AP/ADMS 3530 3.00 Finance
Midterm Exam – Fall 2016
Saturday October 22nd, 2016; 6:30pm – 9:00pm
Version "X"

Instructors and Sections

Kwok Ho   Section A, Fridays, 11:30am-2:30pm, SLH E
                    Section E, Wednesdays, 11:30am-2:30pm, SLH E
Orlando Lopez   Section B, Tuesdays, 7pm-10 pm, SLH E Irvin Pestano
                    Section D, Thursdays, 4pm -7pm, SLH E Samuel Alagurajah
                    Section C, Wednesdays, 4pm-7pm, R N203
                    Section F, Tuesdays 4pm-7pm, VH C
Lois King   Section G, Internet (online)

This exam consists of 40 multiple choice questions and carries a total of 40 marks. Choose the response that best answers each question. Circle your answers below, and fill in your answers on the bubble sheet. *Only the bubble sheet is used to determine your exam score.* Please do not forget to write your name and ID # both at the top of this cover page and on the bubble sheet. Also please write the type of your exam (X or Y) on the bubble sheet.

Please note the following points:

1) **Read the questions carefully and use your time efficiently**.
2) Choose the answers that are **closest** to yours, because of possible rounding.
3) Keep at least **4** decimal places in your calculations and at least **2** in your final answers and at least **6** for the interest rates.
4) *Unless otherwise stated*, interest rates are **annual**, and bonds pay **semi-annual coupons** and have a face value (or par value) of **$1,000**.
5) You may use the back of the exam paper as your scrap paper.
6) Instructors and invigilators will not answer questions during the exam.

1. If you had an OSAP (student) loan outstanding, which of the following terms would you prefer. A loan charging you 10.20% APR with weekly compounding or a loan with 10.25% APR with quarterly compounding. All else being the same.

A) 10.20% APR with weekly compounding
B) 10.25% APR with quarterly compounding
C) You would be indifferent between the two options
D) You cannot answer this question without knowing how much is owing on the loan.
E) You cannot answer this question without know the term of the loans

2. You have purchased a small condo in Toronto for $175,000. You were able to save 20% towards your down payment and will finance the rest with a 25 year mortgage at 7.5% APR (compounded semi-annually). What is your monthly mortgage payment starting in one month?

A) $1,000
B) $1,024.17
C) $1,115.36
D) $1,280.87
E) $1,299.68

3. Based on the above information how much of the first months payment went towards paying down the principal on the mortgage.

A) $21.23
B) $85.35
C) $162.54
D) $454.21
E) $861.03

4. You have just won a lottery that offers you a payment of $100,000 per month forever. The first payment is in one year. Assume that the prevailing market rate of interest is 12% per year (APR compounded monthly). What would you accept as a cash prize today that would put you in the same economic position?

A) $7,899,871
B) $8,814,742
C) $8,874,492
D) $8,963,237
E) $10,000,000

5. You have been offered an investment that will pay you $1,000 in each of the next two years and then $2,000 in year three after which the payments will grow at 3% per year forever?. If your required rate of return on this investment was 7% per year then what is the most you would pay for this investment today.

A) $43,672
B) $45,480
C) $46,296
D) $52,500
E) $52,543

6. How much will you have saved in 40 years if you deposit $1,500 every year starting today. Assume your investment can earn 9% per annum.

A) 17,558
B) 506,824
C) 552,438
D) 633,812
E) 802,876

7. A deposit of $3,500 made 3 years ago is worth $5,200 today. If interest was compounded quarterly then what is the APR on this investment.

A) 12.97%
B) 13.42%
C) 14.93%
D) 15.54%
E) 16.32%

8. Dermot deposits $1,800 in a 4-year term deposit that pays 4% interest with quarterly compounding. At the end of four years, he transfers the amount to another 4-year term deposit that pays 6% interest with monthly compounding. How much will he have at the end of 8 years?

A) $2,681.55
B) $2,589.12
C) $2,333.33
D) $2,475.87
E) $2,658.46

9. Mr. Doolittle owes his friend some money. His friend gives him two options of payment.

I. Pay $3,000 today and $9,500 after 3 years.
II. Pay $1,000 after 1 year, $3,555 after 2 years, $4,444 after 3 years and $X after 4 years.

If the rate of interest is 5% per year, what is the value of X that will make Mr. Doolittle indifferent between I and II?

