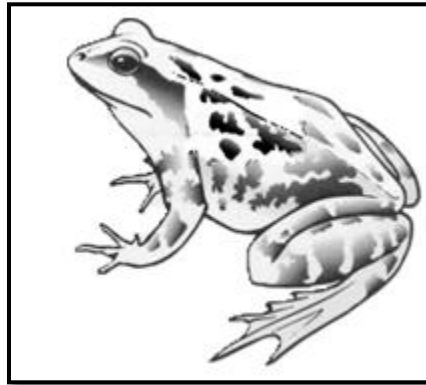
a. **Virus** - _____
 (1 mark)

b. **Bacteria** - _____
 (1 mark)

c. **Fungus** - _____
 (1 mark)

6. **Diagram 2.6** shows a frog.

Diagram 2.6



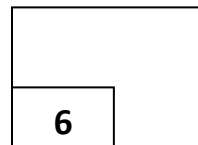
- a. To which group of vertebrates does the frog belong to?

 (1 mark)

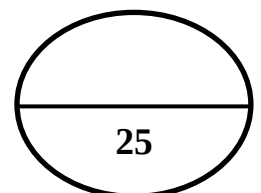
- b. Give **ONE** (1) way that the frog is adapted for jumping.

 (1 mark)

P.13



S.B



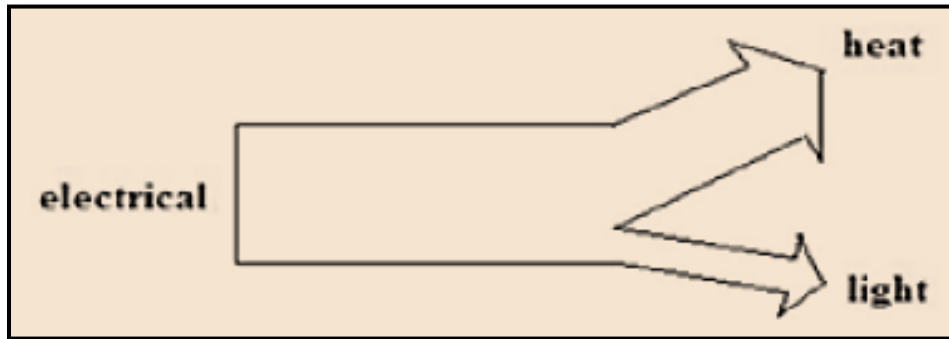
SECTION C:**PHYSICAL WORLD****(20 marks)****PART A: Multiple Choice Questions****(3 marks)**

Circle the letter which contains the BEST answer.

1. Elastic Potential energy is found in _____.
 - A. Uranium
 - B. Batteries
 - C. Rubber Band
 - D. Sunlight
2. An example of a balanced force is;
 - A. Skateboarding down a steep bumpy road.
 - B. Riding a bike up a steep hill on a windy day.
 - C. Two people playing tug of war with equal force.
 - D. Pushing a shopping trolley up an escalator with a broken wheel.
3. What is the force that acts between two objects in contact because of action-reaction?
 - A. Net Force
 - B. Weight Force
 - C. Friction Force
 - D. Rebound Force

PART B: Extended Answer Questions (17 marks)**ANSWER ALL QUESTIONS IN THE SPACES GIVEN BELOW.**

1. The diagram given below shows an energy transfer arrow for a light bulb.

Diagram 3.1

It shows that a light bulb converts electrical energy into a lot of heat energy and a little bit of light energy.

Create energy transfer diagrams for the following.

