Which of the following represents the kinetic energy operator for a molecule that is being treated as a rigid rotor?

a. $$-\frac{\hbar^2}{2I}\left[\frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\sin\theta\frac{\partial}{\partial\theta} + \frac{1}{\sin^2\theta}\frac{\partial^2}{\partial\varphi^2}\right]$$

b. $$\frac{1}{r^2}\left(\frac{\partial}{\partial r}\,r^2\frac{\partial}{\partial r} + \frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\sin\theta\frac{\partial}{\partial\theta} + \frac{1}{\sin^2\theta}\frac{\partial^2}{\partial\varphi^2}\right)$$

c. $$-\frac{\hbar^2}{2m}\left(\frac{\partial^2}{\partial x^2}+\frac{\partial^2}{\partial y^2}+\frac{\partial^2}{\partial z^2}\right)$$

d. $$\frac{-\hbar^2}{2I}\,\frac{1}{\sin\theta}\frac{d^2}{d\theta^2} + \sum_{\substack{j\\ \text{electrons}}}\frac{e^2}{4\pi\varepsilon_0 r_{i,j}} - \sum_{\substack{n\\ \text{nuclei}}}\frac{e^2 Z_n}{4\pi\varepsilon_0 r_{i,n}}$$

e. $$-\hbar^2\left[\frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\sin\theta\frac{\partial}{\partial\theta} + \frac{1}{\sin^2\theta}\frac{\partial^2}{\partial\varphi^2}\right]$$