

FUNDAMENTAL CONSTANTS AND PHYSICAL DATA

Gravitational constant.....	$G = 6.67 \times 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2$
Constant in Coulomb's Law	$k = 9.00 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2$
Elementary charge.....	$e = 1.60 \times 10^{-19} \text{ C}$
Mass of electron	$m_e = 9.11 \times 10^{-31} \text{ kg}$
Mass of proton	$m_p = 1.67 \times 10^{-27} \text{ kg}$
Permeability of free space	$\mu_0 = 4\pi \times 10^{-7} \text{ T} \cdot \text{m}/\text{A}$
Speed of light.....	$c = 3.00 \times 10^8 \text{ m/s}$

Earth

radius	$= 6.38 \times 10^6 \text{ m}$
mass	$= 5.98 \times 10^{24} \text{ kg}$
acceleration due to gravity at the surface of Earth (for the purposes of this examination)	$g = 9.80 \text{ m/s}^2$
period of rotation.....	$= 8.61 \times 10^4 \text{ s}$
radius of orbit around Sun	$= 1.50 \times 10^{11} \text{ m}$
period of orbit around Sun.....	$= 3.16 \times 10^7 \text{ s}$

Moon

radius	$= 1.74 \times 10^6 \text{ m}$
mass	$= 7.35 \times 10^{22} \text{ kg}$
period of rotation.....	$= 2.36 \times 10^6 \text{ s}$
radius of orbit around Earth.....	$= 3.84 \times 10^8 \text{ m}$
period of orbit around Earth.....	$= 2.36 \times 10^6 \text{ s}$

Sun

mass	$= 1.98 \times 10^{30} \text{ kg}$
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