- a. **Electrical heater**

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(1 mark)

- b. **Playing music on your phone**

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(1 mark)

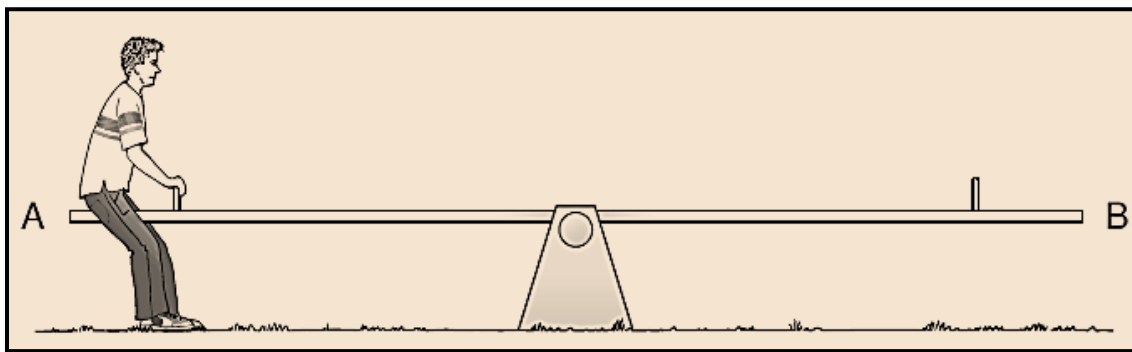
2. Five people take turns to sit on a see saw. The table gives the mass of each person.

Figure 3.2

Person	Weight (Newtons)
Mele	510 N
Sione	540 N
'Ana	490 N
Pita	540 N
Toni	560 N

Toni sits on the see saw as shown in **Figure 3.3**, but there's nobody on the other end.

Figure 3.3



- a. In which direction does his end of the see saw moves?

(1 mark)

- b. Which **TWO** (2) people in the table above could make the see saw balance?

(1 mark)

3. An astronaut weighs 140N on the moon.

- a. Calculate the astronaut's mass on the moon.

(2 marks)

P.16

4	

- b. Now the astronaut is back on earth, what will be his mass here on earth?

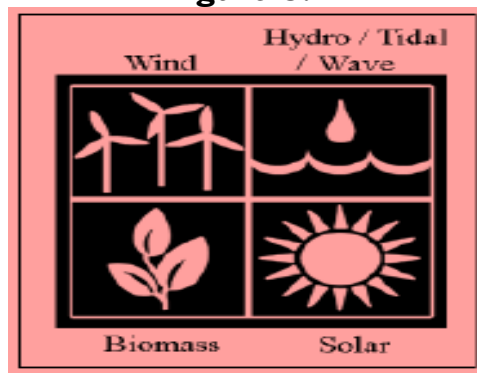
(2 marks)

- c. What would be the weight of the astronaut on earth?

(2 marks)

4. Renewable energies are shown in **Figure 3.4**.

Figure 3.4



- i. Give **TWO** (2) advantages associated with these energy types.

Advantage 1:

(1 mark)

Advantage 2:

(1 mark)

P.17

6	
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- ii. Give **TWO** (2) disadvantages associated with these energies.

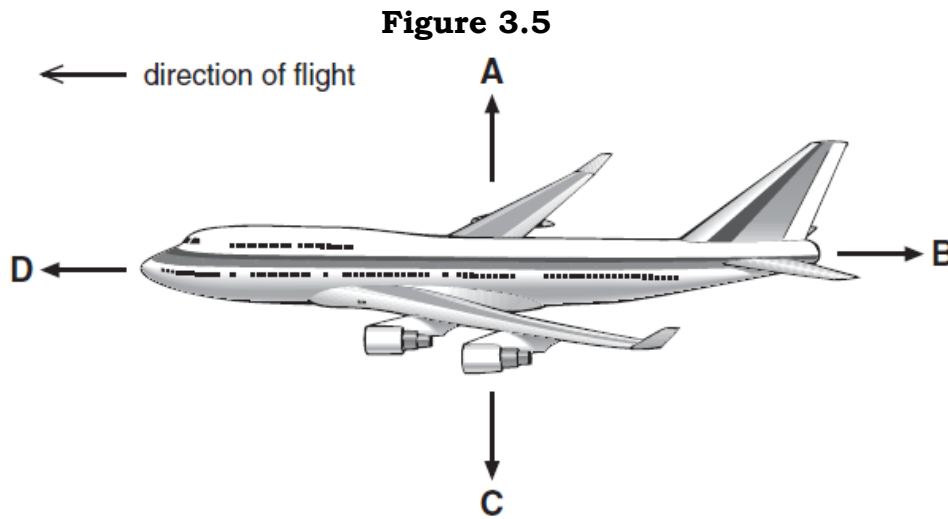
Disadvantage 1:

