PHYSICS FORM TWO ZANZIBAR 2015.

Solutions from: Maktaba by TETEA

by Yohana Lozaro

1.

i	ii	iii	iv	v	vi	vii	viii	ix	x
A	B	A	C	D	D	D	B	D	B

2.

i	ii	iii	iv	v	vi	vii	viii	ix	X
K	M	C		B	E	H	A	J	I

3.(i)Opposite directins

(ii)Surface tension

(iii)distance.

(iv)Tidal energy

(v)A simple machine

(vi)straight

(vii)Neutral point

(viii)Pascals principle

(ix)Air resistance.

(x)gold leaf electroscope.

4. (a)Pascals princple states that, “when pressure is applied to an enclosed fluid, it will be distributed equally throughout the liquid”

(b)Hammer has large area hence low pressure which will not make the baloon to burst, but a pin has small area that make its pressure to be large hence make easy for it to make the ballon to burst.

(c)(i)Pressure = force/area = 600/5 = 120 N/m^2

(ii)Apply pascals principle,

600/5 = P/20

The pressure exerted will be 2400 N/m^2

5. (a)Archimedes principle states that

When the body is partially or totally immersed in the fluid it experience an upthrust which is equal to total weight of the body"

(b)Ship has large hollow area which increases its volume making it to have low density than water hence floats compered to coin that has no hollow area.

(c) (i)RD = (60 – 40)/(40) = 0.5

(ii)Density = 0.5 x 1000 kg/m^3

= 500 kg/m^2

6. (a)(i)Load is anything that is supported by the machine while effort is the force used to support load on the machine.

(ii)Mechanical advantage is the ratio between the load and effort, while velocity ratio is the ratio between effort moved by effort and distance moved by load.

(b)Because some effort is used to overcome friction

(c)(i)VR = effort distance/load distance

5 = effort distance/0.5

Effort distance = 2.5 m

Effort = 600/2.5 = 240 N

Then, MA = load/ effort

MA = (400)/240

= 1.7

(ii)Efficiency = VR/MA x 100%

= 5/1.7 x 100% = 30%

7. (a)Newtons second law of motion state that "the rate of changing momentum of the body is directly proportional to the applied force "

(b)Elastic collision has both momentum and kinetic energy conserved while inelastic collision has only momentum conserved.

(c)Apply conservation of linear momentum,

(1.5 x 6) + (2 x 0) = (1.5 + 2) x 3

(i)momentum of A before collision = 1.5 x 6 = 9 kg m/s

(ii)After ollision, momentum of A = 1.5 x 3 = 4.5 kg m/s

(iii)KE of A = ½ x 1.5 x 3^2 = 6.75 J

KE of B = ½ x 2 x 3^2 = 9J

8. (a)(i)Work is the product of force and its moved distance.

(ii)Power is the rate of doing work

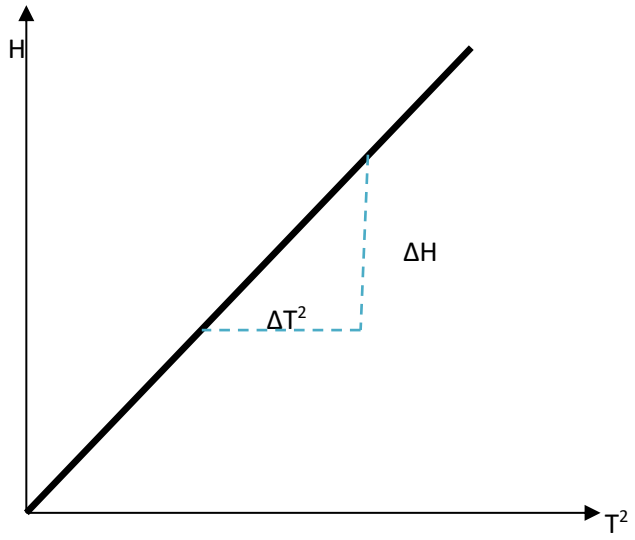
(b)Due to frictional force between the wheel and the load

(c)KE = ½ x 1000 x 15^2 = 112500 J

9.

$T^2(S^2)$	5.76	8.237	11.482	13.469	15.920	18.749

(ii)GRAPH OF H against T^2

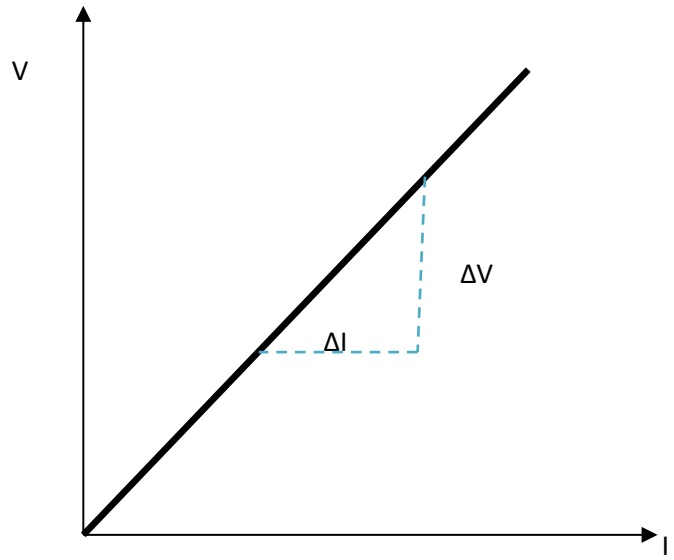


((ii)Slope = 0.049

(iii) compere slope with the given equation,

$0.049 = g/200$, $g = 9.8\ m/s^2$

(b)



The law is ohms law.

10.Earth's magnetic field deflects most of the solar wind, whose charged particles would otherwise strip away the ozone layer that protects the Earth from harmful ultraviolet radiation.

11.(a)importances of Physics

- Helps to know much about energy
- Helps us to take some carriers like engineering
- Helps us to study different motions of bodies
- Helps us to know different simple machines

(b)Areas where physics is applied

- In agriculture, due to use of machines
- In industries
- In hospitals
- In schools