

**140.**  $Y$  is the present-value random variable for a special 3-year temporary life annuity-due on  $(x)$ .  
You are given:

(i)  ${}_t p_x = 0.9^t, \quad t \geq 0$

(ii)  $K_x$  is the curtate-future-lifetime random variable for  $(x)$ .

(iii)  $Y = \begin{cases} 1.00, & K_x = 0 \\ 1.87, & K_x = 1 \\ 2.72, & K_x = 2, 3, \dots \end{cases}$

Calculate  $\text{Var}(Y)$ .

(A) 0.19

(B) 0.30

(C) 0.37

(D) 0.46

(E) 0.55