

PHYSICS FORM TWO NECTA 2002.

Solutions from: dadisi.co.tz 

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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)dropped down every time

(c) voltage = $1/1.5 \times 3 = 0.5 \text{ V}$

Resistance = $1 \times 3 = 3\Omega$

24.(a) $38000 \text{ J} = 20 \times C \times (80 - 30)$

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

$$= 0.8 \times 1 \text{ g/cm}^3$$

$$\text{Its density} = 0.8 \text{ g/cm}^3$$

(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 = $500 - 340$

$$= 160 \text{ N}$$

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,

$$Pv = \text{constant, then,}$$

$$0.12 \times 400 = (400 - 80) \times P$$

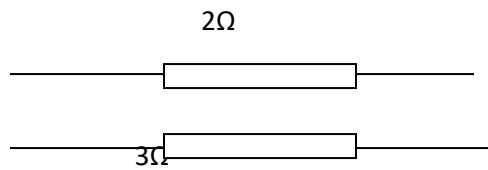
The pressure is 0.15 N/m^2

(ii)Again, apply boyles law,

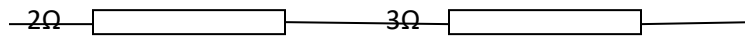
$$0.12 \times 400 = (400 + 50) \times P$$

The pressure will be 0.107 N/m^2

28. (a)(i) Parallel connection

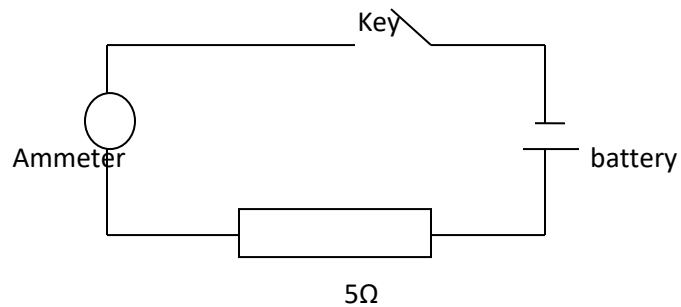


(ii) series connection



(b)

(i)



(ii) Current = 0.8 A

Resistance = 5Ω

Voltage = current $\times$ resistance

$$= 0.8 \times 5$$

Voltage reading = 4 V

(c) For parallel connection,

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$= \frac{R_1 + R_2}{R_1 R_2}$$



Then, $R = \frac{R_1 R_2}{R_1 + R_2}$

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

(b)(i) From,

$$V = u + at$$

$$= 0 + 10 \times 3.5$$

Velocity to strike the sand beach is 35 m/s

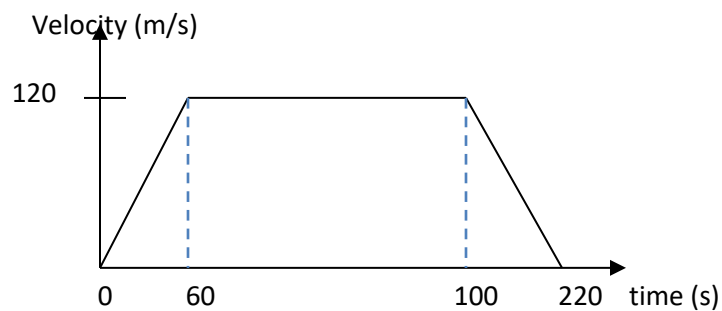
(ii) From,

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

$$H = 0 \times 3.5 + \frac{1}{2} \times 10 \times 3.5^2$$

Maximum height is 61.25 m

(c)



(i) Distance = area of the graph

$$= \frac{1}{2} \times 60 \times 120 + 40 \times 120 + \frac{1}{2} \times 120 \times 120$$

$$\text{Distance} = 15600 \text{ m}$$

(ii) total yime taken is 220 seconds