A ten-year 100 par value bond pays 8% coupons semiannually. The bond is priced at 118.20 to yield an annual nominal rate of 6% convertible semiannually. Calculate the redemption value of the bond.

A. 97 B. 100 C. 103 D. 106 E. 109

Solution.
Based on the Frank formula, \( P = Fr \cdot a_{\frac{n}{2}} + K \), we obtain the equation

\[
118.20 = 4 \cdot a_{20|\frac{3}{2}} + C \cdot 1.03^{20}.
\]

This can be solved using a financial calculator with \( n = 20 \), \( i = 3\% \), \( PV = 118.20 \), \( PMT = 4 \), resulting in \( C \approx 106.00 \). Alternatively, solving the equation

\[
C = 118.20 \cdot 1.03^{20} - 4 \cdot s_{20|\frac{3}{2}} \approx 106.00.
\]

Answer D.