The angle between the $\vec{B}$ field and the plane of the loop is $\alpha$.

Determine the direction of $\mu_{\text{loop}}$ and the angle between $\mu_{\text{loop}}$ and $\vec{B}$.

A) The direction of $\mu_{\text{loop}}$ is $\downarrow$ and the angle between $\mu_{\text{loop}}$ and $\vec{B}$ is $\frac{\pi}{2} - \alpha$.

B) The direction of $\mu_{\text{loop}}$ is $\uparrow$ and the angle between $\mu_{\text{loop}}$ and $\vec{B}$ is $\frac{\pi}{2} - \alpha$.

C) The direction of $\mu_{\text{loop}}$ is $\downarrow$ and the angle between $\mu_{\text{loop}}$ and $\vec{B}$ is $\frac{\pi}{2} + \alpha$.

D) The direction of $\mu_{\text{loop}}$ is $\uparrow$ and the angle between $\mu_{\text{loop}}$ and $\vec{B}$ is $\frac{\pi}{2} + \alpha$. 
Right-hand-rule (RHR) #3 implies $\mu_{\text{loop}}$ is pointing downward and $\vec{B}$ is in the $xy$-plane. In turn the angle $\beta$ between $\mu_{\text{loop}}$ and $\vec{B}$ is $\beta = \frac{\pi}{2} - \alpha$.

Answer A.

29.03-05 Current Loop in a Constant B 2004-3-24