

Name : **SOLUTION**

Student ID :

Question 1

A loan is amortized over five years with monthly payments at an annual nominal interest rate of 9% compounded monthly. The first payment is 1000 and is to be paid one month from the date of the loan. Each succeeding monthly payment will be 2% lower than the prior payment. Calculate the outstanding loan balance immediately after the 40th payment is made.

Question 2

Ron is repaying a loan with payments of 1 at the end of each year for n years. The annual effective interest rate on the loan is i . The amount of interest paid in year t plus the amount of principal repaid in year $t + 1$ equals X .

Determine which of the following is equal to X .

(A) $1 + \frac{v^{n-t}}{i}$

(B) $1 + \frac{v^{n-t}}{d}$

(C) $1 + v^{n-t} \cdot i$

(D) $1 + v^{n-t} \cdot d$

(E) $1 + v^{n-t}$