**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CLASS:\_\_\_\_\_\_\_\_\_ ADM. NO.\_\_\_\_\_\_\_\_**

**PHYSICS FORM ONE.**

**END OF TERM TWO EXAM - 2017.**

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

1. (a) Define force. (1 mark)

 (b) State at least three effects of force on an object. (3 marks)

 (c) Distinguish between cohesive and adhesive force. (2 marks)

 (d) What is viscous drag? (1 mark)

 (e) A steel needle carefully placed on the surface of water remains floating as long as the surface

 is not broken. Explain. (2 marks)

2. Consider the diagram below.

1. State the observations made after a short while.

 Funnel (2 marks)

 Soap

 bubble

1. Explain the observations stated above. (2 marks)

3. Explain the two factors affecting:-

1. Surface tension. (4 marks)
2. Differentiate between mass and weight. (5 marks)

4. Define each of the following terms giving examples to each case.

1. Scalar quantity (2 marks)
2. Vector quantity (2 marks)
3. Resultant vector (1 mark)

5. (a) Define pressure. (1 mark)

 (b) Show that fluid pressure (P$=hρg)$ is not dependent on the cross-sectional area of the

 container which holds the liquid by deriving it. (8 marks)

 (c) Using a well labeled diagram show that the pressure of a liquid increases with depth below its

 surface. (3 marks)

 (d) State Pascal’s Principle. (2 marks)

 (e) The air pressure at the base of a mountain is 75.0 cm of mercury while at the top it is 60.0

 cm of mercury. Given that the average density of mercury is 13,600 kg/m3. Calculate the

 height of the mountain. (6 marks)

6. (a) In a smoke cell experiment, it was observed that bright specks were in continuous random

 motion.

1. What are this specks (1 mark)
2. Why do they move? (2 marks)

 (b) How does temperature affect Brownian motion? (2 marks)

7. Consider the diagram below:-

 Brass

 contact

 iron

 bell

 Explain how the fire alarm operates. (6 marks)

 What are the advantages of mercury over alcohol as a thermometric liquid? (2 marks)

8. (a) State the Kinetic theory of matter. (2 marks)

 (b) The figure below represents arrangement of particles in the states of matter.

 E

 A B

 D C

 Solid Liquid Gas

1. Name the processes A, B, C, D, and E. (5 marks)

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Brass

 Iron

The figure above shows bimetallic strip. With the help of drawing show and explain the observation made on heating the bimetallic strip. (7 marks)