 _____ (1 mark)

Disadvantage 2:

 _____ (1 mark)

5. The diagram below shows four forces acting on a plane in a flight.



- a. Which arrow represents air resistance or the drag force?
 _____ (1 mark)
- b. When the plane is flying at a constant height, which **TWO** (2) forces must be balanced? Give the letters which represent these two forces.
 _____ (1 mark)
- c. When the plane is flying at a constant speed, which **TWO** (2) forces must be balanced? Give the letters which represent these two forces.
 _____ (1 mark)

P.18

5	

S.C

20

SECTION D:**MATERIAL WORLD****(23 marks)****PART A: Multiple Choice Questions (3 marks)**

Circle the letter which contains the BEST answer.

1. **“It does not have a fixed shape or definite volume and can be compressed.”**
The state of matter that is defined in the above statement is _____.

A. gas
B. solid
C. liquid
D. stone

2. The movement of particles from a high concentration area to a low concentration area is called _____.

A. diffusion
B. freezing
C. melting
D. condensation

3. Convections cannot happen in solids because _____.

A. solid particles melts easily
B. solid particles are too large
C. convections only happen in gas
D. solid particles move from place to place

PART B: Extended Answer Questions (20 marks)

Answer all questions in the spaces provided below.

1. Matter exists in different states.

a. Name a state of matter that has fixed shape.

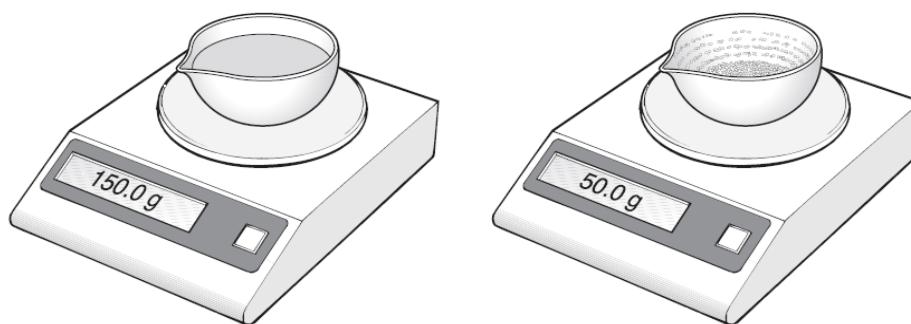
(1 mark)

b. Name a state of matter that can be poured

(1 mark)

2. Tevita poured some of the salt water from the flask into a dish. He put the dish on a balance and left it in a warm room for a week.

Figure 4.1



Look at the two readings on the balance.

a. Work out the decrease in mass.

(1 mark)

b. After one week, there was a white solid but no liquid in the dish. What had happened to the water in the dish?

(1 mark)

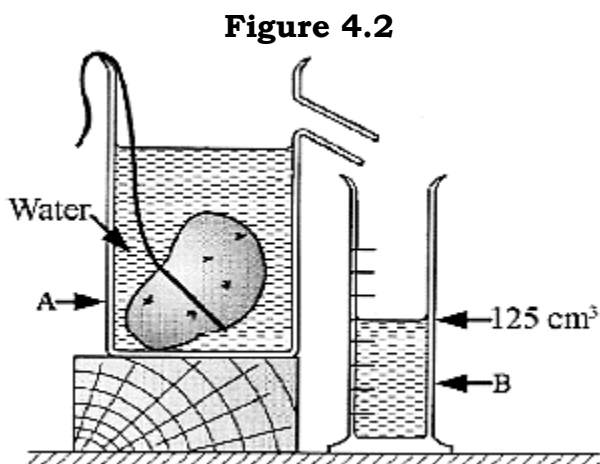
P.20

4	
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- c. What was the white solid left in the dish?

