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

Name: \_\_\_\_\_Student ID:

# Test 2

This test is graded out of 65 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 0.1% as a fraction and as a decimal.

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

Evaluate the following to two decimal places:

- 1.  $ln(e^{11})$
- 2.  $(1.3847362)^{\frac{3}{5}}$
- $3. (0.3388847)^0$
- 4.  $-(0.8874661)^0$

## **Question 3.** (4 marks)

Louis Lingg earned \$465.45 for the week. If he receives a base salary of \$200 and has a quota of \$3 500 and a commission of 5.25% on sales that exceed his quota. How much did Louis sell this week.

#### **Question 4.** (3 marks)

A house in Montreal is evaluated at \$485 000. How much will the property tax cost the owner if the mill rate is 35.43.

**Question 5.** (3 marks)

Simplify the following:

$$22 + \frac{1}{4} \left[ \frac{3^3 - 2(1-3)}{4^3 - 4} \right] - \frac{2}{5}$$

**Question 6.** (3 marks)

Simplify the following:

$$-2(x-5)(2-y) + 5(3x^2-8)(y+4)$$

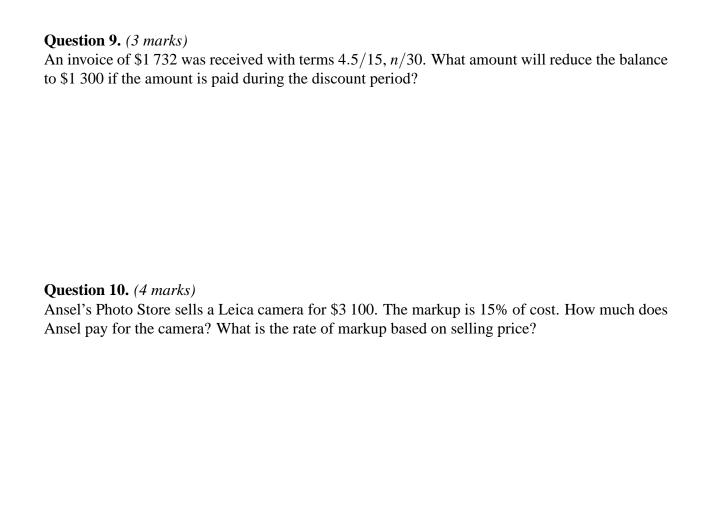
**Question 7.** (3 marks)

Expand and simplify the following:

$$(x-2)^3$$

# **Question 8.** (3 marks)

A computer screen is listed at \$485 less 20%. The net price is reduced further to \$320. What is the additional rate of discount?



A shoe company sells a brand name shoe for \$139.99. If the shoe company wants to markdown

the shoe to a price of \$119.99. What is the rate of the markdown?

**Question 11.** (3 marks)

### **Question 12.** (5 marks)

Super Cool Audio buys an MP3/OGG Vorbis player listed at \$530 less 25%, 30% and 5%. Expenses are 25% of the regular selling price, with a net profit of 15% of the regular selling price. What is the regular selling price? During a store sale the MP3 player is advertised with a 25% discount. What is the operating loss or profit realized on the sale of one MP3/OGG Vorbis player?

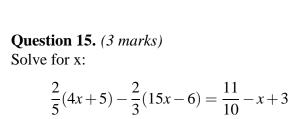
# **Question 13.** (3 marks)

Garry invested \$5 550 for 5 months in a simple interest scheme, with interest at 5.4% p.a.. How much interest did Garry earn in 7 months?

## **Question 14.** (3 marks)

Solve for x:

$$-3(x+5) + (x-6) + 2 = 2(3x-3) - 3$$



# **Question 16.** (3 marks)

George received \$23.59 interest for a deposit of \$4 100 invested for a period of 60 days. What was the rate of interest p.a.?

# **Question 17.** (2 *marks*)

Compute the future value of \$1 920 over five months at  $5\frac{1}{4}\%$ ?

## **Question 18.** (2 marks)

Compute the present value of a debt of \$838.21, 71 days before it is due if money is worth 8.9% p.a.?

#### **Question 19.** (5 marks)

Emma borrows \$12 000 today from the Half-Bad Bank at a rate of 9%. If Emma is to repay the loan in 3 equal payments the first being in 4 months, the second 6 months and the third in 10 months. What is the size of the equal payments (Emma and the Half-Bad Bank determine that the focal date is today)?

#### **Question 20.** (4 marks)

The componenent cost to make an MP3/OGG Vorbis player is five-seventh of the total cost and labour is one-fourth of the material cost. If cost of labour is \$13 what is the total cost of the MP3/OGG Vorbis player.

#### **Bonus Question** (2 marks)

A former AEC student is hired as a manager at David Hilbert's Hotel which is a very large hotel, in fact, it has infinitely many rooms numbered 1, 2, 3, .... The hotel is very popular and every room is occupied one night.

That night a new guest arrives.

- -Is there any free room?
- -No, the former AEC student said.
- -Oh, what a pity, the guest said and started to walk away.
- -But wait, you can still get a room.

How can the former AEC student accommodate the guest?