A coil has \( N \) turns with radius \( r \) and current \( I \). \( \vec{B} \) is directed in the manner as shown. \( \vec{B} \) is uniformly distributed over the plan of the coil.

Find the direction of torque, \( \tau \).

A) The direction of \( \tau \) is \( \hat{i} \).
B) The direction of \( \tau \) is \( -\hat{i} \).
C) The direction of \( \tau \) is \( \hat{k} \).
D) The direction of \( \tau \) is \( -\hat{k} \).
Right-hand-rule (RHR) #3 implies $\vec{\mu}$ is pointing upward. $\vec{\mu} \times \vec{B}$ is pointing along $-\hat{k}$.

Answer D.

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