MARKING SCHEME PAPER ONE PHYSICS

1. =(1000 x 0.5) (0.10 x 2)

= 500 + 0.2

= 500.2 mm

1. pressure at P= pressure at Q

= 0.16 X 1000X10

=1600 PASCALS

1. h= 5 x 10-8 x 0.1 (1mk)

= 5 x 10-9m

1. i)The patch is circular

ii)The patch is monolayer

1. When temperatures are high the pipe expands and loop curve move. When temperatures drop the pipe contracts and stretch up the loop preventing breaths. (1mk)
2. 5. The wire gauze is a good conductor . It conducted the heat but after sometime the ignition point was reached.
3. M.S = 11.5

S.S = 0.32

 11.82 mm

Error 0.14

Actual diameter = 11.68 mm

1. a) The moment of force would be very small because it depends on the perpendicular distance from the pivot.

Clockwise moments = 0.9 x 0.1 + 0.2 x0.3

= 0.09 + 0.06

=0.15Nm

Anticlockwise moments = 0.72 x 0.2 = 0.142NM

Rule tilts inside of 20g mass since clockwise moments are greater than anticlockwise moments.

1. Number of curve

Diameters of the turn

1. The velocity of air inside is high hence lowers the pressure inside. The greater pressure outside makes the paper to collapse.
2. Y= 1cm = 100cm/s

 0.01sec

V= 0.5cm = 50cm/s

* 1. sec

a = v – u

 t

= (50 – 100)

10 x 0.01

= -50cm/s

0.15

=-500cm/s2

= -5ms-2

1. F= ke

K=f=3 x 1000

0.06 x 1000

=3000

 6

= 500 N/M

Work done = 1/2ke2

 = ½ x 500 x (0.04)2

= 0.4J

1. a) Temperature of the gas

Mass of the gas

b i) 4.0 x 10 m

1. -275o c to -2850 c
2. They are at rest/they have zero K.E
3. Before reaching this temperature the gas

–liquifies

-solidifies

c) V1 = V2 = 300cm3 volume is constant P1V1 = P2V2

 T1 T2

9.5 X 104 X 300 = P2 X 300

 298 283

p2 = 9.022X 104pa

1. a) Time

Mass of water collected

b) Power = MLf

 Time

c)) energy lost is not accounted for eg energy absorbed by heater, container and variation

d) liquid boiling at constant temperature

14.

b) h=1/2gf2

S=1/2x10xt

t = 1

ii) t =1

V=30

Range = 30 x 1

=30m

V = U + 2ag

V=2 x 10 x s

V=10

15 a)



b) n=MA x 100

 V.R

m.a = 80 x 5

 100

MA = 4

II) M.A. = load

 Effort

4= 2800

 E

e= 700N

c) –Heat loss due to friction

Weight of lower block

16. a) A body displaces its own weight in the fluid in which it floats (1mk)

b)ii) Volume of displaced water = 3 x 2 x 0.6= 3.6m3

Mass of displaced water = 3.6 x 1030 = 3708kg

Weight = mg = 3708 x 10 = 37080N

ii) upward force exerted on the body by the water = mg

= 3708 x 10

=37080 N

iii) Tension in the wire = 37080 – 100 = 36980 N

17.

velocity

 time

b) Body accelerates uniformly from rest as it falls

i) momentum = MV

= 0.5 x 10

5kgms-1

ii) M1V1 = m2v2

s= 2v2

v2 = 2.5ms-1

iii) P.E =K.E

mgh = 1/2mv2

2x 10xh = ½ 2 x 6.25

h=0.3125m.