174. Company ABC sets the gross premium for a continuous life annuity of 1 per year on (x) equal to the single benefit premium calculated using:

(i) $\delta = 0.03$

(ii) $\mu_{x+t} = 0.02, \quad t \geq 0$

However, a revised mortality assumption reflects future mortality improvement and is given by

$$\mu_{x+t} = \begin{cases} 0.02 & \text{for } t \leq 10 \\ 0.01 & \text{for } t > 10 \end{cases}$$

Calculate the expected loss at issue for ABC (using the revised mortality assumption) as a percentage of the gross premium.

(A) 2%

(B) 8%

(C) 15%

(D) 20%

(E) 23%