Exercise

Magnetism

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Magnets & Magnetic Field – Electric current produce Magnetic Field

There are two parallel wires located 10 cm apart. Both straight wires bring currents and the direction of current I_1 = 5 A is out of the page, and I_2 = 7 A is directed into the page.

a) Calculate the total magnetic field midway of the two the wires.

Answer : 0.8×10^{-5} T

Magnets & Magnetic Field – Electric current produce Magnetic Field

A small electric pin yields a 100 A current for 0.2 s. Determine the magnetic field at 10 m from a electric pin.

Answer : 2.0×10^{-6} T

Magnetic force on electric current

A TNB power generator transmits 30 A and is upright to the magnetic field of 0.5 x 10^{-4} T. Calculate the magnitude force exerted on 100 m length of this TNB power generator?

Answer : 0.15 N

Magnetic force on moving charge

A positive charge speeds at 4.00×10^{6} m/s through a magnetic field of 1.70 T and feels a magnetic force of 8.2×10^{-13} N. Calculate the angle between the charge's velocity and the magnetic field?