Quantity	Symbol	Unit	Symbol
Acceleration	a	metres per second squared	m/s^2
Activity	A	becquerel	Bq
Area	A	metres squared	m^2
Change in	Δ *(delta)*	-	-
Charge	Q	coulombs	C
Current	I	amps	A
Density	ρ *(rho)*	kilograms per cubic metre	kg/m^3
Distance or displacement	s	metres	m
Efficiency	-	percentage	%
Elastic potential energy	E_e	joules	J
Energy	E	joules	J
Extension	e	metres	m
Final velocity	v	metres per second	m/s
Force (resultant force)	F	newtons	N
Frequency	f	hertz	Hz
Gravitational field strength	g	newtons per kilogram	N/kg
Gravitational potential energy	E_p	joules	J
Height	h	metres	m
Initial velocity	u	metres per second	m/s
Kinetic energy	E_k	joules	J
Magnetic flux density	B	tesla	T
Magnification	M	-	-
Mass	m	kilograms	kg
Moment	M	newton metres	Nm
Momentum	p	kilogram metres per second squared	$kg\ m/s^2$
Number of turns	n	-	-
Potential difference	V	volts	V
Power	P	watts	W
Pressure	p	pascals	Pa

Radiation dose	-	sieverts	Sv
Resistance	*R*	ohms	Ω *(omega)*
Specific heat capacity	*c*	joules per kilogram per degree Celcius	J/kg °C
Specific latent heat	*L*	joules per kilogram	J/kg
Speed	*v*	metres per second	m/s
Spring constant	*k*	newtons per metre	N/m
Temperature	*θ (theta)*	degrees Celsius	°C
Thermal energy	*E*	joules	J
Time	*t*	seconds	s
Velocity	*v*	metres per second	m/s
Volume	*V*	metres cubed	m^3
Wave speed	*v*	metres per second	m/s
Wavelength	*λ (lambda)*	metres	m
Weight	*W*	kilograms	kg
Work done	*W*	joules	J

	Equation	Symbol
	kinetic energy = ½ x mass x speed^2	$E_k = \frac{1}{2} m v^2$
Equation Sheet	elastic potential energy = ½ x spring constant x extension^2	$E_e = \frac{1}{2} k e^2$
	gravitational potential energy = mass x gravitational field strength x height	$E_p = m g h$
Equation Sheet	change in thermal energy = mass x specific heat capacity x change in temperature	$\Delta E = m c \Delta\theta$
	power = energy transferred / time	$P = E / t$
	power = work done / time	$P = W / t$
	efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	-
	efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	-
	charge = current x time	$Q = I t$
	potential difference = current x resistance	$V = I R$
	resistors in series: total resistance = sum of individual resistances	$R_{Total} = R_1 + R_2$
	power = potential difference x current	$P = V I$
	power = current^2 x resistance	$P = I^2 R$
	energy transferred = power x time	$E = P t$
	energy transferred = charge x potential difference	$E = Q V$
	density = mass / volume	$\rho = m / V$
Equation Sheet	energy for a change of state = mass x specific latent heat	$E = m L$
Equation Sheet	For a fixed mass of gas at constant temperature: pressure x volume = constant	$p V = constant$
	weight = mass x gravitational field strength	$W = m g$
	work done = force x distance (moved along the line of action of the force)	$W = F s$

