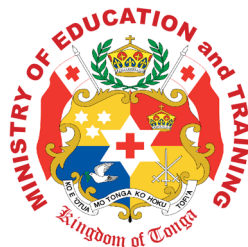


MARKER CODE				



STUDENT ENROLMENT NUMBER (SEN)									

FORM TWO COMMON EXAMINATION

2021

SCIENCE

QUESTION AND ANSWER BOOKLET

Time Allowed: 2 Hours + 10 minutes reading

INSTRUCTIONS:

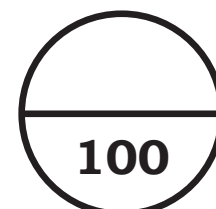
1. Write your **Student Enrolment Number (SEN)** on the top right-hand corner of this page and on page **23**.
2. This paper has **FIVE QUESTIONS**. ALL Questions are COMPULSORY.

QUESTION	TOPIC	MARKS	STUDENTS' MARKS
ONE	SCIENCE SKILLS	10	
TWO	LIVING WORLD	25	
THREE	PHYSICAL WORLD	25	
FOUR	MATERIAL WORLD	23	
FIVE	PLANET EARTH and BEYOND	17	
TOTAL MARKS		100	

3. Answer **ALL** questions in the spaces provided.
4. You are **not** allowed to use a calculator.
5. Use a black or blue ball point pen for your written answer. Use a pencil **ONLY** for drawings.
6. Write legibly and work neatly.
7. If you need more spaces for answers, ask the supervisor for extra paper. Write your **Student Enrolment Number (SEN)** on the extra papers used.
8. Check that this booklet contain pages **2 - 23** 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



QUESTION ONE:**SCIENCE SKILLS****(10 MARKS)****PART A:****MULTIPLE CHOICE QUESTIONS****(3 Marks)**

Circle the letter of the **BEST** answer.

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

For example:



B



D

1. The reading on the spring balance shown below is

- A. 3.0g
- B. 3.5g
- C. 4.0g
- D. 4.5g



2. A generalization that can be tested in a scientific report is termed

- A. Experiment
- B. Observation
- C. Results
- D. Hypothesis

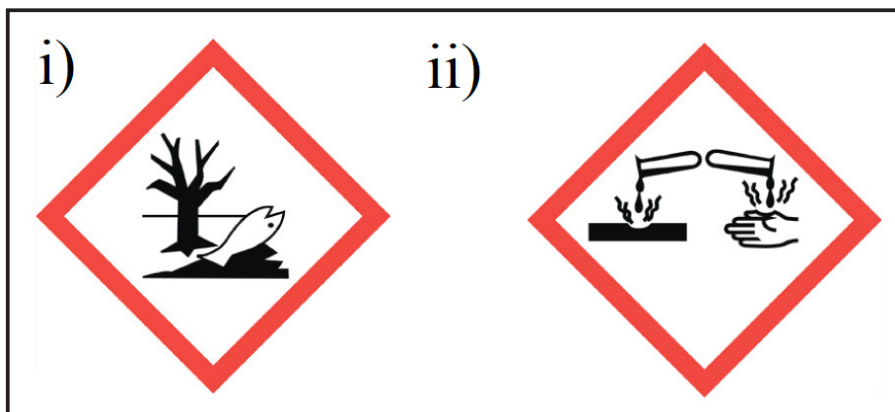
3. If you are working in the laboratory and you spilled chemical on your skin, you should

- A. apply pressure to the affected area.
- B. rub the chemical off with a clean tissue
- C. flush the skin with large amounts of water
- D. wrap a clean bandage around it

PART B: EXTENDED ANSWER QUESTIONS**(7 Marks)**

Answer **ALL** the questions in the spaces given below.