(1 mark)

3. A pupil measured the volume of a potato using the laboratory equipments labelled **A** and **B** as shown in **Figure 4.2**.



- a. Name the laboratory equipments labelled **A** and **B**.

A : _____

(1 mark)

B : _____

(1 mark)

- b. The potato had a mass of 175g and a volume of 125cm³. Calculate the density of the potato. Give the correct units of density with your answer.

(2 marks)

- c. Why did the potato sink in water?

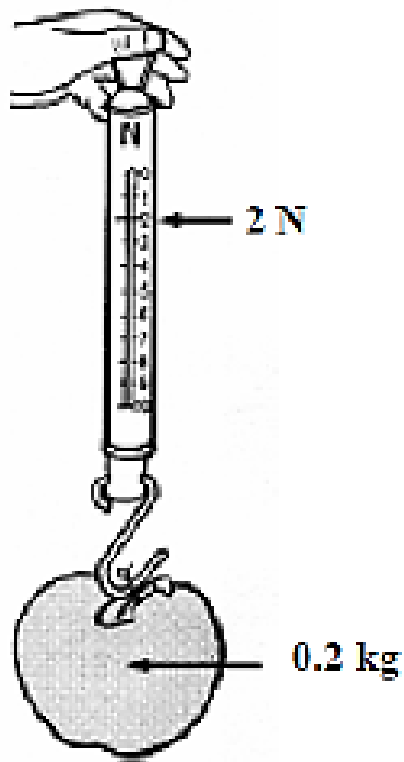
(1 mark)

P.21

6	
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4. A pupil measured the weight of an apple of mass 0.2 kg using a spring balance and get a reading of 2 N .

Figure 4.3

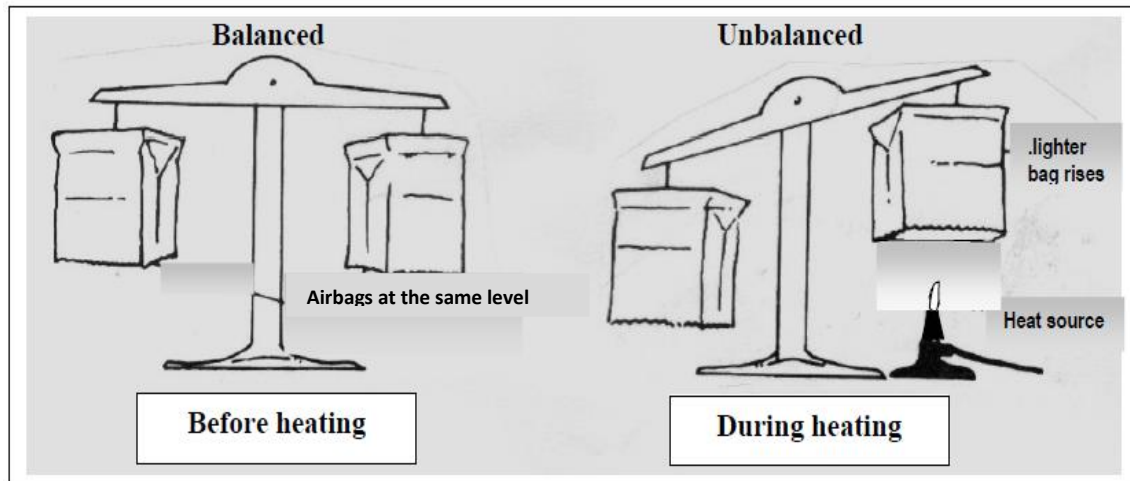


- a. Distinguish between mass and weight.

