**DECEMBER HOLIDAY ASSIGNMENT**

**FORM ONE PHYSICS**

1. Two samples of bromine vapor are allowed to diffuse separately under different conditions, one in a vacuum and the other in air. State with reasons the conditions in which bromine will diffuse faster (2mks
2. In terms of kinetic theory of matter, explain why evaporation causes cooling (2mks)
3. (a) In an experiment to demonstrate Brownian motion, smoke was placed in air cell and observed under a microscope. Smoke particles were observed to move randomly in the cell.
4. Explain the observation
5. Give a reason for using small particles such as those of smoke in this experiment (1mk)
6. What would be the most likely observation if the temperature in the smoke cell was raised?
7. Give a reason why gases are more compressible than liquids (2mks)
8. Figure 1 shows a beam balance made out of concrete and reinforced with steel

Concrete

Steel

 Use a diagram to explain the behavior of the shape of the beam when heated up (2mks)

1. (a) Sate **two** liquids which are used in thermometer (2mks)

 (b) With a reason, state which of the two liquids in 3 (a) above is used to measure temperature in areas where temperatures are:

 (i) Below -400c (ii) 1500c

1. Name **two** adaptations that can be made to a mercury thermometer to make it more sensitive (2mks)
2. Convert the following
3. 1000000m into km
4. 0.0000037kg to mg 2mks
5. A block of glass of mass 187.5g is 5.0 cm long, 2.0 cm thick and 7.5cm high. Calculate the density of the glass in kg/m3. 3mks
6. The mass of an object is 50kg. if its weight is 1000N in a certain planet, calculate the gravitational field strength of the planet.
7. A spring stretches by 6cm when supporting a load of 15 N.
8. By how much would it stretch when supporting a load of 5kg? 2mks
9. What load would make the spring extend by 25mm. 2mks
10. How much force must be applied on a blade of length 4 cm and thickness 0.1mm to exert a pressure of 5000, 000pa? 3mks
11. State the kinetic theory of matter. 2mks
12. State 3 factors that affect thermal conductivity.
13. A manometer containing water shows a difference in level of 10cm when connected to a laboratory gas. Calculate the pressure exerted by the gas supply

 (*Atmospheric pressure = 100,000N/m2*)(4mks)

1. Give a reason why water tanks in houses are placed as high as possible(2mk)
2. a) Define force and give its S.I units

 (b) State **two** effects of force on an object (2mks)

 (c) Name and show forces acting on a box placed on a table (2mks)

 (d) Give two differences between mass and weight. (2mks)

1. a) Define density and state its S.I units.(2mks)

(b) A density bottle weighs 80g when empty, 130g when full of oil and 150g when full of water. If the density of water is 1g/cm3, calculate the density of oil.(3mks)

(c) Water of volume 2m3 and density 1g/cm3 is mixed with milk of volume 1m3 and density 1.4g/cm3. Calculate the density of the resulting mixture.(4mks)

(d) A glass slide of a density 2.5g/cm3 measure 20cm x 10cm x 50cm what is a minimum pressure it execute on a flat surface(3mks)