<b>Dawson College: Business Mathematics:</b> 201-801-DW: Winter 2008	
Name:	
Student ID:	

# Test 3

This test is graded out of 63 marks. No books, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

#### **Question 1.** (2 marks)

Express the percent 0.2% as a fraction and as a decimal.

## **Question 2.** (4 marks)

Evaluate the following to two decimal places:

- 1.  $\sqrt[7]{4638}$
- 2.  $(74620)^{\frac{7}{3}}$
- 3.  $-(2)^{-1}$
- 4.  $(2.78)^1$

## **Question 3.** (3 marks)

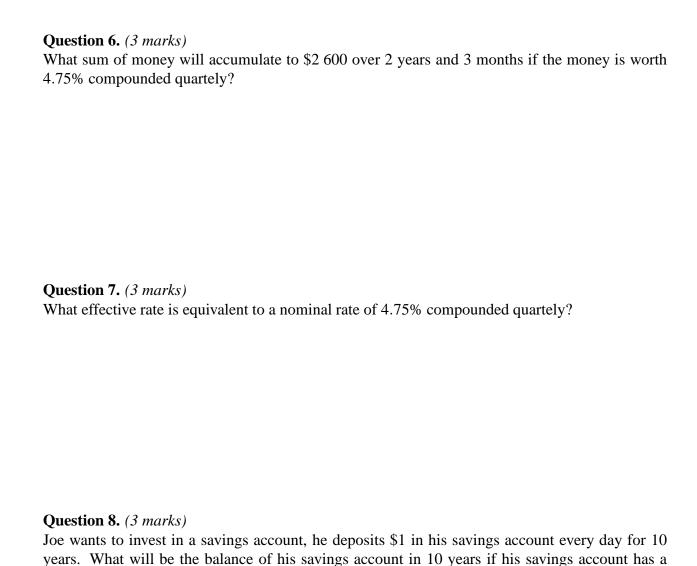
Alexander invests \$5 300 in a bank account for 3 years and 2 months at 9% interest p.a. compounded monthly. What is the future value of Alexander's investment? How much interest does Alexander earn?

## **Question 4.** (6 marks)

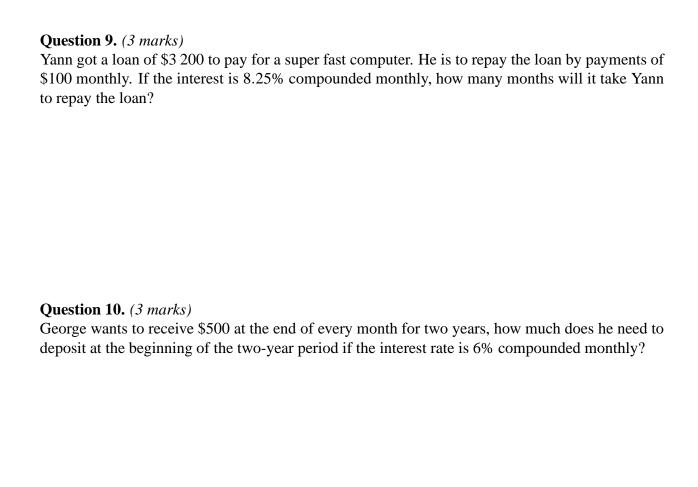
Henri wants to invest \$55 000 in a savings bank account. He has two choices: Bank Double-Interest offers a savings account with an interest rate of 3.75% compounded monthly, Cookie Bank offers a savings account with interest rate of 4% compounded yearly. Suppose the investment period is 6 years and 6 months. Which bank should Henri choose? What is the difference in the amount of interest earned between the two banks?

## **Question 5.** (6 marks)

Marc wins the lottery and has the option of getting \$1 000 000 now or \$500 000 now and \$600 000 in 10 years. Since Mark was a former AEC student he chose the right option. If money was worth 3.75% compounded monthly what did did Mark choose? By how much was his choice better in present value money?

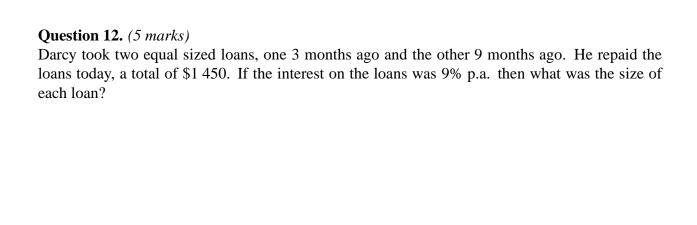


nominal interest rate of 3.75% compounded daily?



## **Question 11.** (3 marks)

What deposit made at the end of each quarter for 10 years will accumulate to \$15 000 at an interest rate of 6% compounded quartely?



## **Question 13.** (4 marks)

The componenent cost to make an OGG Vorbis player is four-ninth of the total cost and labour is one-third of the component cost. If cost of labour is \$10 what is the total cost of the MP3/OGG Vorbis player.

## **Question 14.** (5 marks)

A store buys a sofa for \$1 200 less a trade discount of 25%, 15%, 5%. What is the selling price of the sofa if the store expenses are 15% of the selling price and require a profit of 20% on the selling price. What is the selling price? What is the markup based on the cost?

<b>Question 16.</b> (3 marks) Bobby received \$44.01 interest for a deposit of \$5 100 invested for a period of 90 days. What was the rate of interest p.a.?
<b>Question 17.</b> (2 marks) Compute the future value of \$1 423 over seven months at $2\frac{1}{4}\%$ p.a.?
Question 18. (5 marks) Ron borrowed \$10 000 today and is to repay the loan in two equal payments, one in six months and the other in eight months. If the interest rate is 8.5% p.a. What is the size of the equal payments?
<b>Bonus Question</b> (3 marks)  Derive the formula for future value of a simple ordinary annuity from a geometric progression.