(2 marks)

5. Use the **Diagram 4.4** below to answer the questions that follow.

Diagram 4.4



- a. What happened to the airbag when it was heated?

(1 mark)

- b. Why did the airbag behave this way?

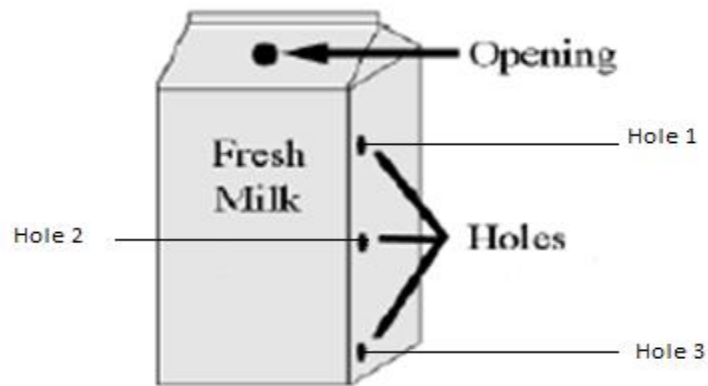
(1 mark)

- c. What property of air is shown in this activity?

(1 mark)

6. Three holes were being made in a carton of milk at the same time but in different position as shown in **Figure 4.5**.

Figure 4.5



- a. Which hole would the milk flow out with the greatest rate?

_____ (1 mark)

- b. Give a reason for your answer in (a) above.

_____ (1 mark)

- c. Which hole would the milk flow out the shortest distance?

_____ (1 mark)

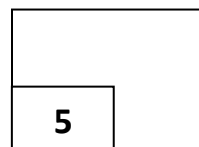
- d. Give a reason for your answer in (c) above.

_____ (1 mark)

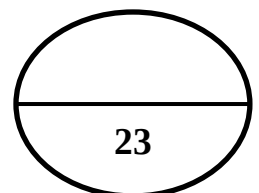
- e. What is the property of water that is shown in this activity?

_____ (1 mark)

P.24



S.D



SECTION E: PLANET EARTH AND BEYOND**(17 marks)****PART A: Multiple Choice Questions (3 marks)**

Circle the letter which contains the BEST answer.

1. An astronaut weighs less on the moon because the moon has _____.
 - A. Weaker gravity
 - B. Thinner atmosphere
 - C. Softer Surface
 - D. Colder Surface

2. Which object in space produces its own light?
 - A. Star
 - B. Moon
 - C. Planet
 - D. Asteroids

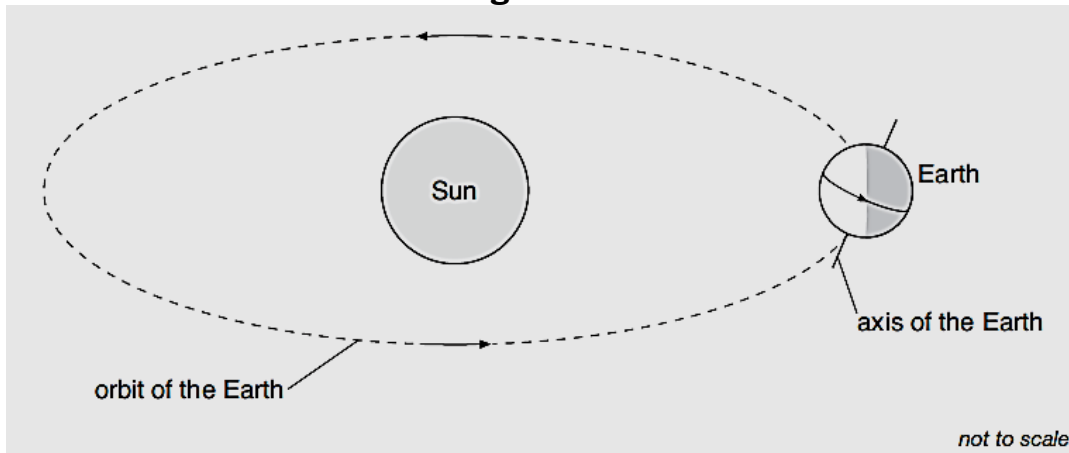
3. What is the unit used to measure distance between stars?
 - A. meters
 - B. milliliters
 - C. centimeter cube
 - D. light years

