PHYSICS FORM TWO NECTA 2020.

Solutions from: Maktaba by TETEA

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

xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
B	D	C	A	C	D	C	C	C	D

2.

i	ii	iii	iv	v
F	D	G	A	B

3.(i)

 (ii)Friction

 (iii)10 kg m/s

 (iv)umbra

 (v)Meniscus

4. (a) second equation, $s = ut + \frac{1}{2} at^2$

Third equation, $v^2 = u^2 + 2as$

 (b)(i)Velocity is the rate of change of displacement

 (ii)Reterdation is the negative acceleration occurs on the moving body when is going to rest.

 (c)(i) $v = u + at$

 $0 = 50 - 10 \times t$

 Time is 5 seconds

 (ii)$S = ut + \frac{1}{2} at^2$

 $H = 50 \times 5 - \frac{1}{2} \times 10 \times 5^2$

Maximum height is 125 m

5. (a)Restoring energy

(b)Because there is no distance moved by the carrying force.

(c)Before rebound, PE = 0.2 x 20 x 10 = 40J

PE on rebound = 30J then,

30 = 0.2 x 10 x h

Height required is 15 m

6. (a)Thin piece of wire has small surface area which make it to have greater pressure that make it to cut easily than the thick wire.

(b)Applications of atmospheric pressure;-

- manometer

-U- tube

-car carburettors

-barometer

(c)Total area = 50 x 4 = 200 cm^2

Pressure = force/area

= (8000 x 10)/200

= 400 N/cm^2

7. (a)Centre of gravity is the point at which the effect of graviy is considered to act, centre of mass is the point at which all the weight of the body is concentrated.

(b)In order to give the balance of the body.

(c)Moment = force x pernd. Distanc

320 = 120 x distance

Length of te spanner is 2.5 m

8. (a)Newtons second law of motion states that, "the rate of changing momentum of the body is directly proportional to the applied force, taking place in the direction of that force"

(b)(i)Firing bullet on the gun

(ii)walking

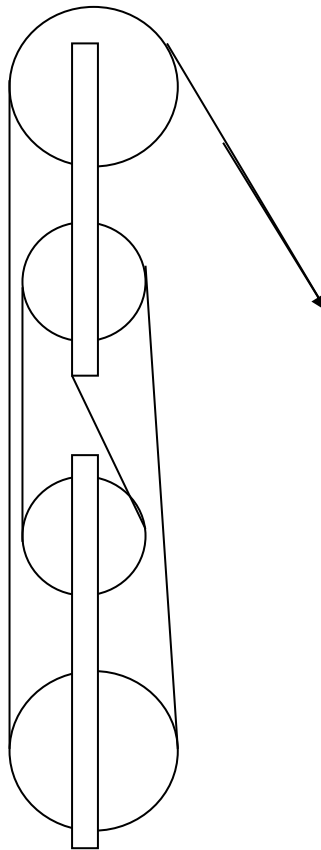(c)Apply principle of conservation of linear momentum,

Let common velocity be V

Then,(100 x 5) – (500 x 1) = (100 + 500)v

Common velocity is 0 m/s

(ii)Inelastic collision

9. (a)The angle of inclination reduces the force required to raise the load. This makes it easy to move the load from lower to upper position.
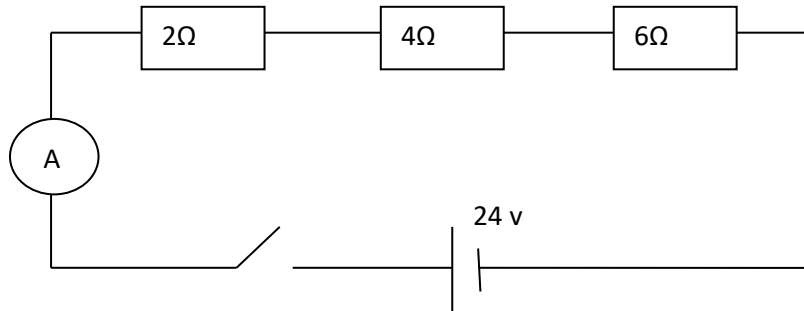
(b)

(c)(i)Efficiency = VR/MA

0.8 = 8/MA, MA = 0.1

Mechanical advantage is 0.1

(ii) But, MA = load/effort

0.1 = load/200

    Maximum load is 20 N

10. (a)

2Ω   4Ω   6Ω

A

24 v

(b)total resistance = 2 + 4 + 6 = 12Ω

Current = V/R

    = 24 /12 = 2A

(c)**NOTE THAT, IN SERIES THE CURRENT IS THE SAME TO ALL RESISTORS, BUT THE P.D DIFFERS TO EACH RESISTOR.**

P.d across the 2 Ω is given as

    2A X 2 Ω = 4V

- P.d across 4 Ω = 2A x 4 Ω = 8 V
- P.d across 6 Ω = 2A x 6 Ω = 12 V