1. The pictures below show two hazard symbols.



State what do the symbols mean.

i) _____ (1 mark)

ii) _____ (1 mark)

2. Match the terms in **List A** with the correct part of the experimental report in **List B**.

LIST A	LIST B	
(i) Title	a.	1. Add 1cm of magnesium ribbon to 2ml of hydrochloric acid in a test tube. 2. Record as many observations as possible.
(ii) Aim	b.	Magnesium and acid
(iii) Method	c.	Magnesium reacts with dilute hydrochloric acid to produce a gas.
(iv) Results	d.	To observe how magnesium reacts with an acid.
(v) Conclusion	e.	• Bubbled vigorously • Test tube warmed up • Gas irritated my nose • Magnesium disappeared

Write the correct letter in **List B** under each the matching numerals in **List A** in the spaces below. (5 marks)

LIST A	(i)	(ii)	(iii)	(iv)	(v)
LIST B					

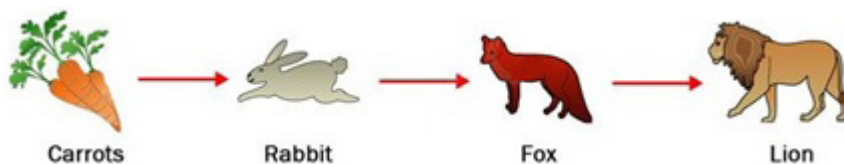
QUESTION TWO:**LIVING WORLD****(25 MARKS)****PART A:****MULTIPLE CHOICE and QUESTIONS****(5 Marks)**

Circle the letter of the **BEST** answer.

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

For example:  B  D

1. Each organism has characteristics which enables it to survive in its own particular habitat. These characteristics are called
 - A. Ability
 - B. Adaptation
 - C. Patterns
 - D. Habitat
2. The control center of a cell is the
 - A. Chloroplast
 - B. Cytoplasm
 - C. Vacuole
 - D. Nucleus
3. The process in which glucose and oxygen react in cells to release energy is called
 - A. Excretion
 - B. Photosynthesis
 - C. Respiration
 - D. Egestion
4. The herbivore in the food chain shown below is the



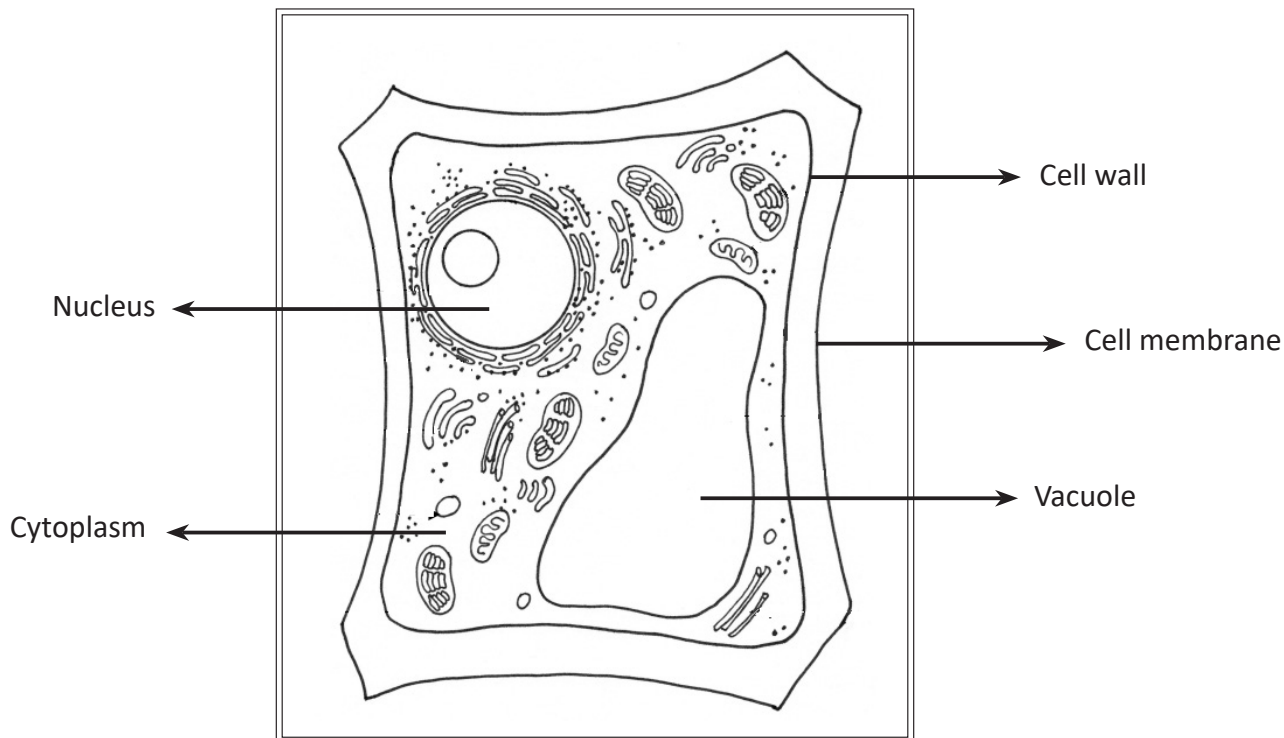
- A. Lion
- B. Fox
- C. Rabbit
- D. Carrot

