113. For a disability insurance claim:

(i) The claimant will receive payments at the rate of 20,000 per year, payable continuously as long as she remains disabled.

(ii) The length of the payment period in years is a random variable with the gamma distribution with parameters $\alpha = 2$ and $\theta = 1$. That is,

$f(t) = te^{-t}, \quad t > 0$

(iii) Payments begin immediately.

(iv) $\delta = 0.05$

Calculate the actuarial present value of the disability payments at the time of disability.

(A) 36,400

(B) 37,200

(C) 38,100

(D) 39,200

(E) 40,000