



Student's Name: _____ Roll No: _____ Grade: 6

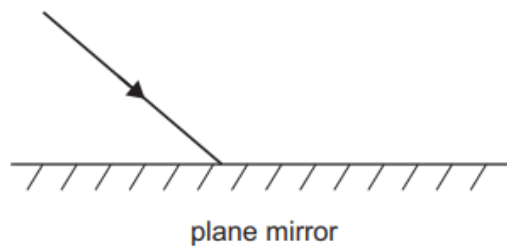
Marks: 40

Time Duration: 90 minutes

Invigilator's Sign.

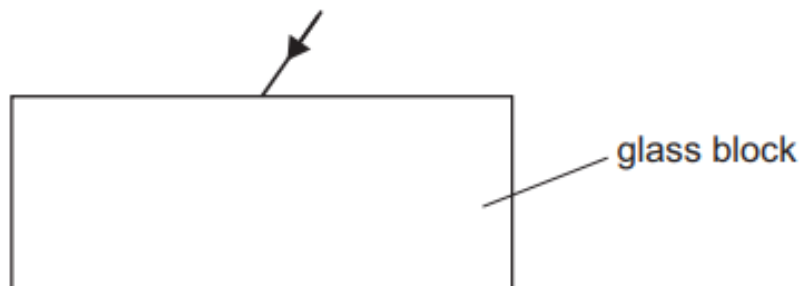
Q.1. Blessy investigates rays of light.

- a. Look at the diagram. It shows a ray of light hitting a plane mirror. Complete the diagram by drawing the ray of light after it hits the plane mirror. **(1)**



- b. Name the process that happens when the ray of light hits the plane mirrors. **(1)**

- c. Look at the diagram. It shows a ray of light hitting a glass block. The ray of light changes direction as it enters the glass block. Complete the diagram by drawing the ray of light as it enters and leaves the glass block. **(3)**

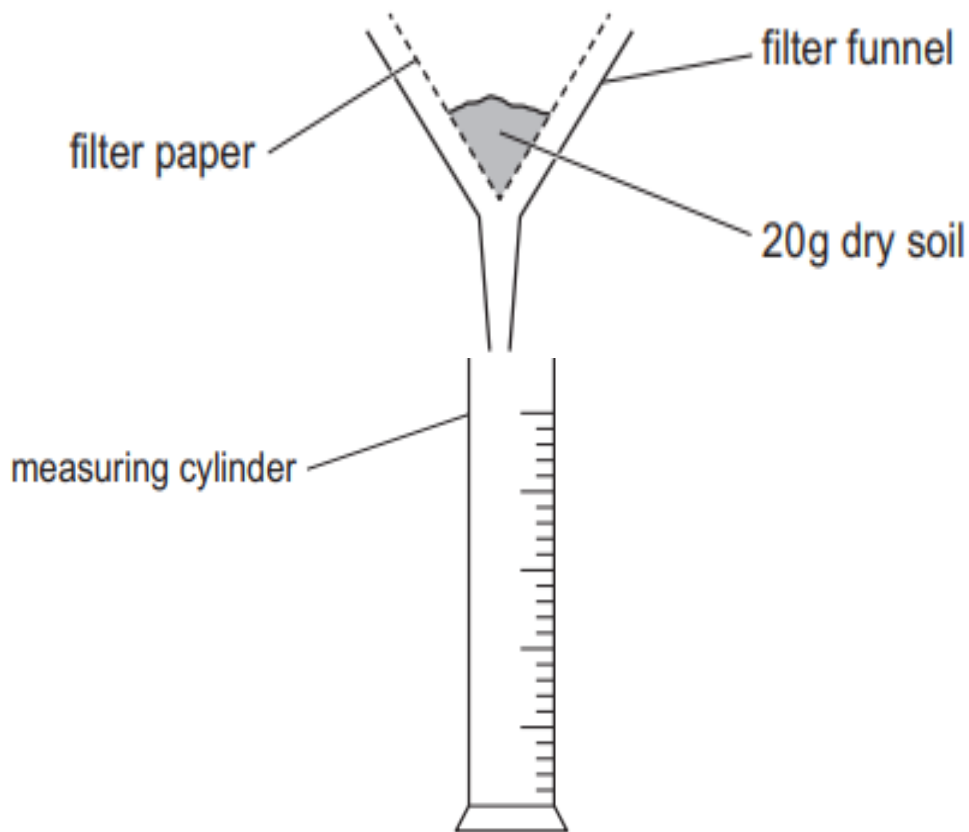


- d. Name the process that describes the change of direction when the ray of light enters the glass block. **(1)**

Q.2. Soils are a mixture of clay, sand and an organic content called humus. Amelia investigates the drainage of some dry soils.

Amelia:

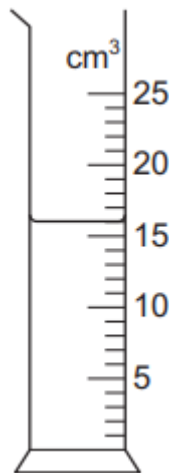
- places 20 g of dry soil W into the equipment shown
- pours 50 cm³ of water onto the dry soil
- measures the volume of water that drains into the measuring cylinder in 1 minute.
- repeats the experiment for each of the dry soils, X, Y and Z



Amelia's results are shown in this table.

