PHYSICS FORM TWO NECTA 2012.

Solutions from: Maktaba by TETEA

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

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

2.

i	ii	iii	iv	v	vi	vii	viii
J	G	D	L	A	H	E	F

3. (a)(i)Scalar are physical quantities having magnitude only but no direction, while vectors has both magnitude and direction.

(ii)Kinetic energy is the energy of the body due to its motion, while potential energy is the energy of the body due to its position.

(b)(i)mass does not change but weight changes due to position of the body.

(ii)mass is scalar quantity, while weight is vector quantity.

4. (a)Elasticity is the ability of material to recover its original position after removal of deforming force.

(b)(i)stroking

(ii) Electromagnetic induction

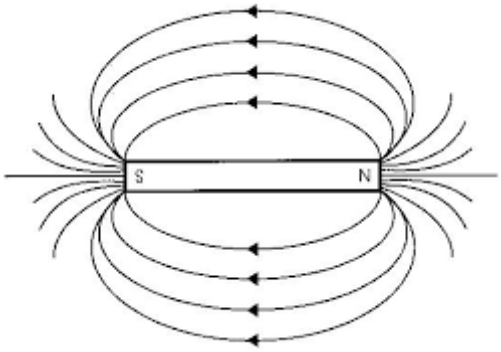
5. (a)(i)solid

(ii) liquid

(iii) gas

(b) Minimize friction between moving machine parts.

(c)



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6. (a(i)stable equilibrium

(ii)unstable equilibrium

(iii) neutral equilibrium

(b)efficiency = VR/MA

MA = VR/eff,

= 5/0.8

Mechanical advantage = 6.25

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

(ii)Energy is the capacity of doing a work

(iii)Power is the rate of doing work.

(iv)density is the ratio of mass and volume of a substance

(b) Force = ma, a = F/M

= 10/5 = 2 m/s^2

Also, acceleration = velocity/time

2 = velocity/3

Velocity is 6 m/s

8. (a)(i)Because the depth is large hence the pressure also become large to push much water out of the tank.

(ii)Because wider tyres make pressure to be small hence force is reduced.

(b) minimum area = 6 x 4 = 24 m^2

Force = 150 x 10 = 1500 N

Pressure = force/ area=

= 1500/24

Maximum pressure is 62.5 N/m^2

9. (a) Archimedes principle states that, “When the body is partially or totally immersed in fluid it experience a upthrust which is equal to the total weight of the body”

(ii)Law of flotation states that “a floating body displaces its own weight of fluid on which it floats”

(b)First, find the density of the body, then compare it with that of water. If the density of the body is greater than that of water, then the body will sink, otherwise not.

Density of body = mass/volume

= 120/100

= 1.2 g/cm^3

Density of water = 1 g/cm^3

Since the density of body is greater than that of water, then the body will sink.

10.(a)Ohms law states that “at constant temperature, the p.d of the circuit is proportional to the current”

(b)R = V/I

= 5/1.8

R = 2.8Ω

(c)Total resistors in series = R1R2/R1 + R2)

R_T = (2 x 4)/(2 + 4)

= 1.33 Ω

Then,I = V/R

I = 10/1.33

Current = 7.5 A

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