5. The trachea divides into two tubes and is called the
- A. Bronchi
 - B. Alveoli
 - C. Pharynx
 - D. Bronchioles

PART B:**EXTENDED ANSWER****(20 Marks)**

Answer **ALL** the questions in the spaces given below.

1. The picture below shows the slide of a tissue being observed under the microscope.



- a. State if the slide shows an animal or plant tissue. (1 mark)

- b. Name **TWO(2)** structures that are present in a plant cell but are absent in an animal cell. (2 marks)

(i). _____ and (ii). _____

- c. Choose **ANY TWO(2)** structures labelled in the diagram and describe their functions. (2 marks)

(i) Label: _____

Function: _____

(ii) Label: _____

Function: _____

2. In August 2019, many cases of a disease called Listeriosis were reported in Spain. It was caused by bacteria found in pork that was processed in one factory. The authorities warned people not to eat pork. Those infected with Listeriosis were given antibiotics.

a. Bacteria are microbes. State another example of a microbe. (1 mark)

b. Describe the function of antibiotics. (2 marks)

Avoiding contact between raw and cooked food can prevent the spread of microbes.

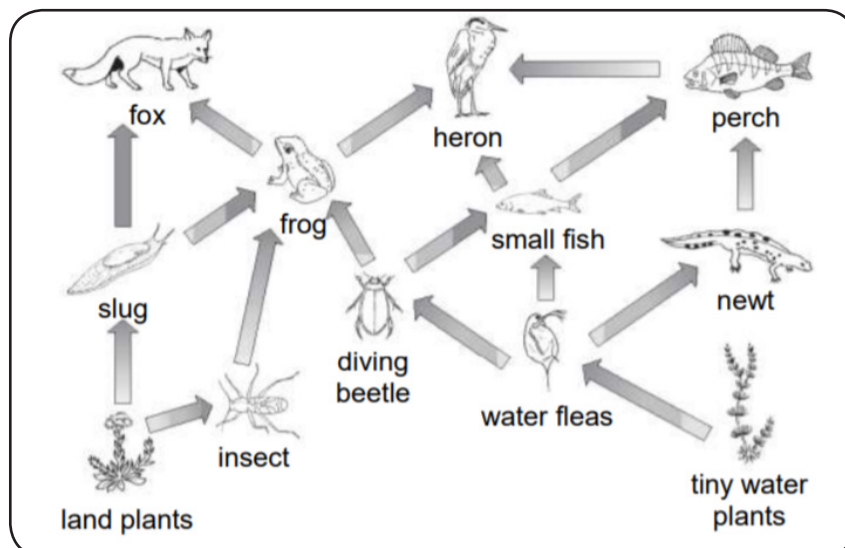
c. Describe another way that can prevent the spread of microbes between food. (1 mark)

Not all microbes are harmful

(i) State **ONE(1)** example of a useful microbe. (1 mark)

(ii) Describe **TWO(2)** ways of how it is useful. (2 marks)

