Large-Type Edition

THE UNIVERSITY OF THE STATE OF NEW YORK • THE STATE EDUCATION DEPARTMENT • ALBANY, NY 12234

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2006 Edition

List of Physical Constants

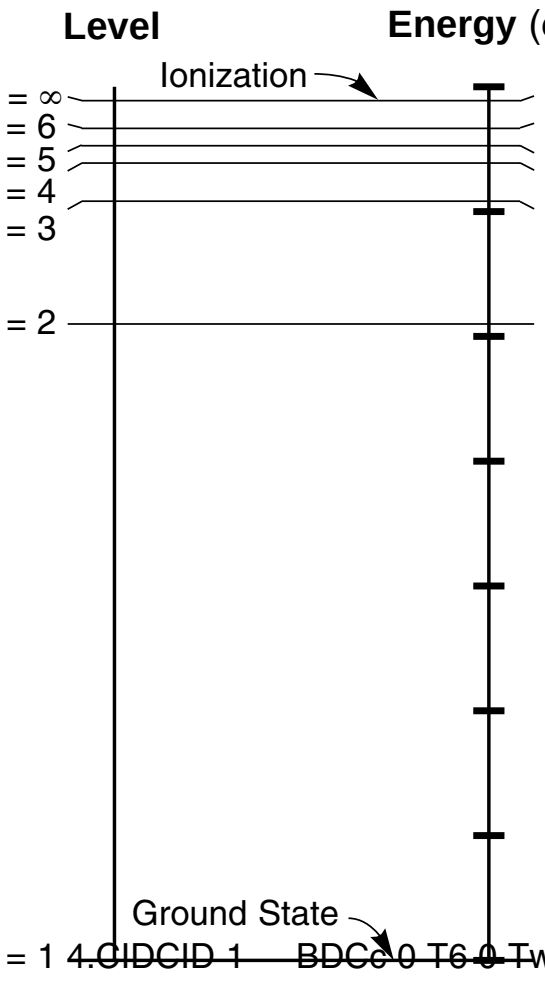
The Electromagnetic Spectrum

Wavelength in a vacuum (m)

10^{-13} 10^{-12} 10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4}

Energy Level Diagrams

Hydrogen



Level

= 1 4.CIDCID 1 BDCc 0 T6 0 Tw917 B–ogen 4.CI9CID 1 BDCc 0 T606 0 T9627 B–ogen

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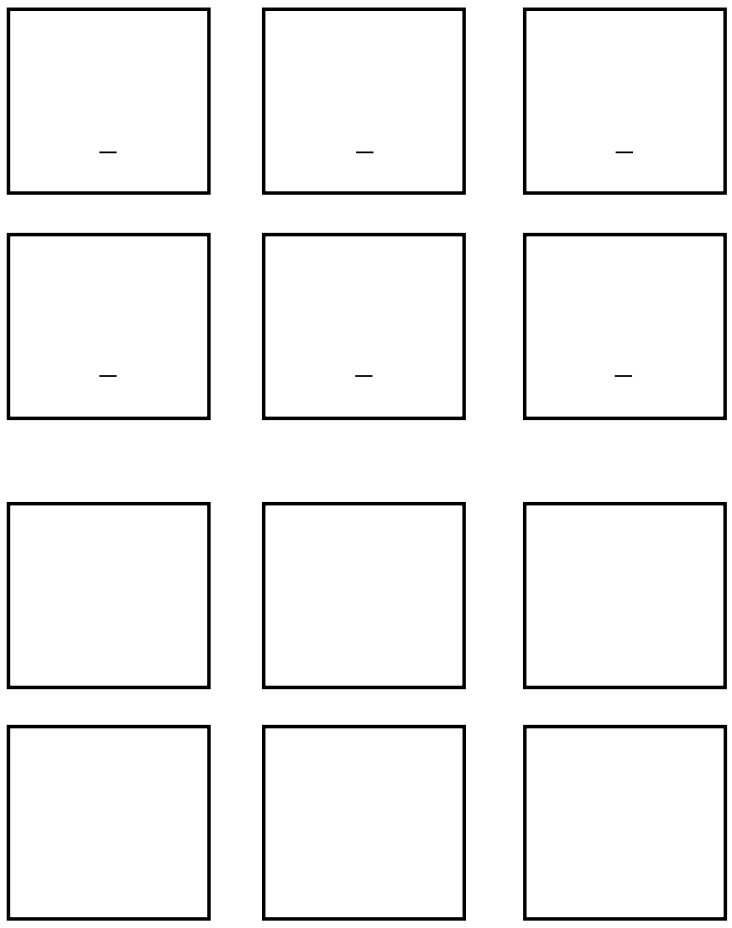

Electricity

$F_{} = \frac{1 2}{2}$

$E = \frac{F}{}$

$= \frac{}{}$

$= \frac{\Delta}{}$

$= \frac{}{}$

$= \frac{\rho}{A}$

$= = 2 = \frac{2}{}$

$= = = 2 = \frac{2}{}$

$\mathbf{C}$

$= {}_1 = {}_2 = {}_3 = \cdots$

$= {}_1 + {}_2 + {}_3 + \cdots$

A = cross-sectional area

E = electric field strength

$F_{}$ = electrostatic force

= current

= electrostatic constant

= length of conductor

= electrical power

= charge

= resistance

= equivalent resistance

= distance between centers

= time

= potential difference

= work (electrical energy)

Δ = change

ρ = resistivity

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Mechanics

$- = \frac{'}{-}$

$= \frac{\Delta}{\_\_}$

$' = {}_2 +$

$' = {}_2 + \frac{1}{2} \quad ^2$

$'^2 = {}_2^2 + 2 '$

$A_ = A \sin \theta$

$A \quad = A \cos \theta$

$= \frac{F_{'}}{\_\_}$

$F_{'} = \mu F$

$F_{'} = \frac{G \quad _1 \quad _2}{^2}$

$= \frac{F_{'}}{\_\_}$

$=$

$' = '$

$E = F_{'} \quad = \Delta$

$F \quad =$

$E \quad = \frac{1}{2} \quad ^2$

$F \quad =$

$= \frac{^2}{\_\_}$

$\Delta \quad E = \quad \Delta$

$E = \frac{1}{2} \quad ^2$

$= F_{'} \quad = \Delta E$

$E \quad = \quad E + \quad E +$

$= \frac{-}{\_\_} = \frac{F_{'}}{\_\_} = F -$

= acceleration

= centripetal acceleration

A = any vector quantity

= displacement or distance

E = total energy

F = force

F = centripetal force

F = force of friction

F = weight or force due to gravity

F = normal force

F = net force

F = force on a spring

= acceleration due to gravity or gravitational field strength

G = universal gravitational constant

= height

E= impulse

= spring constant

E = kinetic energy

= mass

= momentum

= power

E = potential energy

E = potential energy stored in a spring

= internal energy

= radius or distance between centers

= time interval

= velocity or speed

$-$ = average velocity or average speed

= work

= change in spring length from the equilibrium position

Δ = change

θ = angle

μ = coefficient of friction