PART B: Extended Answer Questions**(14 marks)**

Answer all questions in the spaces provided.

1. The drawing below shows:

- That the earth goes around the sun.
- That the earth rotates on its axis.

Figure 5.1

Choose from the list below to answer parts (i) and (ii).

60 seconds	60 minutes	24 hours
7 days	28 days	365 days

i. How long does it take the earth to go around the sun once?

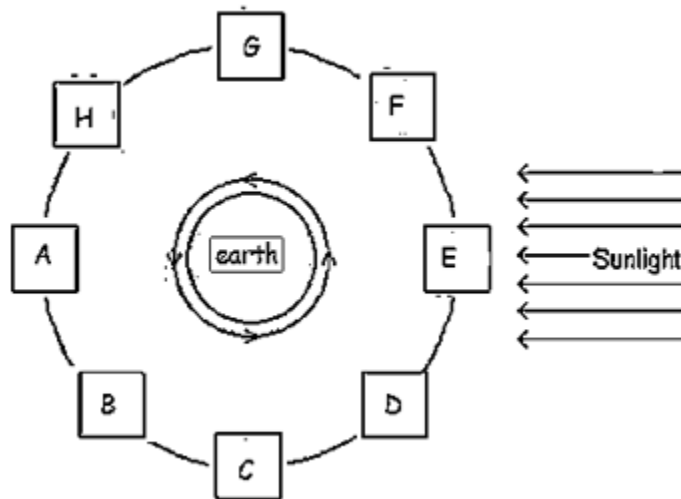
_____ (1 mark)

ii. How long does it take for the earth to rotate on its axis once?

_____ (1 mark)

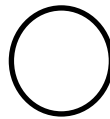
2. The diagram below shows the different phases of the moon. Use it to answer the questions that follow.

Figure 5.2



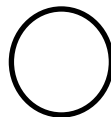
- a. Draw the phases of the moon at position **D** and **H** and correctly name each phase.

Name of phase **D**: _____



(2 marks)

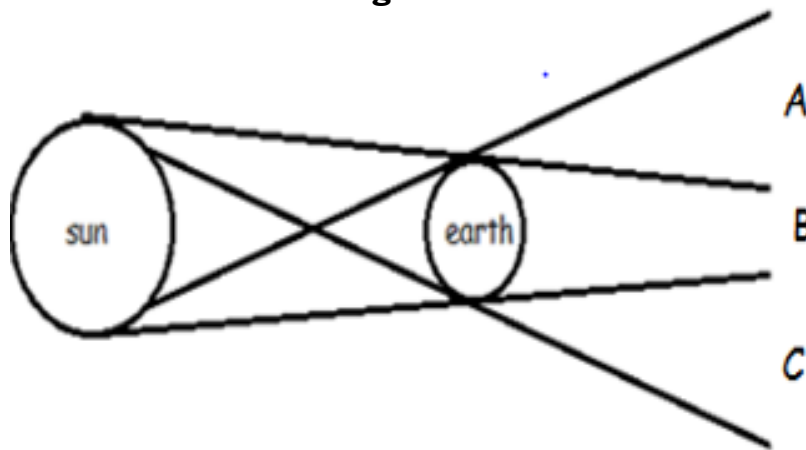
Name of phase **H**: _____



(2 marks)