3. The diagram below shows a food web.

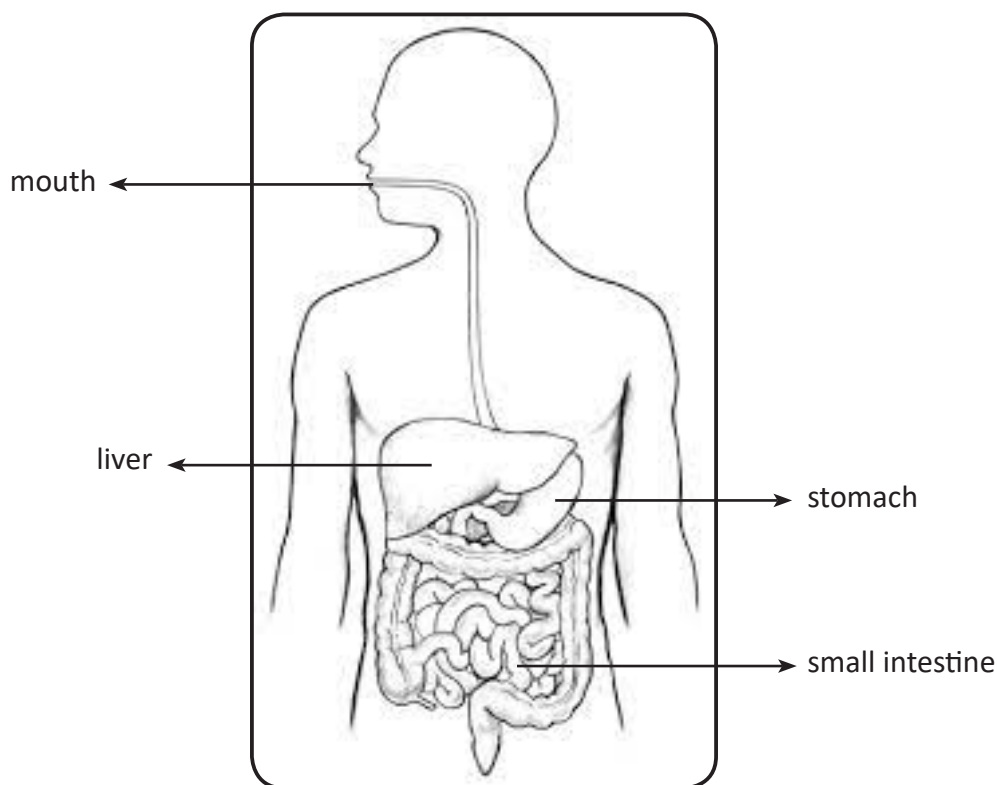


- a. State what the arrows in the food web is meant to show. (1 mark)

- b. Construct a food chain made up of five organisms from this food web. (2 marks)

- c. State what would happen to the number of diving beetles if all the frogs suddenly died. Give a reason for your answer. (2 marks)

4. The diagram below shows the human digestive system.



Name the part of the digestive system where the following processes takes place. (3 marks)

- i. Food is mixed with acid and other digestive juices: _____
- ii. Soluble nutrients are absorbed into the bloodstream: _____
- iii. Food first acted on by enzymes: _____

QUESTION THREE:**PHYSICAL WORLD****(25 MARKS)****PART A:****MULTIPLE CHOICE****(6 Marks)**

Circle the letter of the **BEST** answer.

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

For example:  B  D

1. Metre (m) is a standard unit of measuring
 - A. Weight
 - B. Length
 - C. Volume
 - D. Capacity
2. The arrow represents the pushing force in moving the box   from left to right. The weight force will act on the box
 - A. from right to left
 - B. from left to right
 - C. vertically downwards
 - D. vertically upwards
3. Which of the following is not an example of a non-contact force?
 - A. Gravitational forces
 - B. Electrostatic forces
 - C. Magnetic forces
 - D. Frictional forces
4. Two students weighed a piece of wood in air and they weighed it again in water. They noticed that there is
 - A. a loss in weight
 - B. a gain in weight
 - C. an increase in size
 - D. no change in weight

5. Which of the following source is not renewable?

- A. Solar
- B. Oil
- C. Wind
- D. Water

6. Kerosene is used by the lamp below for lightning. The energy change that takes place when the lamp is on would be

- A. light $\longrightarrow$ heat
- B. heat $\longrightarrow$ sound
- C. chemical $\longrightarrow$ light
- D. light $\longrightarrow$ sound



PART B:**EXTENDED ANSWER****(19 Marks)**

Answer **ALL** the questions in the spaces given below.

