

G C S E PHYSICS FORMULA LIST

FROM JUNE 2003

Foundation & Higher Tier Formula:

potential difference = current × resistance

$$V = IR$$

power = potential difference × current

$$P = VI$$

energy transferred = power × time

$$E = Pt$$

total cost = number of Units × cost per Unit

acceleration = $\frac{\text{change in velocity}}{\text{time taken for change}}$

$$a = \frac{v - u}{t}$$

*moment = force × perpendicular distance of
force from the pivot*

momentum = mass × velocity

$$p = mv$$

wave speed = frequency × wavelength

$$v = f\lambda$$

efficiency = $\frac{\text{useful energy transferred}}{\text{total energy input}}$

work done = energy transferred

*work done = force × distance moved in
direction of force*

$$W = Fs$$

power = $\frac{\text{work done}}{\text{time taken}}$

$$P = \frac{W}{t}$$

weight = mass × gravitational field strength

$$W = mg$$

*change in gravitational potential energy = weight × change in vertical
height*

$$\Delta P_e = mg\Delta h$$

kinetic energy = $\frac{1}{2} \times \text{mass} \times \text{velocity}^2$

$$K_e = \frac{1}{2}mv^2$$

Higher Tier Formula:

energy transferred = potential difference × charge

$$E = VQ$$

charge = current × time

$$Q = It$$

force = mass × acceleration

$$F = ma$$

force = $\frac{\text{change in momentum}}{\text{time}}$

$$F = \frac{P_1 - P_2}{t}$$

$\frac{\text{voltage across primary}}{\text{voltage across secondary}} = \frac{\text{number of turns on the primary}}{\text{number of turns on the secondary}}$

$$\frac{V_p}{V_s} = \frac{N_p}{N_s}$$

Candidates are also expected to be able to use but not remember the following potential divider equation:

$$V_{out} = V_{in} \times \frac{R_2}{R_1 + R_2}$$