Triple Formulas **(Underline means given in the paper)**	
Biology Paper 1	Magnification = size of image / size of object
	Circular Cross-sectional area = πr^2
	Volume of cube = length x length x length Surface area = 6 x length x length Ratio = Surface area /volume
	Percentage change = (change / original) x 100%
	Heart rate = number of beats / number of minutes
	Breathing rate = number of breaths / number of minutes
Biology Paper 2	Probably = number of desired outcomes / total possible outcomes
	Efficiency between tropic level = (Energy transferred to next level / Energy in current level) x 100
Chemistry Paper 1	Atomic number = Number of protons (also number of electrons in an atom) Mass Number = Number of protons + number of neutrons Group number = number of electrons in last shell Period number = number of electron shells Overall charge = number of protons – number of electrons
	$$Relative\ atomic\ mass = \frac{(mass_1 \times abundance_1) + (mass_1 \times abundance_1) + \cdots}{Total\ abundance}$$
	Relative formula mass (molar mass) = sum of relative atomic mass of all atoms in chemical formula
	Conservation of Mass: Total mass of reactants before reaction = Total mass of products after reaction
	Mole = mass / molar mass
	Number of particles = mole x Avogadro's constant Avogadro's Constant = 6.02×10^{23}
	Concentration = mass / volume
	Concentration = mole / volume
	Percentage yield = (mass of product made / maximum theoretical yield) x 100%
	Atom economy = (Molar mass of desired product / Sum of molar mass of all products) x 100%
	Volume of gas at room temp. = mole x 24(dm^3)
	Energy change = Bond enthalpy of reactants – Bond enthalpy of products
Chemistry Paper 2	Rate of reaction = amount of reactant used or a amount of product formed / time taken
	Rate of reaction at a given point on a reaction curve = gradient = difference in y / difference in x
	General formula for alkanes: C_nH_{2n+2}, where n is the number of carbon atoms
	General formula for alkenes: C_nH_{2n} General formula for alcohol: $C_nH_{2n+1}OH$ General formula for carboxylic acid $C_{n-1}H_{2n+1}COOH$ Where n is the number of carbon atoms

Physics Paper 1	Kinetic energy = 0.5 x mass x velocity^2
	Elastic potential energy = 0.5 x spring constant x extension^2
	Gravitational potential energy = mass x gravitational field strength x height
	Thermal Energy = mass x specific heat capacity x temperature change
	Energy for change in state = mass x specific latent heat
	Charge (coulomb) = current (ampere) x time (second)
	Voltage = current x resistance
	Electrical Power = Voltage x Current Electrical Power = Current^2 x Resistance
	Electrical energy transferred = Voltage x Charge Electrical energy transferred = Electrical Power x time
	Density = Mass / Volume
	Pressure for a fixed mass of gas held at a constant temperature: Density x Volume = constant
Physics Paper 2	Weight = Mass x Gravitational Field Strength
	Work Done = Force x Distance
	Force = String Constant x Extension
	Work Done in stretching/ compressing spring = Elastic potential energy = 0.5 x spring constant x Extension^2
	Pressure = force x Area
	Pressure due to a column of liquid = height of column x density of liquid x gravitational field strength
	Distance = Velocity x Time
	Acceleration = Change in Velocity x Time = (Final velocity – Initial Velocity) / Time
	Final Velocity^2 – Initial Velocity^2 = 2 x Acceleration x Distance
	For a distance-time graph, the gradient =speed Gradient = Change in y / Change in x
	For a velocity-time graph, the gradient = acceleration and area underneath the line is distance Gradient = Change in Y/ Change in X Area of Rectangle = Width x Height Area of Triangle = 0.5 x width x Height
	Force = Mass x Acceleration
	Force = Mass x Change in Velocity / Time taken
	Momentum = Mass x Velocity Momentum before Collision = Momentum after Collision
	Wave speed = Frequency x Wavelength
	Time Period = 1 / Frequency
	Magnification = Image Height / Object Height
	Force on a conductor (at right angles to a magnetic field) carrying a current = Magnetic flux density x current x length
	$\frac{Voltage\ across\ primary\ coil}{Voltage\ across\ secondary\ coil} = \frac{Number\ of\ turns\ in\ primary\ coil}{Number\ of\ turns\ in\ secondary\ coil}$
	Voltage across primary coil x current in primary coil = voltage across secondary coil x current in secondary coil