PHYSICS FORM TWO NECTA 2003.

Solutions from: Maktaba by TETEA

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1.

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

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

2.

i	ii	iii	iv	v	vi	vii	viii
E	N	O	D	M	K	L	A

3.(a)(i)to detect prescence of charge

(ii) used to determine type of charge.

(b)(i)passage of water in the xylem of plants

(ii)the barometer

(c)(i)conduction

(ii)convection

(iii)radiation

(d) 6 images

4. (a)(i)potential energy

(ii) kinetic energy

(b)(i)Workdone = effort x distance

VR = load/effort, effort = load/VR

= 1200/5 = 240 N.

Then workdone = 240 x 15

Work done by effort = 3600 J

(ii) efficiency = 0.33/5 x 100

Efficiency is 67%

(iii) effort = 6000 /15 = 120 N

5. (a)the fundamental law of electrostatic charges states that like charges repel, unlike charges attract.

(b)conductors, insulators

(c)potential difference and electromotive force

6. (a)speed = 480/6

= 80 m/s

(b)(i)expansion

(ii)cracking

(iii)melting

(c) power = 800 x 3/60seconds.

Power = 40 W

7. (a)Real weight is the weight of the body while apparent weight is the weight of the body when immersed in the fluid.

(b)(i)Upthrust = 64 – 48

= 16N

(ii)volume of solid = mass/density

= (16/10)/800

Volume = 2 cm^3

(iii) density = mass / volume

= (16/10)kg / 0.002 m^3

Density is 800 cm^3

8. (a) second law “the rate of changing momentum of the body is directly proportional to the applied force,moving to the direction of that force”

-third law “actions and reactions are equal and opposite”

(b)(i)velocity in 8^{th} second

V = u + at

= 0 + 5 x 8

= 40 m/s

(ii) momentum = mass x velocity

V = 0 + 5 x 5 = 25 m/s

Then, momentum = 90 x 25 =2250 kg m/s

(iii) force, F = ma

= 90 x 5

= 450 N

9. (a)(i)Heat is the form of energy that transfers from one point to another due to temperature difference between the points, while temperature is the measure of degree of hotness or coldness of the body.

(ii)Specific heat capacity is the amount of heat required to raise the temperature of the unit mass of the substance by 1K.

(b)Let final temperature be T

-heat lost by metal = 0.2 x 400 x (100 – T)

-heat gained by water = 0.05 x 4200 x (T – 20)

Since heat gained = heat lost

210(T – 20) = 80(100 – T)

ON SOLVING T =35.86^0C

(c)Latent heat = mass x specific latent heat

Specific latent heat = latent heat/mass

= 267520/800

Then, specific latent heat of fusion of ice is 334.4 J/g

10.(a)vernier caliper

(b)A ratchet

B vernier scale

C main scale

D jaws

E internal jaws

(c)external and internal diameters of the objects and the depth.