1. Peni and Dania were investigating the movement of a marble out of a tube onto different surfaces: gravel path, grass, floor tiles, carpet and wood.

They measured how far the marble rolled until it stopped. The table shows the distances travelled by the marble on each surface.



Surface	Distance marble rolled (cm)
Gravel path	21
Grass	3
Floor tiles	163
Carpet	32
Wood	85

- a. From the table, name the surface on which the marble travelled the shortest distance (1 mark)

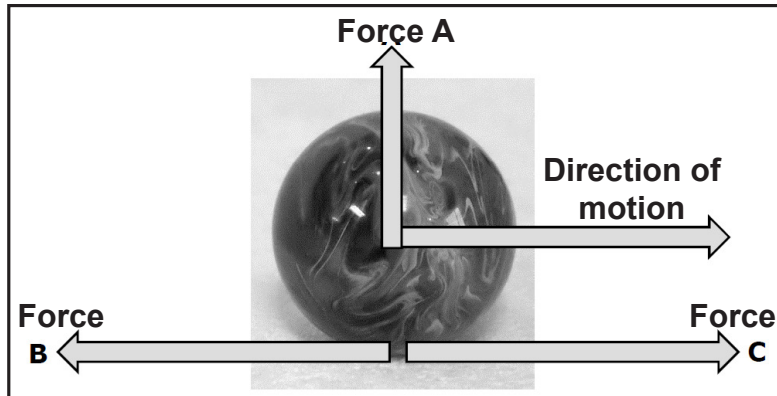
- b. Name the force that stops the marble. (1 mark)

- c. State the distance in which the marble rolled on the floor tiles. Give a reason for your answer. (2 marks)

- d. Describe **TWO(2)** things that Peni and Dania should do to make the experiment fair. (2 marks)

- e. State how they can make the marble roll faster down the tube. (1 mark)

- f. The diagram below shows the forces represented by arrows acting on the marble. Circle the force that helps the marble stop. (1 mark)

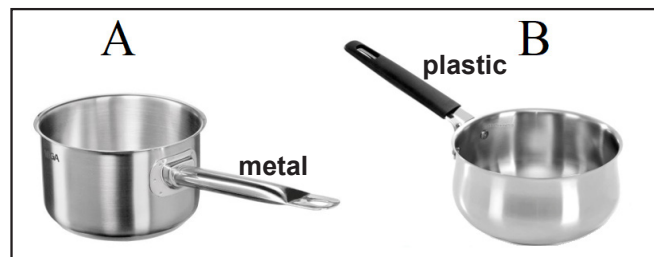


- g. Name **TWO(2)** everyday situations where **Force B** can be helpful. (2 marks)

(i) _____

(ii) _____

2. Lui needs a pot that he can use without the risk of burning his hand. Lui was undecided whether to buy **pot A** or **pot B** seen in the diagram below.



- i. State which pot Lui should buy to avoid burning his hand. (1 mark)

- ii. Give a scientific reason for your answer. (2 marks)

3. Complete the boxes below each statement to show the energy change that takes place.

- a. A plant trapping sunlight and making its food. (2 marks)

→

- b. Generating electricity from a nuclear power station.

→

4. An object weighs 720N on earth.

- a. Calculate the mass of the object. (*Show all working and units*) (2 marks)

- b. The acceleration due to gravity on the moon is $\frac{1}{6}$ as much as that on Earth.
Calculate the **weight** of the object on the moon. (*Show all working and units*) (2 marks)

QUESTION FOUR:**MATERIAL WORLD****(23 MARKS)****PART A:****MULTIPLE CHOICE****(5 Marks)**

Circle the letter of the **BEST** answer.

