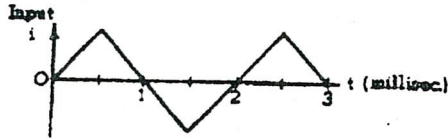
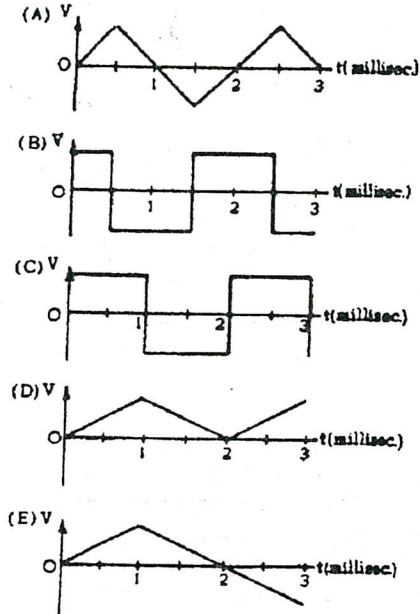


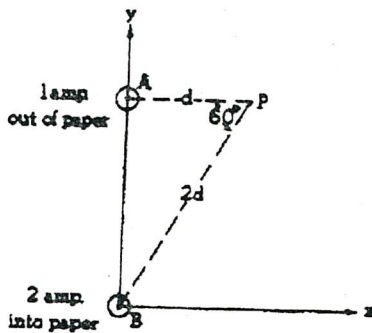
No. 68



An ideal inductor has a current  $I$  that varies as a function of time  $t$ , as shown above. Which of the following sketches represents the voltage  $V$  across the terminals of the inductor as a function of time  $t$ ?



No. 69

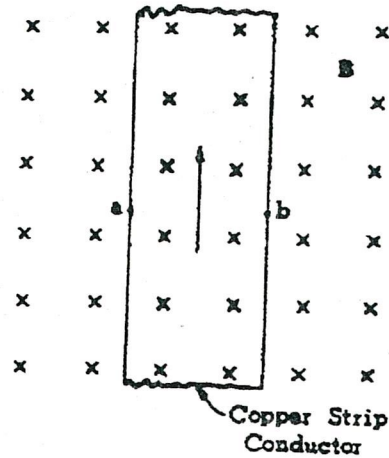


Two long wires perpendicular to the plane of the paper pass through the paper at points A and B shown above. At point A the current is  $I$  ampere out of the paper and at point B the current is 2 amperes into the paper.

At point P the direction of the net magnetic field forms an angle with the  $+x$  direction of

- (A)  $30^\circ$  (B)  $60^\circ$  (C)  $120^\circ$   
(D)  $210^\circ$  (E)  $240^\circ$

No. 70



If a copper strip is situated in a magnetic field and electrons flow in the direction indicated by the arrow, as shown in the figure above, which of the following occurs?

- (A) A small potential difference arises between points a and b such that  $V_a > V_b$   
(B) A small potential difference arises between points a and b such that  $V_a < V_b$   
(C) The electrons travel in small circles, thus creating eddy currents in the strip.  
(D) The electrons are slowed down by the force  $\mathbf{F} = e\mathbf{v} \times \mathbf{B}$ .  
(E) The electrons are speeded up by the force  $\mathbf{F} = e\mathbf{v} \times \mathbf{B}$ .