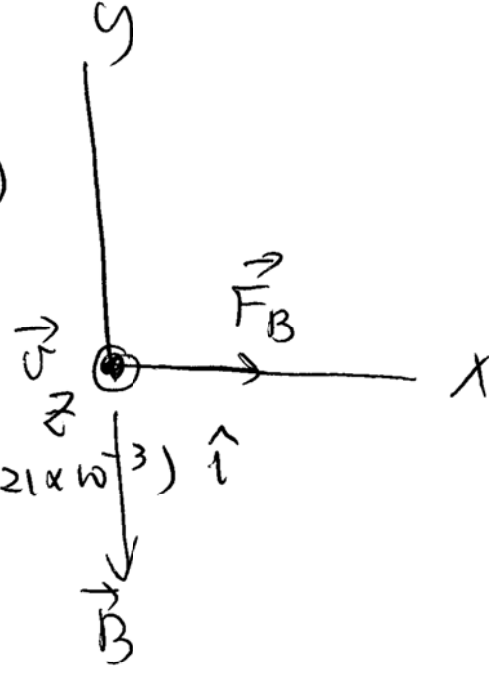


A proton moves with a velocity of 1.0×10^7 m/s in the positive z direction in a uniform magnetic field of magnitude 21×10^{-3} T in the negative y direction. Determine the magnitude and direction of the acceleration (in m/s^2) of the proton.

$$\begin{aligned}
 \vec{F}_B &= q \vec{v} \times \vec{B} \\
 &= q (v \hat{k}) \times B (-\hat{j}) \\
 &= q v B \hat{i} \\
 &= (1.6 \times 10^{-19}) (1.0 \times 10^7) (21 \times 10^{-3}) \hat{i} \\
 \vec{a} &= \frac{\vec{F}_B}{m} \\
 &= \frac{(1.6 \times 10^{-19}) (1.0 \times 10^7) (21 \times 10^{-3}) \hat{i}}{1.67 \times 10^{-27}} \\
 &= 2.0 \times 10^{13} \text{ m/s}^2 \hat{i}
 \end{aligned}$$


04 Sep	11 Sep	18 Sep	25 Sep	2 Oct	9 Oct	23 Oct	30 Oct	6 Nov	13 Nov	20 Nov	27 Nov	4 Dec	11 Dec	18 Dec
Solutions of the quizzes can be found on the webpage: http://faculty.kfupm.edu.sa/phys/aljalal/phys102.htm														
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