

### Subatomic Particles

Particle	Mass	Charge
Electron	$9.1 \times 10^{-31} \text{ kg}$	$-1.6 \times 10^{-19} \text{ C}$
Proton	$1.6 \times 10^{-27} \text{ kg}$	$+1.6 \times 10^{-19} \text{ C}$
Neutron	$1.6 \times 10^{-27} \text{ kg}$	Neutral

### Energy

$$E = h\nu = \frac{hc}{\lambda}$$

E = energy

h = planck's constant

$\nu$  = frequency

c = speed of light

$\lambda$  = wavelength

### Atomic Number

Z is used to denote the *Atomic Number* of an element.

Z = Number of protons in the nucleus

### Constants

Constant	Symbol	Value
Planck's Constant	h	$6.6 \times 10^{-34} \text{ Js}$
Rydberg Constant	R	$109678 \text{ cm}^{-1}$

### Photoelectric Effect

#### Photoelectric Effect

(i)  $E = W + K.E.$

(ii)  $h\nu = h\nu_0 + \frac{1}{2}mv^2$

(iii)  $h\nu = h\nu_0 + (\text{stopping potential}) * (\text{charge})$

$h\nu_0$  is aka 'threshold energy'

C

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