

Name:.....Signature.....

**END OF YEAR ASSESSMENT**

**SENIOR ONE - 2023**

**PHYSICS**

Time: 1 ½ hours

**INSTRUCTIONS**

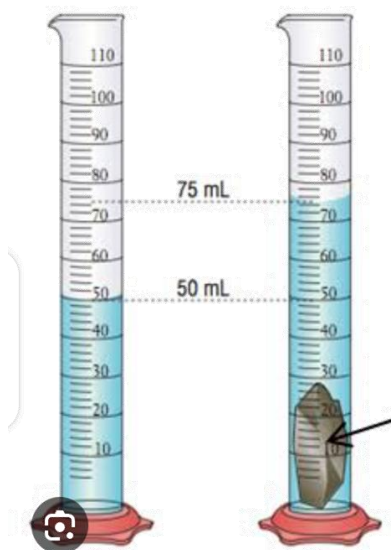
- ❖ This paper consists of two sections **A** and **B**.
- ❖ Section A consists of 6 short response questions each carrying five marks.  
Answer **all** questions in this section in the spaces provided.
- ❖ Section B consists of one extended response questions each carrying 20 marks. Answer this question on the answer sheet provided.
- ❖ Assume where necessary;
  - Density of water = 1000 kg m<sup>-3</sup>
  - Acceleration due to gravity on earth = 10 ms<sup>-2</sup>

**SECTION A**

*Answer all questions in this section.*

1. a) Molecules of air trapped in a balloon are said to undergo random zigzag motion.
  - i. What theory can help explain the random movement of the gas molecules? **(01 score)**  
.....  
.....
  - ii. Explain what would happen to the rate of motion of the molecules if the balloon is immersed in cold water. **(02 scores)**  
.....  
.....
- b) Why wouldn't you advise anyone to construct a pit latrine very close to the residential house. **(02 marks)**  
.....  
.....
2. How would advise a fellow Senior One learner to ensure safety in a laboratory? **(05 scores)**  
.....  
.....

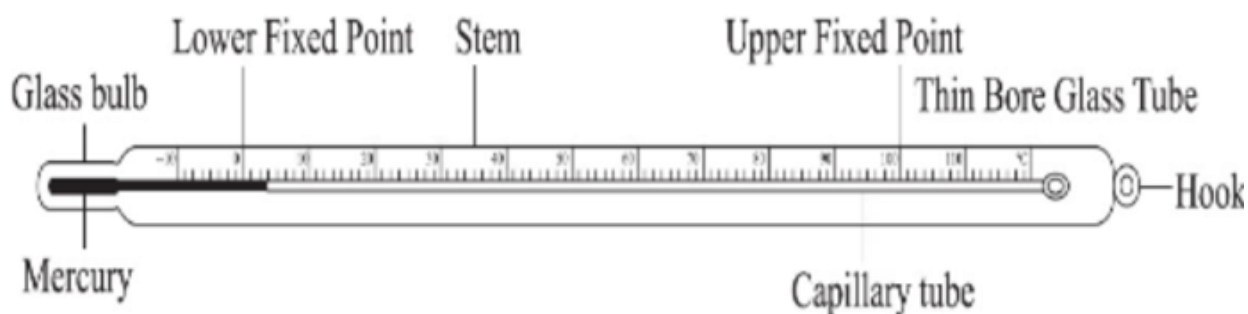
- .....
- .....
- .....
3. Brenda wanted to determine the density of an irregular shaped stone. He used a measuring cylinder filled with water up to the 50 ml mark. She then carefully dropped the stone and the water raised to 75ml mark as shown below.



- a) What general name is given to this method of determining volume? **(01 score)**
- .....
- b) What was the volume of the stone in  $\text{cm}^3$ ? **(02 scores)**
- .....
- .....
- .....
- .....
- .....
- c) Brenda later measured the mass of the stone using a beam balance and found it to be 68 g. **(02 scores)**

What is the density of the stone?

- .....
- .....
4. Below is a diagram of a mercury-in-glass thermometer used for measuring point temperature?



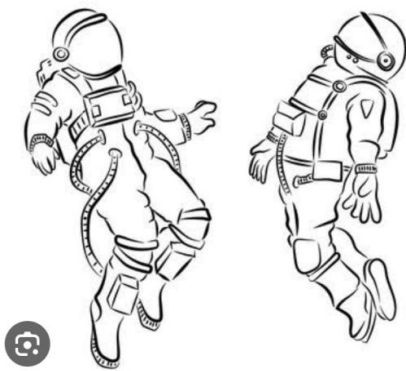
- a). What is meant by each of the terms;
- i. Lower fixed point. **(01 score)**

ii. Upper fixed point. (01 score)

ii. Upper fixed point. (01 score)

- b) Suggest any **three** reasons why mercury is preferred to water as a thermometric liquid. **(03 scores)**

5. (a) When astronauts visited the moon, they carried along oxygen containers for their breathing because the moon had a very thin atmosphere. They could not use pens to write while in space and they felt almost weightless (*could easily float in space*).



Using the variability in gravitational force, explain these observations. **(02 scores)**

- (b) The moon rover, a vehicle designed to explore the moon, weighed 2100N on earth.

- i. What was its mass? (02 scores)

i. What was its mass? (02 scores)

- ii. If the acceleration due to gravity on the moon  $1.67 \text{ ms}^{-2}$ . What is the weight of the moon rover on the moon's surface? **(01 score)**

ii. If the acceleration due to gravity on the moon  $1.67 \text{ ms}^{-2}$ . What is the weight of the moon rover on the moon's surface? **(01 score)**

6. Use the options to fill in the missing spaces in the following passage. Not all options must be used. **(05 scores)**

good	radiation	melting	low	conduction	poor
wooden heat	black	metallic	temperature	degrees	convection high

.....is the numeric measure of the hotness or coldness of an object or region. The absorption of ..... energy leads to an increase in the temperature of a body.

Heat moves from a region of ..... temperature to a region of ..... temperature.

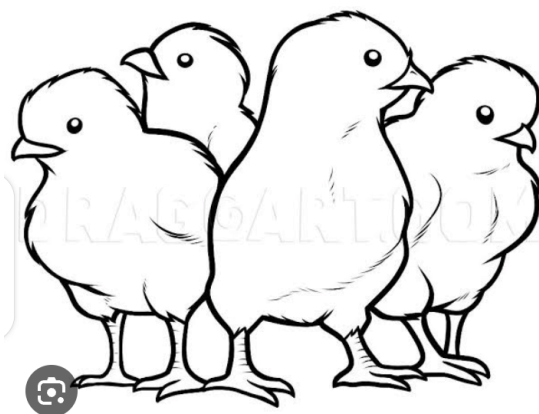
Heat is majorly transferred by means of ....., ..... and ..... in solids, liquids and gases respectively.

..... conductors of heat allow heat energy to pass through them easily while ..... conductors of heat do not allow heat to pass through them easily.

It is for this reason that handles of ladles are .....

### SECTION B (10 scores)

7. One-day-old chicks are vulnerable to extreme temperatures. Opio is rearing chicken on a commercial scale and he has bought 1000 one-day-old chicks.



- Suggest possible causes of extreme coldness and hotness in the house.
- Explain what Opio should do to regulate the temperature in the chicken house.

**END**