This examination paper must be returned intact. No part may be removed from the examination room.

Family name: ……..….
Other names: ……
Student ID: ……..……..

MACQUARIE UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS

AFIN 253
Financial Management
DIAGNOSTIC TEST: WEEK 4

Time allowed: 40 minutes.

Instructions

1. Writing is not permitted in reading time. All pens, pencils and highlighters must be on your desk.

2. There are **10** multiple choice questions. Select the 'one best' answer choice for each question. Answers to these must be recorded on a red-coloured General Purpose Answer Sheet which will be marked by a computer. Please make sure your name is on this sheet. Answers on the test question paper will not be marked.

3. Materials Permitted

- A non-programmable calculator without text storage capability is permitted.
- Financial calculators may be used.
- Dictionaries may not be used.
- Mobile phones must be turned off and left at the front of the examination room.
- Bags must be left at the front of the room.

Select the one best answer choice for each question

Question 1: A three year bond has a face value of $100, a yield of 10% and a fixed coupon rate of 5%, paid **semi-annually**. What is its price?

(a) $87.31

(b) $86.92

(c) $76.37

(d) $74.62

(e) $58.63

Question 2: A credit card offers an interest rate of 18% pa, compounding monthly.

Find the effective monthly rate, effective annual rate and the effective daily rate. Assume that there are 365 days in a year.

All answers are given in the same order: $r_{eff\ monthly}$, $r_{eff\ yrly}$, $r_{eff\ daily}$.

(a) 0.0072, 0.09, 0.0002.

(b) 0.0139, 0.18, 0.0005.

(c) 0.0139, 6.2876, 0.0055.

(d) 0.015, 0.1956, 0.0005.

(e) 0.015, 0.1956, 0.006.

Question 3: The following equation is the Dividend Discount Model, also known as the 'Gordon Growth Model' or the 'Perpetuity with growth' equation.

$$P_0 = \frac{d_1}{r_{eff} - g_{eff}}$$

Which expression is equal to the expected dividend return?

(a) $(d_1/P_0\ ) - 1$

(b) $(P_1/P_0) - 1$

(c) $(d_5/d_4) - 1$

(d) d_3/P_2

(e) $(P_1 - P_0)/P_0$

Question 4: You want to buy an apartment priced at $300,000. You have saved a deposit of 10%. The bank has agreed to lend you the $270,000 as a **fully amortising** loan with a term of 25 years. The interest rate is 12% pa and is not expected to change. What will be your monthly payments?

(a) $900.00

(b) $2,700.00

(c) $2,722.10

(d) $2,843.71

(e) $34,424.99

Question 5: A fixed coupon bond was bought for $90 and paid its annual coupon of $3 one year later (at t=1 year). Just after the coupon was paid, the bond price was $92 (at t=1 year). What was the total return, capital return and income return? Calculate your answers as effective annual rates.

The choices are given in the same order: $r_{total}, r_{capital}, r_{income}$.

(a) -0.0556, -0.0222, -0.0333.

(b) 0.0222, -0.0111, 0.0333.

(c) 0.0333, 0.0556, 0.0222.

(d) 0.0556, 0.0222, 0.0333.

(e) 0.0556, 0.0333, 0.0222.

Question 6: Your friend wants to borrow $1,000 and offers to pay you back $100 in 6 months, with more $100 payments at the end of every month for another 11 months. So there will be twelve $100 payments in total. She says that 12 payments of $100 equals $1,200 so she's being generous. If interest rates are 12% pa, given as an APR compounding monthly, what is the Net Present Value (NPV) of your friend's deal?

(a) -$648.51

(b) $60.28

(c) $70.88

(d) $125.51

(e) $200.00

Question 7: What is the NPV of the following series of cash flows when the discount rate is 10% given as an effective **annual** rate?

A payment of $90 in 3 years, followed by payments every 6 months in perpetuity after that which shrink by 3% every 6 months. That is, the growth rate every 6 months is actually negative 3%, given as an effective **6 month** rate.

(a) $899.88

(b) $858.00

(c) $545.53

(d) $520.14

(e) $65.74

Question 8: Bonds X and Y are issued by the same US company. Both bonds yield **6%** pa, and they have the same face value ($100), maturity, seniority, and payment frequency.

The only difference is that bond X pays coupons of **8%** pa and bond Y pays coupons of **12%** pa. Which of the following statements is true?

(a) Bonds X and Y are premium bonds.

(b) Bonds X and Y are discount bonds.

(c) Bond X is a discount bond but bond Y is a premium bond.

(d) Bond X is a premium bond but bond Y is a discount bond.

(e) Bonds X and Y are par bonds.

Question 9: A bathroom and plumbing supplies shop offers credit to its customers. Customers are given 60 days to pay for their goods, but if they pay within 7 days they will get a 2% discount. What is the effective interest rate implicit in the discount being offered? Assume 365 days in a year and that all customers pay on either the 7th day or the 60th day. All rates given in this question are effective annual rates.

(a) 0.1493

(b) 0.1377

(c) 0.1308

(d) 0.1299

(e) 0.0004

Question 10: A European company just issued two bonds, a

2 year zero coupon bond at a yield of 8% pa, and a

3 year zero coupon bond at a yield of 10% pa.

What is the company's forward rate over the third year (from t=2 to t=3)? Give your answer as an **effective annual rate**, which is how the above bond yields are quoted.

(a) 0.1411

(b) 0.1250

(b) 0.1204

(c) 0.0604

(d) 0.0374