Soil	Percentage of			Volume of water collected after one minute in cm ³
	Clay	Sand	Humus	
W	20	70	10	30
X	15	75	10	36
Y	70	20	10	10
Z	50	40	10	_____?

- a. Look at the diagram. It shows the measuring cylinder of water collected for soil Z. Write down, in Amelia's results table, the volume of water collected for soil Z. **(1)**



- b. Explain why the volume of water added to the dry soil is always 50 cm³. **(2)**

- c. Write down the dependent variable in this investigation. **(1)**

- d. Which soil has the best drainage? Circle the correct answer. **(1)**

W **X** **Y** **Z**

- e. Amelia repeats the investigation with a dry soil containing 90% sand and 10% humus. Predict the volume of water collected. **(1)**

_____ cm³

Q.3. Elephants have a similar circulatory system to humans.

- a. Write down the names of the three types of blood vessels in an elephant. **(3)**

1. _____

2. _____

3. _____

Q.4. During breathing, air passes into the air sacs of the lungs, and is then released back into the atmosphere. Look at the table. It shows the composition of inhaled air and exhaled air.

Gas	Percentage in inhaled air	Percentage in exhaled air
Carbon dioxide	0.04	4
Nitrogen and other gases	80	80
oxygen	20	16

a. Describe the differences between the composition of inhaled air and exhaled air. **(2)**

1. _____

2. _____

b. Explain what happen in the air sac to cause these differences between inhaled and exhaled air. **(2)**

c. Air enters the human respiratory system through the nose and nasal cavity. Write down 2 other parts that inhaled air moves through before it reaches the air sac. **(2)**

_____ and _____

Q.5. Look at the list of energy sources. Tick (✓) the two renewable energy sources. (2)

Coal

oil

Hydroelectric

Natural gas

solar

Q.6. Ahmed has 20 pepper plants. He uses a liquid fertilizer to increase his crop of peppers. This fertilizer is sprayed on the leaves or watered on the roots. Ahmed sprays the leaves of 10 pepper plants with the liquid fertilizer. He waters the roots of the other 10 paper plants with the liquid fertilizer.



- a. Describe two pieces of evidence Ahmed collects to compare the growth of the pepper plants. **(2)**

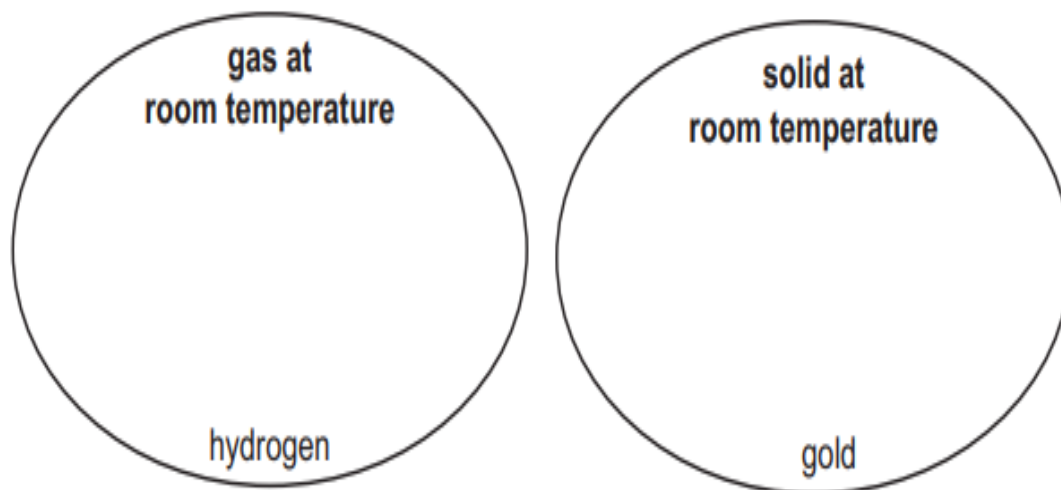
- b. Ahmed uses 20 pepper plants for his investigation. Explain why using 20 pepper plants are better than using only two pepper plants. **(1)**

- c. Suggest two variables Ahmed controls in his investigation. **(2)**

Q.7. Look at the table of properties of some substances.

substance	temperature substance changes from solid to liquid in °C	temperature substance changes from liquid to gas in °C
hydrogen	-260	-253
gold	1062	2000
carbon	3652	4827
copper	1085	2580
neon	-249	-246
lead	327	1755

- a. Room temperature is 25°C. Complete the diagram using **carbon, copper, neon** and lead. (2)



