Acceleration and/or deflection of a charged particle. A charged particle moves with velocity $\mathbf{v}$ in a vacuum. An applied magnetic fields of flux density $\mathbf{B}$ can change

(A) both the magnitude of $\mathbf{v}$ and its direction.
(B) the magnitude of $\mathbf{v}$ but not its direction.
(C) the direction of $\mathbf{v}$ but not its magnitude.
(D) neither the magnitude of $\mathbf{v}$ nor its direction.

Solution: (C)
Answer: (C)