



**Corporate Finance**  
**Mid-Term Exam – Spring 2009/2010**

**1 hour and 45 minutes**

This exam consists of 20 questions. Each question is worth 1 point. Work out the problems on scratch paper and only write down the correct answer on the line provided. No explanation is required. **No partial credit will be given even if the mistake that is made is obvious.**

This is a closed book exam. You are allowed one double-sided page of notes. Calculators are permitted. Good luck!

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*Print Name*

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*Print Number*

**Use the following information to answer Problems 1-4:**

You have 10,000 Euros to invest today. The interest rate on the investment is 5% (stated annually) with semi-annual compounding.

**Problem 1**

How much will you have ten years from now?

Answer: \_\_\_\_\_

**Problem 2**

How many years will take to double the amount invested today?

Answer: \_\_\_\_\_

**Problem 3**

What is the effective annual rate?

Answer: \_\_\_\_\_

**Problem 4**

What would be the stated annual rate with daily compounding equivalent to the 5% stated annual rate with semi-annual compounding?

Answer: \_\_\_\_\_

**Use the following information to answer Problems 5-8:**

Assume you borrow 100,000 Euros today, which will be paid back through 10 annual constant installments. The loan interest rate is 10% (stated annually).

**Problem 5**

What is the value of the installment (the first installment will be paid one year from today)?

Answer: \_\_\_\_\_

**Problem 6**

What is the value of the first year reimbursement (the first installment will be paid one-year from today)?

Answer: \_\_\_\_\_

**Problem 7**

What is the value of the instalment if the first instalment will be paid today?

Answer: \_\_\_\_\_

**Problem 8**

What is the value of the instalment if the first instalment will be paid three-year from today?

Answer: \_\_\_\_\_

Use the following information to answer Problems 9-13:

Maturity (years)	Zero-Coupon Bond Price (face value 100)
0.5	99.504
1	98.039
2	94.260
3	88.900

**Problem 9**

Compute the two-year maturity spot rate.

Answer: \_\_\_\_\_

**Problem 10**

Compute forward rate between year 1 and year 3.

Answer: \_\_\_\_\_

**Problem 11**

What is the price today of a three-year to maturity bond with a coupon of 6% (annual frequency)?

Answer: \_\_\_\_\_

**Problem 12**

What is the yield to maturity of a three-month to maturity bond with a coupon of 6% and a quoted price equal to the face value (annual frequency)?

Answer: \_\_\_\_\_

**Problem 13**

What is the price of a one-year to maturity bond with a coupon of 4% (semi-annual frequency)?

Answer: \_\_\_\_\_

**Use the following information to answer Problems 14-17:**

TGF estimates earnings per share of 50 cents for the next year. TGF payout ratio will be 40% forever. The discount rate is 10%.

**Problem 14**

What is the value of a share of TGF if dividends grow forever at an annual rate of 5%?

Answer: \_\_\_\_\_

**Problem 15**

What is the price-earnings ratio of TGF if dividends grow forever at an annual rate of 5%?

Answer: \_\_\_\_\_

**Problem 16**

What is the net present value of growth opportunities of TGF if dividends grow forever at an annual rate of 5%?

Answer: \_\_\_\_\_

**Problem 17**

What is the value of a share of TGF if dividends are 20 cents for the next two years and then grow at an annual rate of 5% forever.

Answer: \_\_\_\_\_

**Use the following information to answer Problems 18-20:**

Company RGF is investing in a machine that costs 1,000 Euros, lasts two years (straight-line depreciation), and has a salvage value before taxes of 200 Euros. The annual sales revenues are 800 Euros, annual operating expenses are 300 Euros and there is no need for working capital. The discount rate is 10% and the corporate tax rate is 25%.

**Problem 18**

What is the project free cash flow on year 1?

Answer: \_\_\_\_\_

**Problem 19**

What is the project free cash flow on year 2?

Answer: \_\_\_\_\_

**Problem 20**

What is the project net present value (NPV)?

Answer: \_\_\_\_\_