

by

$$d\vec{B} = \frac{\mu_0}{4\pi} \frac{I d\vec{s} \times \vec{r}}{r^2}$$

2a) What is a magnetic flux

A magnetic flux is a measurement of the total magnetic field which passes through a given area.

b) An electron with a rest mass of 9.11×10^{-31} kg

moves in a circular orbit of radius 1.4×10^{-2} m in a

uniform magnetic field of 3.5×10^{-1} web or μ meter square

perpendicular to the speed of which electron.

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Physic 102 Assignment

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1. State the Biot - Savart law

The Biot - Savart law is an equation that describes the magnetic field created by a current carrying wire and allows you to calculate its strength at various points.

If you point your thumb in the direction of the current in a wire, your fingers will curl around the wire in the direction of the magnetic field.

Using the Biot - Savart law, show that the magnitude of the magnetic field of a straight current - carrying conductor is given as

$$B = \frac{\mu_0 I}{2\pi r}$$

This law enables us to calculate the magnitude and direction of the magnetic field produced by a current in a wire. The law states that:

"any point p , the magnetic field $d\vec{B}$ due to an element $d\vec{l}$ of a current - carrying wire is given