**MARKING SCHEME PHYSICS PAPER 232/1**

**ARISE AND SHINE TRIAL EXAM**

**AUGUST/SEPTEMBER - 2022**

**SECTION A**

1. + 0.01mm✔
2. P = ₰gh✔

= 1.25 x 10 x 2500

= 31250

31250 = 13600 x 10 x h✔

h =

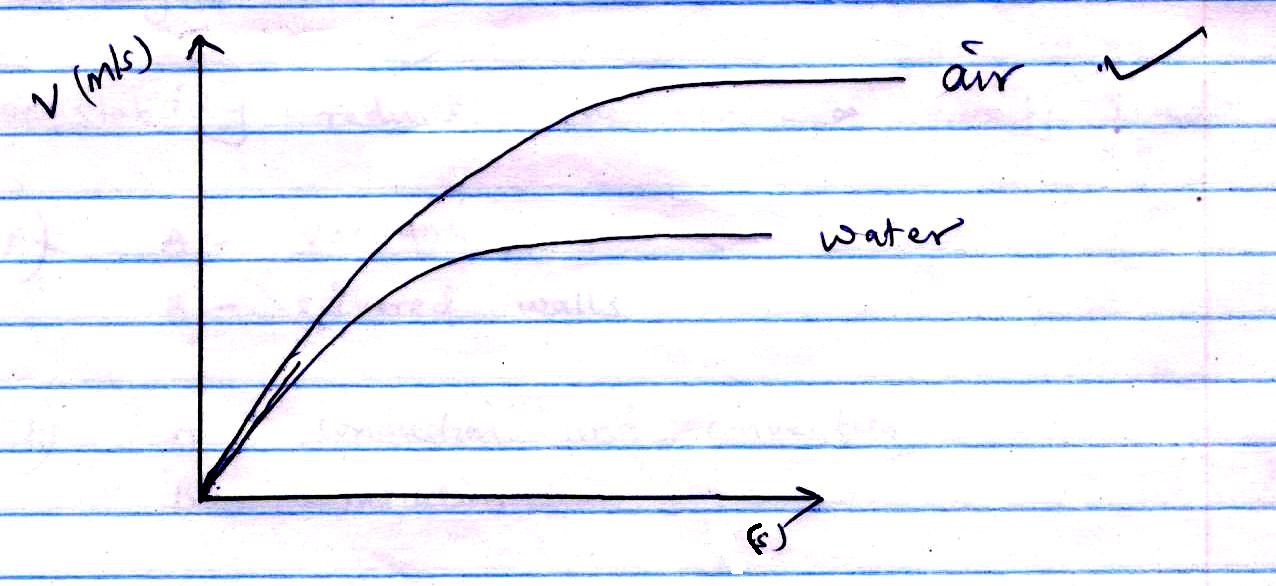
h = 0.229779m

= 229.779mm✔

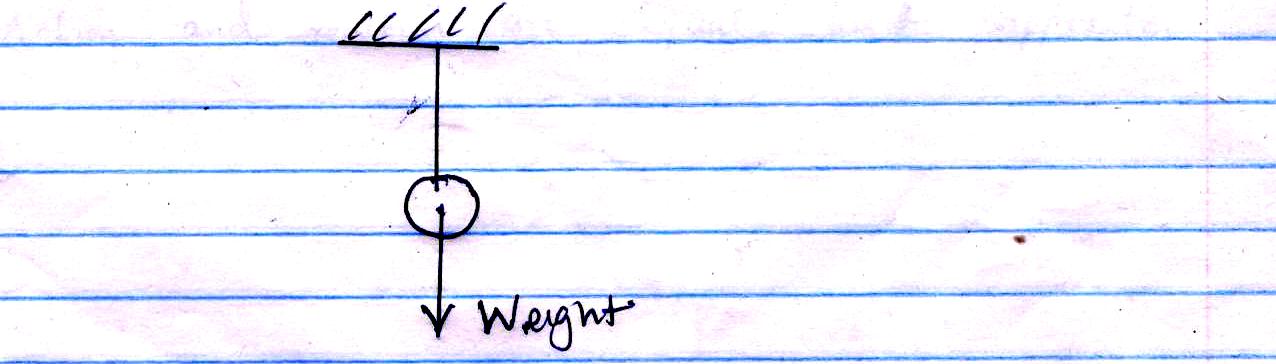
Barometric height = 760 – 229.779

= 530.221mmHg✔

1. ✔



1. ✔



1. ✔ (a) Vacuum/freefall

(b) v2 = u2 + 2gs ✔

V2 = O + 2 x 10 x 20

V2 = 400

V = 20 m/s✔

1. ✔The angle subtended at the centre of a circular path by an arc length equal to the radius of the path.
2. ✔No constriction,✔ the thermometric✔ liquid flows back while taking reading.
3. ✔The glass block is fully submerged, no further increase✔ in upthrust /maximum upthrust attained.
4. ✔Thermodynamics.
5. ✔Stability reduces,✔ the centre of gravity rises. ✔
6. ✔ (a) A – vacuum

B – silvered walls

(b) A – conduction and convection

B - radiation

1. ✔ (a) Action and reaction are equal but opposite

✔ (b) v2 = u2 + 2as

O = 202 + 2a x 15

O = 400 + 30a

a =

a = -13.33ms-2

F = m a ✔

= 900 x -13.33

= 12000N

**SECTION B**

1. ✔ (a) i) P.E = Mgh

= 20x10x0.9 ✔

= 180J ✔

✔ii) ½mv2 = E

½ x 20v2 = 180 ✔

V2 = 18

V = 4.243 m/s

(b) i) w = mgh ✔

= 2000 x 10 x 3

