

HIGHER SCHOOL CERTIFICATE EXAMINATIONS

PHYSICS DATA SHEET

CONSTANTS		
Acceleration due to gravity ( $g$ ) = $10 \text{ m s}^{-2} = 10 \text{ N kg}^{-1}$ $c = 3.0 \times 10^8 \text{ m s}^{-1}$ Decay constant ( $\lambda$ ) = $0.63 \div$ half-life in seconds		
FORMULAE		
$P = \frac{F}{A}$	$P = hDg$	$D = \frac{m}{V}$
$v_{av} = \frac{s}{t}$	$a = \frac{v-u}{t}$	$v^2 = u^2 + 2as$
$s = ut + \frac{1}{2}at^2$	$F = ma$	$W = Fs$
$E_p = mgh$	$E_k = \frac{1}{2}mv^2$	$P = \frac{W}{t}$
$v = f\lambda$	$T = \frac{1}{f}$	$n = \frac{\sin \hat{i}}{\sin \hat{r}}$
$n = \frac{1}{\sin \hat{c}}$	$E = mc^2$	$V = IR$
$P = IV$	$E = IVt$	$R = R_1 + R_2 + \dots$
$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$	$Q = It$	$V = \frac{E}{Q}$
$V_s I_s = V_p I_p$	$\frac{V_s}{V_p} = \frac{N_s}{N_p}$	$Q = mc\Delta T$
$Q = mL$	$p = mv$	$n_1 \times \sin i = n_2 \times \sin r$
Efficiency = $\frac{\text{work output}}{\text{work input}} \times 100$	$n_{air} = 1$ $n_{glass} = 1.5$	

Unless otherwise stated, the direction of current in electric circuits must be treated from positive terminal to negative terminal (conventional direction of current)