MAP 4176 / 5178   Name:_____

Test 6   Date: February 20, 2018

Each problem is worth 10 points. Show all work for full credit, and use correct notation.

For Numbers 1 through 4, use the assumptions given in the problem to determine the variance of the random variable representing the present value of the benefit for the insurance product described.

1. a discrete 2-year endowment insurance of 10,000 issued to (60) using $DML(\omega = 100)$ mortality and $i = 6\%$

2. a 20-year deferred continuous whole life insurance of 5000 issued to (30), using $CF(\mu = 0.02, \delta = 0.04)$ actuarial assumptions

3. a 10-year term discrete insurance of 50,000 issued to (20), using the L-TAM Table actuarial assumptions

4. a whole life insurance of 10,000 issued to (25), with benefit payable at the end of the quarter of death, using the L-TAM Table actuarial assumptions and the claims acceleration approach

5. Use the L-TAM Table actuarial assumptions to calculate $Var(10000 \cdot v^K)$ where $K = K_{30}$