APPENDIX D

TABLES OF CONSTANTS AND CONVERSION FACTORS

Constants	
Charge of the electron	$e = -1.6 \times 10^{-19}$ C
Permeability of free space	$\mu_0 = 4\pi \times 10^{-7}$ H/m
Permittivity of free space	$\epsilon_0 = 8.854 \times 10^{-12}$ F/m

Conversion factors		
Length	1 meter (m)	= 3.281 ft = 39.37 in
Mass	1 kilogram (kg)	= 0.0685 slug = 2.205 lb mass (lbm)
Force	1 newton (N)	= 0.2248 lb force (lb • f) = 7.233 poundals = 0.102 kg (force)
Torque	1 newton-meter (N • m)	= 0.738 pound-feet (lb • ft)
Energy	1 joule (J)	= 0.738 foot-pounds (ft • lb) = 3.725×10^{-7} horsepower-hour (hp • h) = 2.778×10^{-7} kilowatt-hour (kWh)
Power	1 watt (W)	= 1.341×10^{-3} hp = 0.7376 ft • lbf / s
	1 horsepower	= 746 W
Magnetic flux	1 weber (Wb)	= 10^8 maxwells (lines)
Magnetic flux density	1 tesla (T)	= 1 Wb / m^2 = 10,000 gauss (G) = 64.5 kilolines/in^2
Magnetizing intensity	1 ampere • turn/m	= 0.0254 A • turns/in = 0.0126 oersted (Oe)