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

For example:  B  D

1. Which of the following is **not** an example of a physical change?
 - A. Condensation
 - B. Filtration
 - C. Decomposition
 - D. Evaporation
2. When a person is smoking in one room, it is not very long before you can smell it in another room. This is because smoke moves by:
 - A. Diffusion
 - B. Expansion
 - C. Evaporation
 - D. Condensation
3. Sublimation is the change of state from
 - A. solid to liquid
 - B. liquid to solid
 - C. solid to gas
 - D. liquid to gas
4. A substance has no fixed shape. From this information it would be correct to say that the substance is a:
 - A. gas
 - B. liquid or gas
 - C. solid or liquid
 - D. solid and liquid

5. The table below shows the masses and volumes for three objects, **P**, **Q** and **R**

	P	Q	R
Mass	40g	60g	80g
Volume	20cm ³	60cm ³	40cm ³

(The formula for calculating the density of an object is: $\text{density} = \text{mass} / \text{volume}$.)

Which of the following is correct?

- A. Q is more dense than P
- B. P is more dense than R
- C. Q and R have equal densities
- D. P and R have equal densities

PART B:**EXTENDED ANSWER****(18 Marks)**

Answer **ALL** the questions in the spaces given below.

1. **TRUE or FALSE**

(4 marks)

Tick (✓) **ONE(1)** box in each row on the table below to show whether each statement is **TRUE** or **FALSE**.

IDEA	TRUE	FALSE
Liquids expand directions to take the shape of the container they are in.		
When solids reach their melting points, they become gas.		
A mixture is made up of two or more substances put together which can be separated.		
A physical change is usually non-reversible.		

2. **FILL IN THE BLANKS**

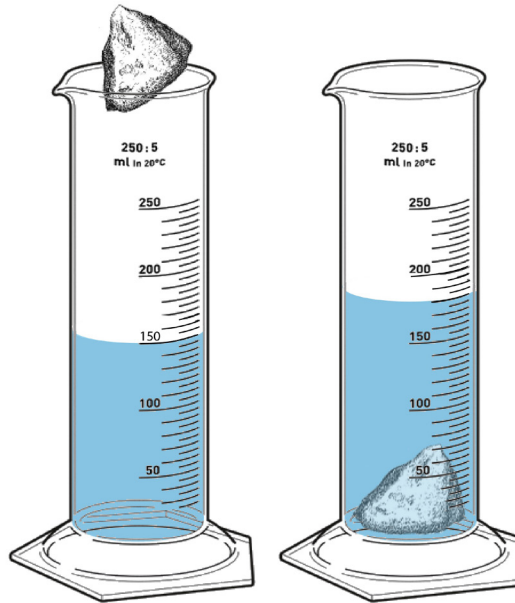
Fill in the blank spaces using the most appropriate words.

(4 marks)

- a. _____ changes produce new substances with new properties.
- b. Melting is an example of a change of _____.
- c. A method by which rusting of iron can be prevented is _____

