PHYSICS FORM TWO NECTA 2002.

Solutions from: Maktaba by TETEA

by Yohana Lozaro

1	2	3	4	5	6	7	8	9	10
C	A	D	D	C	A	B	B	D	A

11	12	13	14	15	16	17	18	19	20
B	B	A	B	A	B	C	C	C	B

21.

i	ii	iii	iv	v	vi	vii	viii
d	h	e	m	g	j	a	n

22.-to measure external diameter of small wires

(b)(i)upthrust

(ii)horizontal force

(c) MA = 120/30 = 4

(d)(i)floating of ships

(ii)hydrometer

23(a).fur,

(b)(i)heated

(ii)hammered

(iii)droped down every time

(c) voltage = 1/ 1.5 x 3 = 0.5 V

Resistance = 1 x 3 = 3Ω

24.(a) 38000 J = 20 x C x (80 – 30)

Specific heat capacity is 38 J/kg K

(b)(i)solids

(ii)gases

(iii)expands

(iv)contracts

25.(i)effort,friction

(ii)depth,density

(iii)speed

(iv) $10/h_i = 25/10$

Height of image is 4 cm

26.(a)Law of flotation states that "a floating body displaces its own weight of fluid on which it floats"

(b) r.d = (60 – 20)/(70 – 20)

(i) relative density = 0.8

(ii) density = RD x density of water

= 0.8 x 1 g/cm^3

Its density = 0.8 g/cm^3

(c)(i)Archimedes principle states that "when the body is partially or totally immersed in the fluid, it experiences an upthrust which is equal to the weight immersed"

(ii) upthrust = 500 – 340

= 160 N

27.(a)Boyles law states that, the volume of given mass of gas is inversely proportional to pressure at constant absolute temperature"

(b)(i)Let pressure be P

Apply boyles law,

Pv = constant, then,

0.12 x 400 = (400 – 80) x P

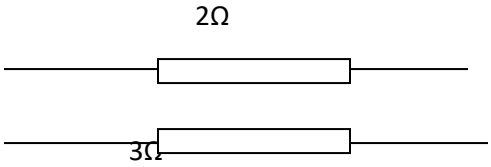
The pressure is 0.15 N/m^2

(ii)Again, apply boyles law,

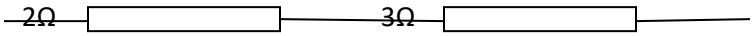
0.12 x 400 = (400 + 50) x P

The pressure will be 0.107 N/m^2

28. (a)(i)Parallel connection

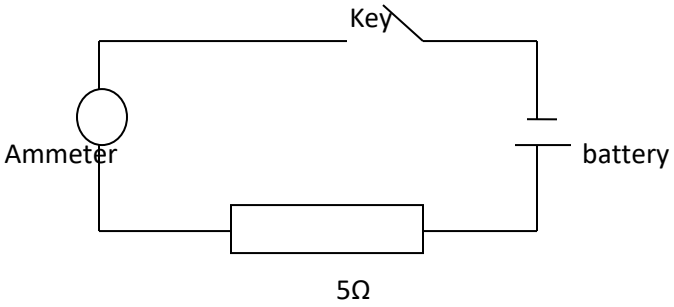


(ii)series connection



(b)

(i)



(ii) Current = 0.8A

Resistance = 5Ω

Voltage = current x resistance

= 0.8 x 5

Voltage reading = 4V

(c) For parallel connection,

1/R = 1/R1 + 1/R2

$= \frac{= R1 + R2}{R1R2}$

Then, R = $\frac{R1R2}{R1+R2}$

29.(a)Free fall motion is the motion of the falling body which is under the force of gravity.

(b)(i)From,

V=u + at

= 0 + 10 x 3.5

Velocity to stike the sand beach is 35 m/s

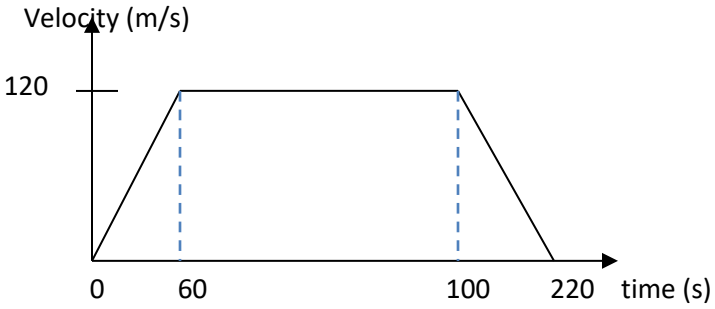
(ii)From,

S = ut + ½ at^2

H = 0 x 3.5 + ½ x 10 x 3.5^2

Maximum height is 61.25 m

(c)



(i)Distance = area of the graph

= ½ x60 x 120 + 40 x 120 + ½ x120 x 120

Distance = 15600 m

(ii) total yime taken is 220 seconds