MAGNETISM AND MATTER

{11.. Bar magnet : The electrogatic Analog

Elec-triMatiC5	Magnetism
Permittivity = $\frac{1}{6_0}$	PenrillttlVilty =
Charge q	Magnetic pole 5trength ($q_{„}$}
Dipole Moment IP = fl ⁻ l	Magnetic Dipole Moment $W = g_{ni}$

r — I2. 47[E o r 2	0]-!t rrimgrrial. 4' t!
E = q E	F = c m I3
oloial Field E = 1 3 dirpgr 2	§ = 1.10_ 2M 4 r 3
Equatorial Field E = P 47;rz o r 3	= – 11/4 111 41z 1 7
Torque = r5.x E	i.M.6
Potential Fnergy LI = -13 - E	U = -P.fi
vifork W =pE(cos 0 1 —cos El z)	W = MB(cos 0 1 —cos 9 2)

{211. Field due to magnetic monopole 8 = qr- . r / 47c r 2

(311. 13 on the axial line or end on position of a bar magnet

4sc (r 2 —1 2) 2 for r »Il,, 1]. 11111 21:11) / 4 7c r 2

(4). 13 on the equatorial line or broad side on position of a bar magnet

= M / 4% 0- 2 # ?.12 (far r >> = 10 • hil j / 41E

(5). Tirroe period angular SHIM T = 27 — here I is rnornent f Pinola

(611. Gauss's law in mavietisnlip d5 =

{711. For horizontal and vertical component of earth's magnetic field, = tan

(s). tan 8_1 = $\frac{.43\,n}{<Qs\ a}$

(911_ cot^2 $ = cot^2 5_1 +colt^2 &.

(10). Magnetic intensite is 1=1 =

{11}, Relative magnetic permittivity Is

{12). Magnetic Susceptibility ;c_m $\frac{M}{}$

{13}. it_r = 1 +χ_H)

(14) $\frac{1}{(T-T}$