**ELERAI MCK GIRL SECONDARY SCHOOL**

**PHYSIC FORM ONE**

**MIDTERM CAT I TERM III 2014**

1. The figure below shows water placed in a measuring cylinder calibrated in cm3.

An object of mass 50.0g and 12.5g/cm3 is lowered gently into water. Indicate on the diagram (3mks)

1. Express the following in millimeter (6mks)
2. 2.7m
3. 26.9cm
4. 3.56 m
5. A) Define force and state its SI unit (2mk)

b) Name for types of force (4mks)

1. State two effects of a force (2mk)
2. Name one force that determines the shape of a liquid drop on a solid surface (1mk)

4. i) What is surface tension (2mk)

ii) State two factors that affect surface tension in liquids (2mk)

iii) Explain what happens to the soap bubble(2mks)

1. Two pieces of cotton wool were soaked, one with ammonia solution and the other with concentrated hydrochloric acid. They were placed at the end of glass tube as shown
2. Explain the observation made above (2mks)
3. On the diagram with an arrow indicate where white deposit would be formed if the temperature of end B is lowered and that of end A maintained as before. Give reason of why the white fumes is formed at the point you have indicated (2mk)
4. a) Define pressure and state its SI units (2mks)
5. A vertical U- tube holds two liquids L1 and L2 as shown in the figure below.
6. Mark in the u- tube the point where liquid Q is at the same pressure as P(1mk
7. Given that the density of P is 0.8g/cm3, what would be the pressure due to column of P at the point marked (3mks) (Take g=10N/Kg)
8. A metal cube of mass 68kg exerts a pressure of 1700 pa on a flat horizontal ground calculate:
9. The area in contact with the ground (3mks)
10. The dimension of the cube (2mk)
11. The density of the metal from which the cube is made (2mk)
12. a) State two advantages of thermal expansion (2mk)

b) Describe a method that you can use to open alight lid of a bottle without damaging it (2mk)

1. State two properties of a liquid that is suitable for use in thermometer (2mk)
2. How can the sensitivity and accuracy of a common thermometer be improved (2mk)
3. I) Convert each of the following from from kelvin to oC (6mk)
4. Ok
5. 167k
6. 283k

b)Express each of the following from oC to k (6mk)

i) -1200c

ii) 1300c

iii) 4000c

1. A) Distinguish heat and temperature (4mk)
2. State the mode of heat transfer (3mk)

c) Some water is poured into two identical test tubes one painted black and the other one polished. The apparatus were set up and left in the sun sometime

State which thermometer records a higher reading and give a reason for your answer (2mks)

1. The set –up below was used to demonstrate expansion in gases

State and explain what is observed when the flask is warmed (2mk)

1. Explain the following(8mk)
2. Flames go up
3. A person should crawl close to the floor in a smoke-filled room
4. Large mercury drops form oval balls on a glass slide
5. Trucks which carry heavy loads have many wheels.
6. A lamp of height 6cm stands infront of a pinhole camera at a distance 24cm. The camera screen is 8cm from the pinhole. what is the height of the image on the screen (3mk)
7. What are the effects of the following on the size of the image formed on the screen of pinhole camera (1mk)
8. Increasing the distance of the object from the pinhole camera (1mk)
9. Elongating the camera by moving the screen farther away from the pinhole (1mk)