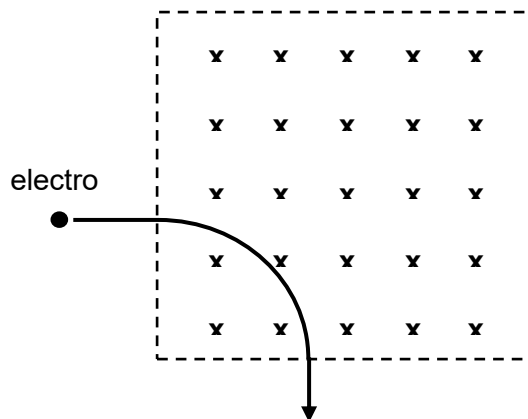


- 24** An electron with speed  $3.0 \times 10^6 \text{ m s}^{-1}$  moves through a magnetic field of magnetic flux density  $2.0 \text{ mT}$  perpendicular to its direction of motion. The electron turns through an angle of  $90^\circ$  along a circular path as shown.



Which of the following statement/s is/are correct?

- (i) The force on the electron is  $9.6 \times 10^{-16} \text{ N}$ .
- (ii) The gain in kinetic energy of the electron is zero.
- (iii) The change in momentum of the electron is zero.

- A** (i) only
- B** (i) and (ii) only
- C** (i) and (iii) only
- D** (iii) only