

Chapter 29 Magnetic Fields

29-1 The Magnetic field

29-01

0.40-42%

Question 802

A loop of wire carrying a current of 2.0 A is in the shape of a right-angle triangle with two equal sides, each 15 cm long. A 0.70-T uniform magnetic field is in the plane of the triangle and is directed as shown in figure 7. The magnetic force on side 3 is :

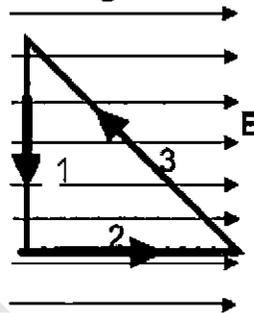


FIGURE 7

- (a) 0.21 N, out the page
- (b) 0.30 N, out of the page
- (c) 0.30 N, into the page
- (d) zero
- (e) 0.21 N, into of the page

29-2 The Definition of B

29-02

Question 803

A charged particle moves in the positive x-direction with velocity v . If there is a magnetic field into the page, then the kinetic energy of the particle will

- (a) be negative.
- (b) oscillate.
- (c) remain constant.
- (d) decrease.
- (e) increase.

29-02

Question 804

Which statement is WRONG:

- (a) If an electron is deflected to the left by a magnetic field, a proton in the same field will deflect to the right.
- (b) A straight current carrying wire aligned parallel to a magnetic field will experience no force.
- (c) The force experienced by a moving charge in a magnetic field is directed tangentially to the magnetic field lines.
- (d) The force due to a magnetic field on a moving charge does not change the energy of the charge.
- (e) Magnetic field lines have no beginning or end.