NAME ----------------------------------------------------- CLASS --------------ADM NO. ----------------------------------------

GATITU MIXED SECONDARY SCHOOL

PHYSIC PP1 FORM 3 2013 END TERM

SECTION A (25 MKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION

1. Draw a diagram of venier caliper showing a reading of 12.48cm. 2mks
2. The diagram below shows two bodies hanging from the 30cm mark and the 80cm mark of a uniform meter rule pivoted at its center. One of the bodies of mass 1.5 kg is immersed in a fluid.

If the system is in equilibrium, calculate the up thrust of the liquid. 3mks



1. A rectangular plate measures 3.0 m by 1.0m and is standing on its smallest side, calculate the smallest angle through which if tilted it will topple. 2mks
2. Two students A and B who are equally strong push on the pistons of two syringes as shoState with reason which student will succeed in pushing his piston inwards. 3mks
3. A graduated thermometer reads 8 cm in melting ice and 20 cm in steam at 100c. what is the temperature when the thermometer reads 6 cm? 3mks
4. The figure below shows a test tube containing water ,an ice block is held at point B using a wire gauze as water heated at point A.



State with a reason what happens to ice at B as the water boils at A. 2mks

1. A thin sheet of aluminium floats in water as hsown below, if a small piece of camphor is attached on one side of it, the plate moves in direction shown.



Explain why the sheet moves that way 2mks

1. A boy throws a ball up in the air and it comes back to his hands at the same level. Sketch a velocity time graph to show the motion of the ball. 1mks
2. A boy walks away from a plane mirror at a speed of 2m/s. with what speed does his image move away from him? 2mks
3. In an experiment to determine the thickness of a molecule,the following results were obtained
4. An air bubble was released at a depth of 45 m from a sea bed. The initial volume of the bubble at this depth was 3.0 ×10-5m3 and the temperature of the water was 13c. what was its volume on reaching the surface of the water where the temperature was 23c. (atmospheric pressure =101Kpa, density of water =1020kg/m3) 4mks
5. The figure below shows a pulley system used to raise the load L below it. Complete the diagram to show how it works.



1. State the velocity ratio of the system.
2. A stone of mass 10kg is to be raised 10 metres from the from the ground using this pulley
3. The work done in raising the stone. 3mks
4. Each pulley above weigh 20N, calculate the total work done in raising the load through this height. 2mks
5. The efficiency of this system of pulleys. 2mks
6. Give two reasons why the efficiency of such a pulley cannot be 100%. 2mks
7. Define density and state its S.I units. 2mks
8. The figure below shows the set up to determine the density of a liquid.
9. THe rod was submerged into the liquid to various lenghths L and corresponding readings of the spring balance F recorded. The metal rod has a uniform cross sectional area 5.0× 10 m2.The table below shows the result obtained





1. The figure below shows an instrument for measuring atmospheric pressure



1. Name the instrument . 1mk
2. State two properties of the barometric liquid that make it suitable for use in the instrument. 2mks
3. What is the effect of the following on the height of the liquid column
4. Using a tube of a larger diameter 1mk
5. Making a small hole at the topmost part of the uniform tube. 1mk
6. State pascal’s principle of transmission of pressure. 1mk
7. The figure below shows a simple hydraulic machine with an effort E, Load F



1. Using the principle of levers,write down an expression connecting F,X,E and Y. 2mks
2. Given that X =28 cm Y =7cm, effort =80n and that the area of a ram piston is four times that of the pump piston, determine the maximum load that can be lifted. 4mks
3. Which of the following is more harmful to a figure? Steam or boiling water. Explain your answer. 2mks
4. The figure below shows 50kg of molten being cooled , explain briefly what is happening to the liquid as its temperature reaches 1,000c. (not drawn to scale) 2mks
5. The specific heat capacity of the molten metal is 800Jkg-1k-1 determine the amount of heat lost as it cools from point A and B. 3mks
6. What is the power of the heater that will give out this amount of heat in the same time?
7. State two factors that affect both the m.p and the B.p of a substance. 2mks
8. Two ice cubes when pressed against each other are found to stick to each other. Explain 2mks