

**Question # 68****Answer: D**

$$v = 0.90 \Rightarrow d = 0.10$$

$$A_x = 1 - d\ddot{a}_x = 1 - (0.10)(5) = 0.5$$

$$\begin{aligned}\text{Benefit premium } \pi &= \frac{5000A_x - 5000vq_x}{\ddot{a}_x} \\ &= \frac{(5000)(0.5) - 5000(0.90)(0.05)}{5} = 455\end{aligned}$$

$$10\text{th benefit reserve for fully discrete whole life} = 1 - \frac{\ddot{a}_{x+10}}{\ddot{a}_x}$$

$$0.2 = 1 - \frac{\ddot{a}_{x+10}}{5} \Rightarrow \ddot{a}_{x+10} = 4$$

$$A_{x+10} = 1 - d\ddot{a}_{x+10} = 1 - (0.10)(4) = 0.6$$

$${}_{10}V = 5000A_{x+10} - \pi\ddot{a}_{x+10} = (5000)(0.6) - (455)(4) = 1180$$