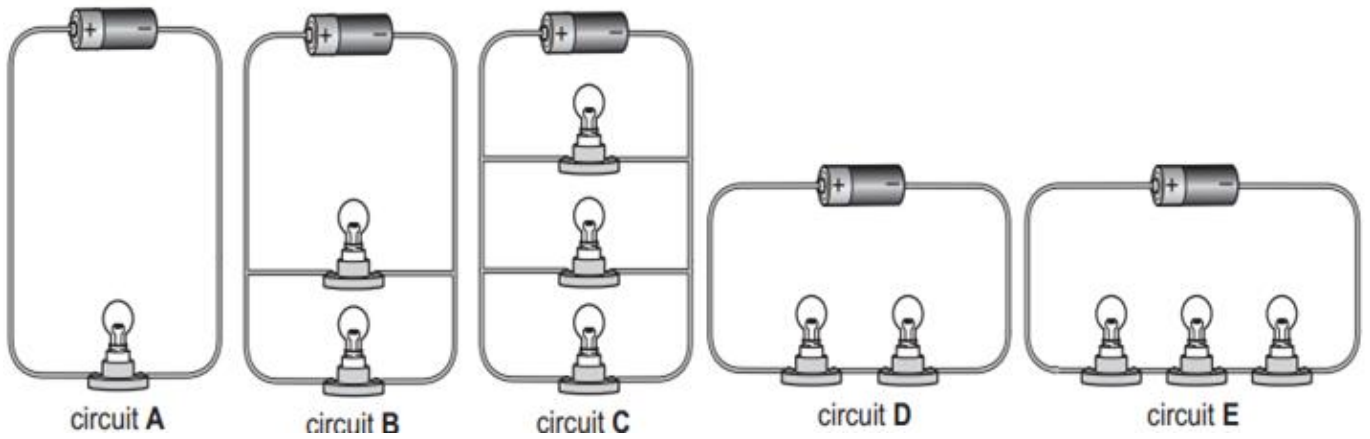
- b. Which substance has the lowest boiling point? (1)

- c. Complete the sentences to describe the difference between boiling and evaporation. (2)

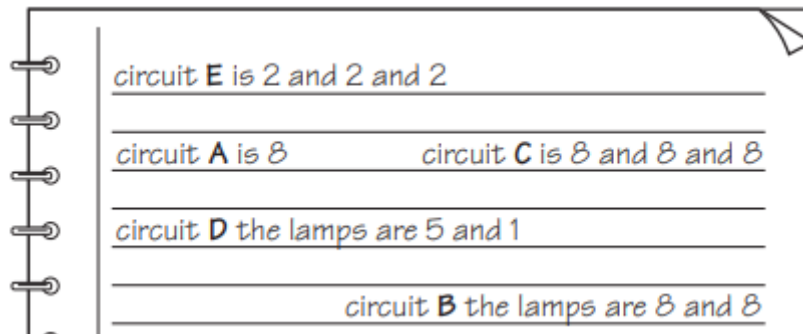
Boiling is _____

Evaporation is _____

Q.8. Lily compares lamp brightness in five different circuits.



She uses identical lamps and identical cells for each circuit. Lily uses a scale for lamp brightness for each lamp. 10 is the brightest and 1 is the least bright. Look at her results.



a. Lily starts to write the results into her results table. Complete her results table. (2)

circuit	
A
B
C	8 and 8 and 8
D
E

b. There is one anomalous result. Circle the circuit with the anomalous result. (1)

- A B C D E

Q.9. There are eight planets in the Solar System. Complete the table using these distances from the Sun in millions of km. (2)

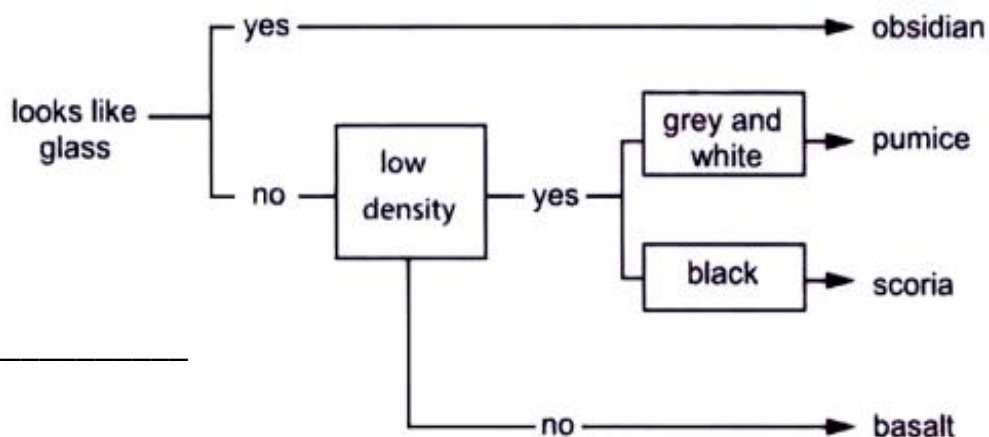
(58, 108, 150, 228, 779, 1434, 2873, 4495)

planet	distance from the Sun in millions of km
Earth
Jupiter
Mars
Mercury
Neptune
Saturn
Uranus
Venus

Q.10. Michael investigates rocks. He describes the rocks he investigates. Here is a table of his observations. (2)

Rock	Observation
A	grey and white rock that has a low density
B	black rock that has a high density
C	Shiny black rock that looks like glass
D	black rock that has a low density

Use this key to identify the four rocks.



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