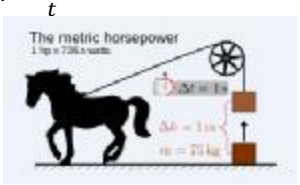
REVIEW OF ELECTRICITY

quantity	symbol	(basic/derived) unit /with prefix	symbol	definition	other definition/formulas/note
charge charge at atomic level	Q q	coulomb (μC, mC) charge of an electron	C e	Q = I*t → 1C= 1Ax1s ±1e=1.6x10^{-19}C	current of 1A flows for 1s elementary charge of an electron/positron
voltage potential difference electromotive force	V(U) PD EMF	volt (kV, MV)	V	V = W/Q → 1V=1J/1C	work done by el. field transporting charge of 1C scientific name maximum PD when not current supplying
current	I	ampere	A	F = $\frac{\mu_0 I_1 * I_2}{2\pi r}$	current of 1A flowing through two parallel wires in distance of 1m in vacuum causes magnetic force of 2x10^{-7}N (Ampere law)
resistance	R	ohm (kΩ)	Ω	R = $\frac{PD}{I}$ → 1Ω = $\frac{1V}{1A}$ R = R_0 (1 + αt) linear dependence	Ohm`s law R_0- resistance at temperature 0^{0}C, α is the temperature coefficient of resistance(material constant),
electric power	P	Watt (kW, MW) horse power	W	P = $\frac{E}{t}$ 	P = PD x I = I^2 x R = $\frac{PD^2}{I}$
supplied electric energy	E	joule, watt hour, kilowatt hour	J Wh kWh	E = P x t →1J = 1Wx1s 1Wh = 1W x 1h 1kWh = 1kW x 1h	E- supplied electric energy to appliance with power P for time t