= 60000 J ✔

✔ii) p =

= ✔

10000w or 10kw✔

✔iii) ŋ = x 100% ✔

= x 100% ✔

= 80% ✔

1. ✔ (a) Tension reduces, ✔ upthrust increases ✔

(b) i) w = mg

= 0.5 x 10

= 5N ✔

ii) U = ₰Ug ✔

= 8.0 x 104 x 1000 x 10 ✔

= 8N ✔

iii) T = U – w

= 8 – 5 ✔

= 3 N ✔

(c) ✔ R.d =

✔

= 0.5

ℓ liquid = 0.5 x 1gcm-3

= 0.5gcm-3

1. ✔ (a) Quantity of heat required to change or raise the temperature of any given mass of a substance by 10C or 1K.

(b) (i) Q = MCΔɵ ✔

= 0.215 x 400 x 9 ✔

= 774J ✔

(ii) Q = MCΔɵ ✔

= 0.1 x 4200 x 9 ✔

= 3780J ✔

(iii) ✔Heat lost by metal block = Heat gained by water + calorimeter

MCΔɵ = MCΔɵ + MCΔɵ ✔

15 x C(100 – 34) = 774 + 3780 ✔

9.9C = 4554

C = 460Jkg-1k-1

✔ (c) pt = MCΔɵ

5 x 8 x 60 = 0.5 x 460Δɵ

Δɵ =

= 10.430

1. ✔ (a) Constant change in velocity✔

(b) I

1. F = 1 ✔

=

= 960N ✔

1. = ✔

= ✔✔

V2 =

= 96m/s ✔

✔ II (i) B

(ii) It requires greater centripetal force to maintain because of a longer radius.

1. ✔ (a) (i) They are being bombarded by invisible air particle which are in constant random motion.

(ii)

1. To maintain temperature
2. P1V1 = P2V2 ✔

2 x 10-5 x 80 = P2 x 25 ✔

P2 = 6.4 x 105Nm-2 ✔

(b) A gas that obeys gas laws perfectly.

(c) (I) K = slope

K =

=

= 0.0823NmoJ ✔

(II) Energy / work done