Answer on Question #49179-Physics-Electromagnetism

A charge particle projected into a region that may have an electric field (E) and/or magnetic field (B). If the charged particle goes un-accelerated, then it is not possible that:

(1) E = 0, B = 0

(2) E ≠ 0, B = 0

(3) E = 0, B ≠ 0

(4) E ≠ 0, B ≠ 0

Solution

(1) If both E and B are zero, then no force exists.

(3) If charge particle is moving parallel to B, then no force exists.

(4) If $eE = qvB$, then no force exists.

Answer: (2) E ≠ 0, B = 0.