#### Interference

$$pd = n\lambda$$
 order maximum

$$n\lambda = d\sin\theta$$
 order maximum size of slit

### **Refractive Index**

refractive index  $n = \frac{\sin\theta_{\mathrm{BIG}}}{\sin\theta_{\mathrm{SMALL}}} = \frac{v_a}{v_m} = \frac{\lambda_a}{\lambda_m}$ 

$$n = \frac{1}{\sin \theta_C}$$
 critical angle

Unit 3 - Radiation and Matter

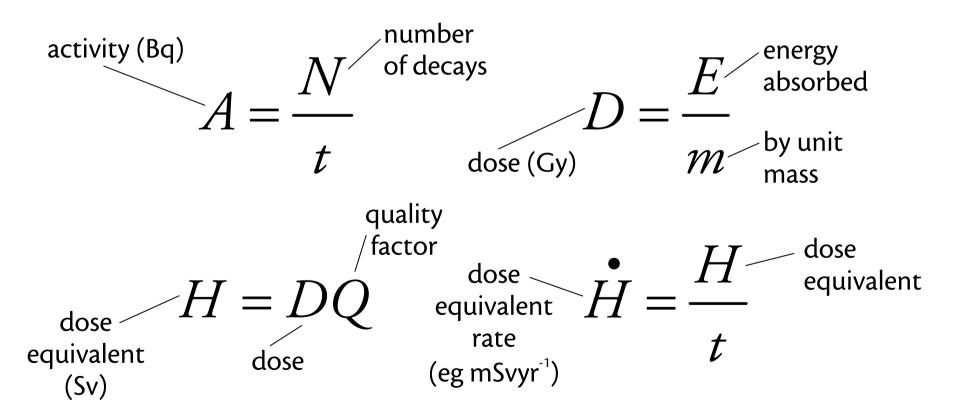
Higher Physics

Unit 3 – Radiation and Matter

## **Intensity**

intensity 
$$I = \frac{P}{A}$$
 power  $I \propto \frac{1}{d^2}$ 

# **Radioactivity**



### **Photoelectric Emission**

$$E = hf \qquad \text{power} - P = Nhf$$
 energy of photon of photon photons

$$E_0 = h f_0$$
 work threshold function frequency

If 
$$E_{in} > E_0$$
, electron gets  $E_k$ :

$$E_k = hf - hf_0$$

frequency of emitted photon caused by an electron falling from a higher energy level

$$f = \frac{\Delta E}{h}$$