- d. _____ contain elements which are chemically joined together

3. The figure below shows a mass of 180g of iron being immersed in a measuring cylinder of water.

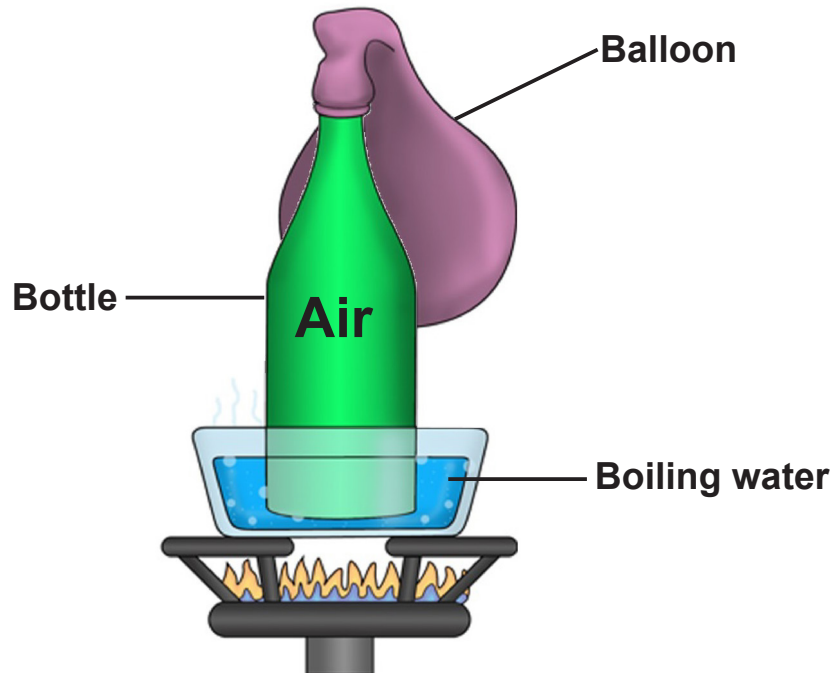


- a. Calculate the volume of the mass of iron. (*Show all working and units*) (3 marks)

- b. Calculate the density of this mass of iron. (*Show all working and units*) (2 marks)

- c. State **ONE(1)** advantage of using the displacement of water to find the volume of a solid. (1 mark)

4. The bottle shown in the figure below has a small rubber balloon over its mouth. It is placed in a beaker of boiling water.



- a. State what will happen to the balloon. (1 mark)

- b. Explain the event shown in **(a)** above using the particle theory. (3 marks)

QUESTION FIVE:**PLANET EARTH and BEYOND****(17 MARKS)****PART A:****MULTIPLE CHOICE****(5 Marks)**

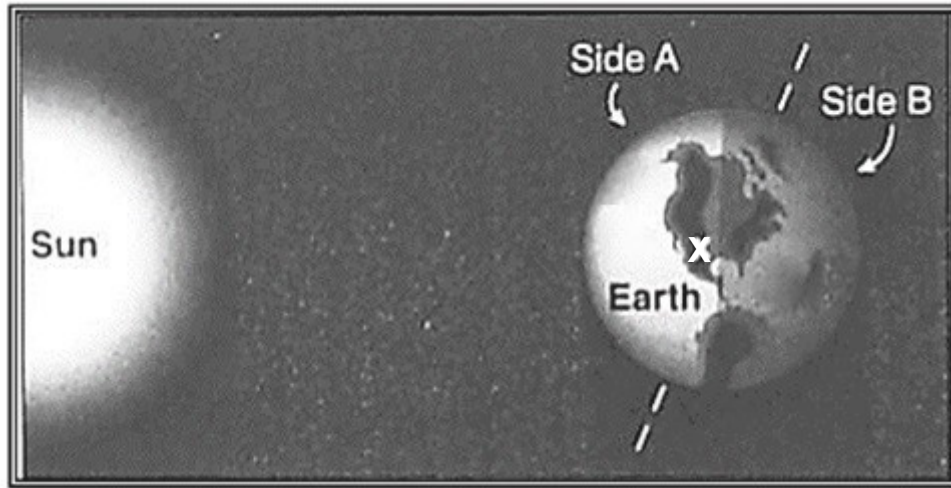
Circle the letter of the **BEST** answer.

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

For example:  B  D

1. The layer of air which surrounds Earth is called
 - A. Season
 - B. Climate
 - C. Weather
 - D. Atmosphere
2. Physical weathering of rocks and soil is caused by
 - A. plants and animals
 - B. heat, water, ice and wind
 - C. dead plants and animals
 - D. bacteria and earthworm
3. Humidity is the amount of _____ in the air.
 - A. heat
 - B. wind
 - C. temperature
 - D. water vapour
4. Patterns of stars formed in the night sky are called
 - A. Galaxies
 - B. Nebulae
 - C. Universe
 - D. Constellation

5. In the picture below, Texas is the area marked **X** on **Side A** of the Earth.



According to the picture, which of the following is true about Texas at this time?

