An A.C. voltage v=80sin120πt volts is applied across a 24.0 – Ω resistor. What will an ammeter connected in series with the resistor read?
2.83 A

The work function of a metal is 3.45 eV. Calculate the maximum wavelength of a photon that can eject photoelectrons from the metal
3.4×10-7 m

If a proton enters a magnetic field of flux density 1.5 Wb/m2 with a velocity of 2.0×107 m/s at an angle of 30o to the field, what is the magnitude of the magnetic force on the proton?
2.4×10-12 N

Calculate the energy of a photon of blue light of wavelength 450 nm. [h=6.63×10-34Js; c=2.998×108 m/s].
2.76 eV

An RLC circuit is used to tune a radio set to receive NOUN RADIO broadcasting at 105.9 MHz in the FM band. The resistance and the inductance of the circuit of the radio set are 12 Ω and 1.4 μH respectively. What capacitance should the circuit have?
1.64 pF

A series RLC circuit consisting of a capacitor of capacitive reactance 30 Ω, a non-inductive resistor of 44 Ω, and a coil of inductive reactance 90 Ω and resistance 36 Ω are connected across a 200-V, 60-Hz line as shown in the figure. Calculate the impedance of the circuit.
0.1 kΩ

An electron enters a uniform magnetic field 0.20 T at an angle of 30° to the field. Determine the pitch of the helical path assuming its speed is 3×107 ms-1
46.5 m

A spectral line is emitted when an atom undergoes transition between two levels with a difference in energy of 2.4eV. What is the wavelength of the line?
518 nm

Find the equivalent resistance of the combination of resistances shown in the figure
5.2 Ω

If the half-life of a certain radioactive isotope is 32 hours, what fraction of the sample would remain after 16 hours?
0.71