	force = spring constant x extension	$F = k\,e$
	moment of a force = force x distance (perpendicular from the pivot to the line of action of the force)	$M = F\,d$
	pressure = force normal to a surface / area	$p = F / A$
Higher **Equation Sheet**	**pressure = height x density of liquid x gravitational field strength**	$\boldsymbol{p = h\,\rho\,g}$
	distance travelled = speed x time	$s = v\,t$
	acceleration = change in velocity / time taken	$a = \Delta v / t$
Equation Sheet	final velocity^2 – initial velocity^2 = 2 x acceleration x distance	$v^2 - u^2 = 2\,a\,s$
	resultant force = mass x acceleration	$F = m\,a$
Higher	**momentum = mass x velocity**	$\boldsymbol{p = m\,v}$
Higher **Equation Sheet**	**force = change of momentum / time taken**	$\boldsymbol{F = m\,\Delta v / \Delta t}$
Equation Sheet	period = 1 / frequency	$T = 1 / f$
	wave speed = frequency x wavelength	$v = f\,\lambda$
Equation Sheet	magnification = image height / object height	-
Higher **Equation Sheet**	**For a conductor at right angles to a magnetic field carrying a current:** **force = magnetic flux density x current x length**	$\boldsymbol{F = B\,I\,l}$
Higher **Equation Sheet**	**potential difference across the primary coil / potential difference across the secondary coil = number of turns in primary / number of turns in secondary**	$\boldsymbol{V_p / V_s = n_p / n_s}$
Higher **Equation Sheet**	**potential difference across secondary coil x current in secondary coil = potential difference across primary coil x current in primary coil**	$\boldsymbol{V_s\,I_s = V_p\,I_p}$

Quantities	Word Equation	Symbol Equation	Correct
kinetic energy mass speed			
change in temperature energy mass specific heat capacity			
power time work done			
current potential difference resistance			
current potential difference power			
density mass volume			
distance work done force			
area force normal to a surface pressure			
acceleration force resultant force			
frequency wavelength wave speed			

Quantities	Word Equation	Symbol Equation	Correct
area force normal to a surface pressure			
change in temperature energy mass specific heat capacity			
kinetic energy mass speed			
current potential difference resistance			
current potential difference power			
frequency wavelength wave speed			
extension force spring constant			
acceleration change in velocity time taken			
mass **momentum** **velocity**			
current **force** **length** **magnetic flux density**			

Quantities	Word Equation	Symbol Equation	Correct
current potential difference resistance			
current potential difference power			
extension force spring constant			
image height magnification object height			
distance force moment			
gravitational field strength mass weight			
constant pressure volume			
acceleration change in velocity time taken			
mass **momentum** **velocity**			
current **force** **length** **magnetic flux density**			

Quantities	Word Equation	Symbol Equation	Correct
area force normal to a surface pressure			
efficiency useful power output total power input			
current power resistance			
acceleration change in velocity time taken			
frequency wavelength wave speed			
image height magnification object height			
constant pressure volume			
current **force** **length** **magnetic flux density**			
change in momentum **force** **time taken**			
primary pd **primary current** **secondary pd** **secondary current**			

Quantities	Word Equation	Symbol Equation	Correct
energy for a change of state mass specific latent heat			
charge energy transferred potential difference			
charge current time			
efficiency total input energy transfer useful output energy transfer			
frequency period			
acceleration distance initial velocity final velocity			
current power resistance			
primary pd **primary current** **secondary pd** **secondary current**			
change in momentum **force** **time taken**			
density of liquid **gravitational field strength** **height** **pressure**			

Quantities	Word Equation	Symbol Equation	Correct
acceleration distance initial velocity final velocity			
acceleration change in velocity time taken			
charge energy transferred potential difference			
image height magnification object height			
constant pressure volume			
gravitational field strength mass weight			
current potential difference resistance			
density of liquid **gravitational field strength** **height** **pressure**			
current **force** **length** **magnetic flux density**			
change in momentum **force** **time taken**			

Quantities	Word Equation	Symbol Equation	Correct
elastic potential energy extension spring constant			
change in temperature energy mass specific heat capacity			
gravitational field strength gravitational potential energy height mass			
kinetic energy mass speed			
efficiency total input energy transfer useful output energy transfer			
frequency wavelength wave speed			
extension force spring constant			
change in momentum **force** **time taken**			
primary pd **primary number of turns** **secondary pd** **secondary number of turns**			
primary pd **primary current** **secondary pd** **secondary current**			

Quantities	Word Equation	Symbol Equation	Correct
efficiency total input energy transfer useful output energy transfer			
change in temperature energy mass specific heat capacity			
acceleration change in velocity time taken			
density mass volume			
distance work done force			
area force normal to a surface pressure			
change in momentum **force** **time taken**			
primary pd **primary number of turns** **secondary pd** **secondary number of turns**			
mass **momentum** **velocity**			
current **force** **length** **magnetic flux density**			