Quiz 1 AS201: Financial Mathematics **FORM A** Dr. Mohammad H. Omar

Name_____ ID#:_____ Serial #:___

Instructions. Write important steps to arrive at the solution of the following problems.

1. Jeff deposits 10 into a fund today and 20 fifteen years later. Interest is credited at a nominal discount rate of d compounded quarterly for the first 10 years, and at a nominal interest rate of 6% compounded semiannually thereafter. The accumulated balance in the fund at the end of 30 years is 100. Calculate d.

2. After a number of years, an investment of 1000 accumulates to 3000.

   (a) At an effective annual interest rate of 12%, calculate the **number of years** (including fractions) it will take for this accumulated amount to reach 3000.

   (b) In exactly 10 years, the accumulated amount increases to 3000 at an effective annual rate of i. Calculate i..

   (c) In exactly 10 years, the accumulated amount increases to 3000 at an effective monthly rate of j. Calculate j.

3. Bill will receive \$5000 at the end of each year for the next 4 years. Using an effective annual interest rate of 6%, find today's **present value** of all payments Bill will receive.. .

4. The force of interest increases linearly from 7% per annum (now) to 8.5% per annum over the next three years. What will \$1000 accumulate to over these three years? What is the average annual compound effective rate for the three-year period?