SECTION I Questions 1-5 are worth 2 marks each

Answer TRUE (T) or FALSE (F) by circling the appropriate letter

1) A company spends approximately $3 million annually to hire auditors to go over the firm's **T F»**
financial statements. This is an example of an indirect agency cost.

2) If the rate at which you can invest is 0%, the value today of $1 to be received in the future **T F»**
is less than $1.

3) Any regular coupon bond of any maturity will sell for its face value if the coupon rate is the **T» F**
same as the market rate of interest.

4) You have just noticed in your newspaper that you can buy a bond ($1,000 par) for $800. **T» F**
The bond pays annual coupons of 10% and there are 10 years to maturity. You should
Make the purchase if your required return on investments of this type is 12%.

5) From the company's point of view, for income tax purposes, preferred stock is more like **T F»**
debt than it is like common stock.

SECTION II Questions 6-9 are worth 3 marks each

Indicate your answer by circling the appropriate letter

6) Given ***r*** and ***t*** greater than zero,
I. Present value interest factors are less than 1.0;
II. Future value interest factors are less than 1.0;
III. Present value interest factors are greater than future value interest factors
IV. Present value interest factors grow as ***t*** grows, provided ***r*** is held constant

a) I only**»**
b) I and III only
c) I and IV only
d) II and III only
e) II and IV only

7) In order to compare different investment opportunities (each with the same risk) with interest rates reported differently, you should

a) convert each interest rate to an annual nominal rate
b) convert each interest rate to a monthly nominal rate
c) convert each interest rate to an effective annual rate»
d) compare them by using the published annual rates
e) convert each interest rate to an APR

8) Suppose you are trying to evaluate a bond. Which of the following is **NOT** true?

a) the lower the discount rate, the more valuable the coupon payments are at t=0
b) bonds with high coupon payments are generally (all else equal) more sensitive to changes in interest rates than bonds with lower coupon payments»
c) when market interest rates rise, bond prices will fall, all else equal
d) long maturities bonds are generally (all else equal) more sensitive to changes in interest rates than short maturity bonds
e) all else equal, bonds with larger coupon payments will have a higher value at t=0

9) Over the past four years, a company has paid dividends of $1.00, $1.10, $1.20 and $1.30. The company is paying a

a) dividend that grows by 10% each year
b) dividend that grows at a constant rate
c) dividend that grows by a decreasing amount
d) dividend that grows at a decreasing rate»
e) dividend that grows at an increasing rate

SECTION III Questions 10-16 are worth 4 marks each

10) You borrow $2,020 and make end of year repayments for years 1, 2, and 3 of $500, $750 and $1,000 respectively. What rate of interest is being charged on the loan?

a) 4.5%
b) 4.8%
c) 5.0%»
d) 5.4%
e) 5.9%

Solve for r in: 2,020 = 500PV(r%,1) + 750PV(r%,2) + 1,000PV(r%,3)
By trial and error or by calculator: r = 5.01%

11) You have $500 in a savings account which earns 5% compounded annually. How much **additional** interest would you earn in 4 years if you moved the money to an account which earns 6% compounded annually?

a) $21.89
b) $23.49»
c) $24.93
d) $25.88
e) $29.94

$ in account #1: = 500FV(5%,4) = $607.75
$ in account #2: = 500FV(6%,4) = $631.24
Difference = $23.49

12) The company you work for will deposit $600 at the end of each month into your retirement fund. Interest is compounded monthly. You plan to retire 15 years from now and estimate that you will need to withdraw $2,000 per month from the account for the subsequent 20 years. The account pays an APR rate of 8% compounded monthly. How much do you need to put into the account in addition to your company deposit in order to meet your objective?

a) $0.00
b) $57.59
c) $82.58
d) $90.99»
e) $95.88

Let X = amount you need to deposit in addition to the $600 company deposit
The future value of the deposits (an annuity) should equal the present value of the withdrawals
You can think of this problem as being similar to a loan represented by the future value
of the deposits and payments in the form of the $2,000 withdrawals. These should be equal.
You get: (600+X)FVA(.6667%,180) = 2,000PVA(.6667%,240), solve to get X = $90.99
Where .6667% is the effective monthly interest rate (the 8% APR divided by 12)

13) The bonds of a company carry a 7% coupon rate and a market price of $887.76. If the bond matures in 5 years and interest is paid on a semi-annual basis, what is the yield to maturity on the bond? Choose the range below that contains the solution.

a) 4.75-4.95%
b) 5.45-5.65%
c) 7.45-7.65%
d) 9.75-9.95%»
e) 14.75-14.95%

By calculator the semi-annual YTM is 4.95% then multiply by 2 to get an annual 9.90%
Using the approximation you would get a semi-annual YTM of 4.90% or an annual 9.79%
Calculator steps to get semi-annual YTM are: -887.76, PV; 35, PMT; 1,000 FV; CPT, I.

14) What is the market value of a bond that will pay a total of forty semi-annual coupons of $50 each over the remainder of its life? Assume the bond has a $1,000 face value and an 8% yield to maturity.

a) $634.86 B(0) = 50PVA(4%,40) + 1,000PV(4%,40) = $1,197.93
b) $642.26 Calculator: -50,PMT; -1,000,FV; 4, I; 40, N; CPT, PV
c) $1,135.90
d) $1,197.93»
e) $1,215.62

15) A company has just paid a dividend of $1.40 per share. Dividends are expected to grow at a rate of 5% per year for the foreseeable future. If the required return is 10%, what is the value of one share of the company's stock?

a) $14.00 P(0) = [1.40*1.05]/[.1 - .05] = $29.40
b) $15.25
c) $25.80
d) $28.00
e) $29.40»

16) Biogenetics, Inc. plans to retain and reinvest all of their earnings for the next 30 years. Investors believe that, beginning in year 31, the firm will begin to pay a dividend of $12.00 per share. The dividend is expected to remain at the same level thereafter. Given a required return of 15%, what should the stock sell for today?

a) $1.21» P(0) = [12/.15]PV(15%,30) = $1.21 The present value of a delayed perpetuity that has no growth (g = 0)
b) $2.15
c) $8.15
d) $42.00
e) $80.00