- A. It is daytime in Texas
- B. It is night time in Texas
- C. It is winter time in Texas
- D. It is summer time in Texas

PART B:**EXTENDED ANSWER****(12 Marks)**

Answer **ALL** the questions in the spaces given below.

1. **MATCHING**

(4 marks)

Write the correct letter in **List B** under each matching numerals in **List A** in the second table below.

List A	List B
(i) Erosion	a. Sunlit side of the moon that faces away from the earth
(ii) Weathering	b. One of the five brightest stars of the Southern Cross
(iii) Epsilon crucis	c. State of the air and atmosphere at a particular time and place
(iv) New moon	d. Washing away of rocks, soil and minerals caused by water, wind and mankind
	e. Happens at the start of each new month.
	f. Breaking down of rocks, soil and minerals

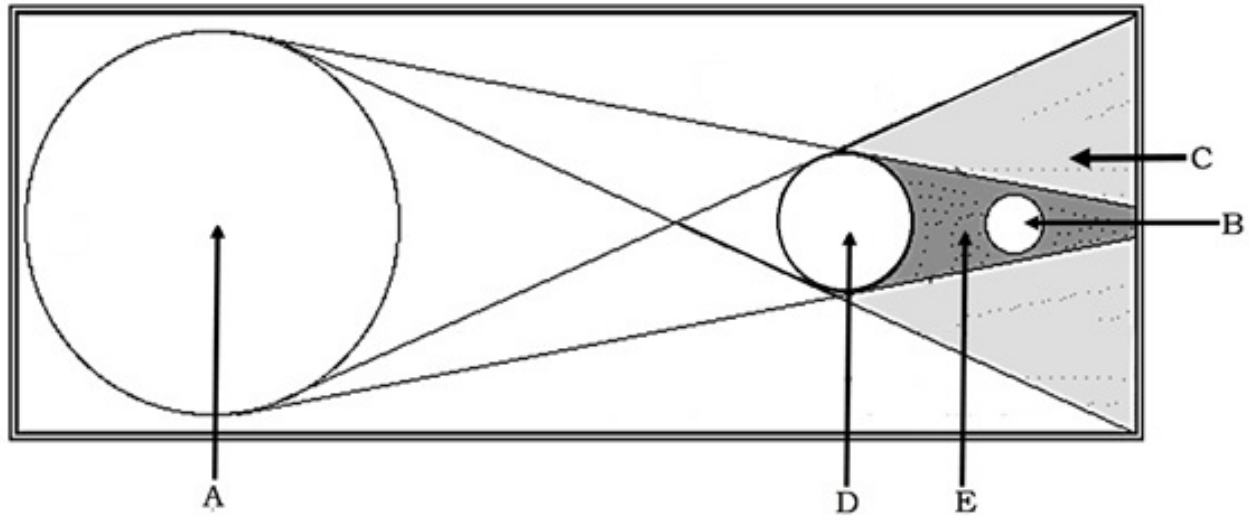
LIST A	(i)	(ii)	(iii)	(iv)
LIST B				

2. **LABELLING**

(5 marks)

The diagram below shows an eclipse. Label the diagram given using the words from the **Word List** provided. Write the correct word that represents each letter in the spaces given.

Word list:				
• Earth	• Umbra	• Moon	• Sun	• Penumbra



- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

3. **TRUE or FALSE.**

Tick (✓) **ONE(1)** box in each row on the table below to say whether each statement is **TRUE** or **FALSE**. (3 marks)

IDEA	TRUE	FALSE
(a) Days and nights are caused by the earth's rotation.		
(b) The tides are at their greatest during a new moon.		
(c) Solar eclipse is when the moon is directly in the earth's shadow		

STUDENT ENROLMENT NUMBER (SEN)

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FORM TWO COMMON EXAMINATION

2021

SCIENCE

(For Markers Use Only)

QUESTION	MARKS	CHECK MARKS	TOTAL MARKS
ONE			10
TWO			25
THREE			25
FOUR			23
FIVE			17
TOTAL MARKS			100