3. The diagram given below shows a type of eclipse. Study it carefully and answer the questions that follow.

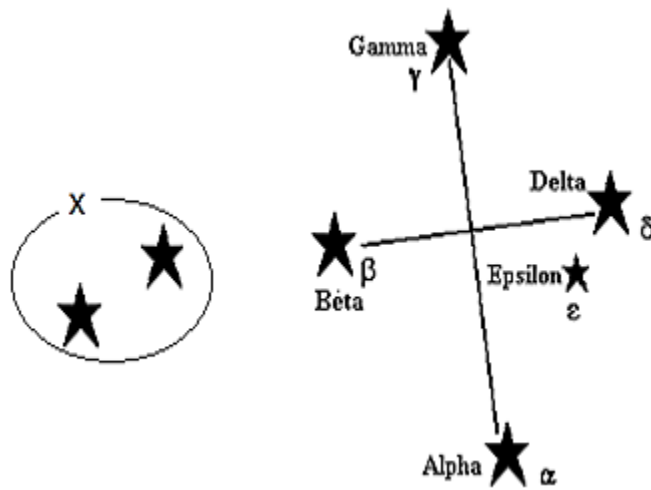
Figure 5.3



- a. On the diagram, draw the position of the moon during a TOTAL LUNAR ECLIPSE. (1 mark)
- b. Name the parts of the shadow labelled:
- A:** _____ (1 mark)
- B:** _____ (1 mark)

4. Use the diagram below to answer the questions that follow.

Figure 5.4



- a. Name the constellation above.

(1 mark)

- b. Which hemisphere is the group of stars above located?

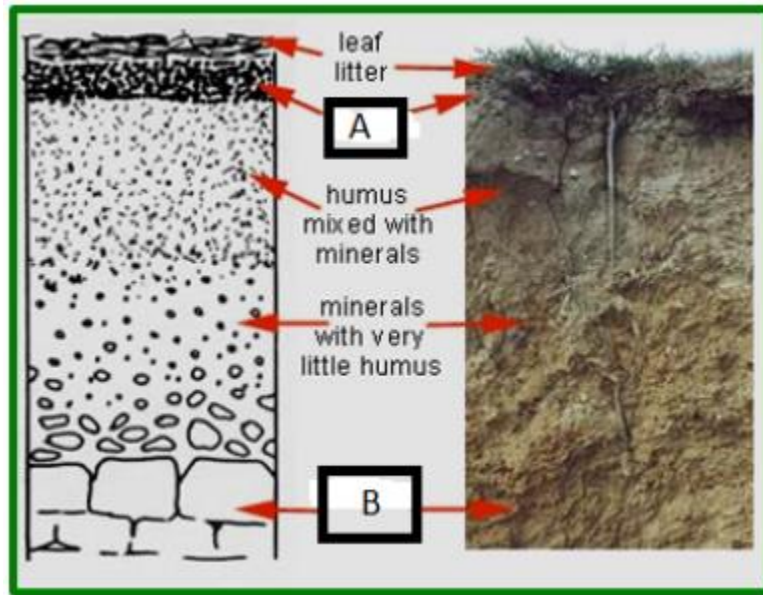
(1 mark)

- c. What is the name of the group of stars labelled **X** above?

(1 mark)

5. In a well formed soil, soil layers can be easily seen.
Complete the label for the soil layer given below by labelling soil layers **A** and **B**.

Figure 5.5



Soil Layer **A**: _____

(1 mark)

Soil Layer **B**: _____

(1 mark)

STUDENT ENROLMENT NUMBER (SEN)

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FORM TWO COMMON EXAMINATION 2018 SCIENCE

(FOR MARKERS USE ONLY)

SECTIONS		MARKS	CHECK MARKS	TOTAL MARKS
A	SCIENCE SKILLS			15
B	LIVING WORLD			25
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TOTAL MARKS				100