ASUMBI GIRLS HIGH SCHOOL

PRE-MOCK 2

JUNE

2022

**PHYSICS**

**PAPER 1**

**MARKING SCHEME**

1. Diameter of wire = 1.33

Radius of wire 1.33÷2🗸1=0.67cm🗸1

1. To increase the time take to come to a stop which reduces the rate of change of momentum or reducing the impulsive force producing a small reaction on him by floor🗸1
2. Clean water has a high surface tension addition of detergent reduces/breaks/lowers the surface tension 🗸1
3. Upthrust = weight + Tension

🗸1

🗸1

T =1240N 🗸1

1. A1V1=A2V2🗸1

π=πx20x🗸1

V2=🗸1

1. Pressure is developed at the point of application of the force. 🗸1Since the liquid is incompressible, pressure is uniformly transmitted and force is generated.🗸1
2. Hydraulic machines (brakes, press,lift)🗸1
3. F=

🗸1

V=4.00m/s🗸1

1. e=4.25-4.00=0.25m

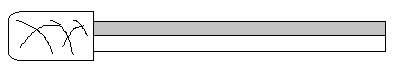
F=Ke

75=0.25k🗸1

K=300N/m🗸1

1. The level of water in the tube first drops and then rises. 🗸1Due to expansion of the glass boiling tube.🗸1
2. The c.o.g is raised when the carrier is at the top lowering the stability.🗸1
3. Copper a good conductor of heat conducts the heat away hence paper does not char/burn.🗸1
4. Wx5=4x20√

W=√



√1

1. The temperature at which the volume/ pressure/K.E of a gas is **assumed** to be zero.🗸1
2. Reducing the volume increases the number of collisions of gas particles with the walls of the container per unit time.🗸1Therefore the rate of change of momentum will also increase leading an increase in pressure.🗸1
3. I -Serves as a pointer to the volume on scale or

- To trap the gas in the tube or

-A drying agent for the gas🗸1

II -To make the temperature of the bath uniform.🗸1

1. Heat the bath and record the temperature and height/volume of air trapped at suitable temperature interval.🗸1 Plot a graph of volume/height against temperature.🗸1 The graph is a straight line indicating proportional change in volume and temperature. 🗸1
2. See sketch on grid.

**T**

Volume (cm3)

Temperature (0C)

* Correct position of T and dotted line
* Correct continuous line

1. P1V1=P2V2

🗸1

X=🗸1

1. Introduce the oil drop on the water surface. The surface tension of water reduces and the net force🗸1 of the surrounding water pulls oil molecules outwards hence spreading.🗸1
2. Ah=volume🗸1

2

ππ🗸1

h=🗸1

1. Oil patch is a perfect circle, a monolayer🗸1

Oil drop is perfect sphere🗸1

1. To make boundary of oil patch visible or

To reduce surface tension of water🗸1

1. Trapping oil in a loop of wire and holding it against a mm scale.🗸1View the oil drop under a magnifying lens (glass) to enable correct measurement of diameter.🗸1 or

Run known number of drops of oil from a burette, obtain the volume of one drop (volume run out/number of drops). 🗸1

Then use the formula  to obtain the radius hence the diameter. 🗸1

u =

1. v
2. a
3. i) h🗸1

45= 🗸1 or u=

T=3sec 🗸1 = 30m/s🗸1

V = u-gt🗸1

O = 30-10t, 🗸1t=3sec🗸1

1. T =2t s = vt

=2(3) = 50x6√1

=6sec🗸1 = 300m√1

1. a )
2. V.R🗸1

=

But sinθ=

V.R=🗸1

1. η=🗸1

65= x 100 √1

65=

MA=1.3🗸1

1. Energy is lost in overcoming frictional force on the inclined surface/plane🗸1
2. V.R=4
3. M.A increases as the load increases
4. P.E K.E heat+sound
5. a)

This is the quantity of heat required to raise the temperature of unit mass of substance by one kelvin or one degree Celsius.🗸1

1. Some of the heat is used to warm the insulating cover and surrounding area.🗸1
2. The heater was still hot (at a higher temperature than the block) continues heating before cooling.🗸1
3. Power supplied= IV=10x22=220W🗸1 OR

Slope= **Pt=VIt =McΔθ 🗸1**

Pt=McΔθ **22 x 10 x 180 = 2x c x 22** 🗸1

M=2kg

C= **c = 900J/kgK** 🗸1

1. Heat lost to the surrounding,🗸1 heat used to warm up the insulating cover and thermometer🗸1 or heat is lost to warm insulating cover and thermometer.🗸🗸

1000

500

00

2400

X0

400

= √1

= √1

= 1400√1