

- 23** Two very long, straight, parallel wires carry equal steady current I in opposite directions. The distance between the wires is d . At a certain instant of time, a point charge q is at a point equidistant from the two wires, in the plane of the wires. Its instantaneous velocity v is perpendicular to this plane. What is the magnitude of the force due to the magnetic field acting on the charge at this instant?

A 0 N **B** $\frac{\mu_0 I q v}{2\pi d}$ **C** $\frac{\mu_0 I q v}{\pi d}$ **D** $\frac{2\mu_0 I q v}{\pi d}$