A) $4,013
B) $3,782
C) $3,658
D) $4,038
E) $3,878

10. Mr. Masui plans to make the following annual contributions to his investment account for the next 30 years:

Year	Amount($)
1	3,000
2	4,000
3	5,000
4	6,000
5	7,000
6	and thereafter 8,000 per year

If the contributions are made at the end of each year, and the rate of interest is 5%, how much money will he have at the end of 30 years?

A) $473,551.52
B) $478,138.26
C) $475,527.50
D) $492,642.36
E) $447,750.72

11. David and Nancy, both age 25, plan to retire in 40 years at age 65. They plan to spend $45,000 per year in retirement. They expect to live 20 years after retirement. The rate of interest is assumed to be 6% per year. They plan to spend $30,000 on their son's education in 20 years. How much must they save and invest per year in order to support their retirement and their son's education? Assume each of the annual payments occurs at the end of each year.

A) $4,100
B) $3,315
C) $3,957
D) $3,335
E) $3,922

12. Mr. Worthington, age 65, has recently retired. He expects that he will spend $55,000 in the first year post-retirement, and that because of inflation, his annual expenditure will increase at the rate of 2% per year. Since his parents and older siblings all died before the age of 90, he does not expect to live longer than 25 years. The rate of interest is expected to be 5.5% per year. How much money does he need today to support his expected post-retirement expenditure? Assume that the annual expenditure is payable at the beginning of each year.

A) $895,365
B) $944,610
C) $778,343
D) $737,766
E) $906,483

13. Tony and Mary are considering buying a home in Toronto in the near future. After paying the required down payment, they will have to borrow a mortgage of $450,000. The local bank suggests to them a 5-year mortgage, quoted at the rate of 3.2% per year with semi-annual compounding. The amortization period is 25 years. What is the monthly payment if the first payment started today?

A) $2,181
B) $2,176
C) $2,170
D) $1,504
E) $2,700

14. Accord Financial Group has bonds outstanding that have a 9 percent coupon rate and a market price of $1,170.47 per bond. If the bonds mature in ten years and interest is paid semi-annually, what is the yield to maturity (YTM)?

A) 3.32%
B) 4.50%
C) 6.00%
D) 6.64%
E) 9.00%

15. The bonds of Rose Hall Corporation are currently selling for $914.11. These bonds mature in ten years, pay semi-annual interest and have a yield to maturity of 7.75%. What is the coupon rate?

A) 5.50%
B) 6.50%
C) 7.20%
D) 7.75%
E) 8.50%

16. AMC Manufacturing Corporation has some 9% coupon bonds on the market that are selling at $1,122.96; pay interest semi-annually; and mature in ten years. AMC would like to issue $5 million in new ten-year bonds. What coupon rate should be set on the new bonds if AMC wants to sell them at par?

A) 3.63%
B) 4.50%
C) 7.25%
D) 8.25%
E) 9.00%

17. A 7.50 percent 15-year bond, paying interest annually, can be called at 120 percent of par value in 10 years. The bond currently sells for $1,145.The yield to call (YTC) is:

A) 6.01%
B) 6.75%
C) 6.90%
D) 7.38%
E) 7.50%

18. Richvale Health Corporation has 8 percent, semi-annual coupon bonds with a current market price of $926.58. The bonds have a par value of $1,000 and a yield to maturity of 9.64 percent. How many years is it until the bonds mature?

A) 5 years
B) 6 years
C) 8 years
D) 10 years
E) 12 years

19. A bond that pays coupons annually is issued with a coupon rate of 5 percent, maturity of 25 years, and a yield to maturity of 8 percent. What rate of return will be earned by an investor who purchases the bond and holds it for 1 year if the bond's yield to maturity at the end of the year is 9 percent?

A) 2.65%
B) -2.65%
C) 5.00%
D) 8.00%
E) 9.00%

20. Kingston Metal Corporation wants to issue 15-year, $1,000 face value zero-coupon bonds. If each bond is to yield 12 percent, what is the minimum number of bonds Kingston must sell if they wish to raise $10 million from the sale? (Assume annual compounding).

A) 10,000
B) 20,000
C) 40,000
D) 54,735
E) 57,435

21. Tyndale Inc. just paid a $2 dividend yesterday. You expect the dividend to grow steadily at a rate of 5% per year for three years, and then grow at 3%. If the discount rate of the stock is 11%, what is the price of the stock?

A) $29.75
B) $27.11
C) $39.66
D) $40.26
E) $29.00

22. Your favourite stock will pay a dividend at the end of this year of $3.4. The dividend yield is 7%. What the price of the stock today?

A) $3.18
B) $3.64
C) $48.57
D) $51.97
E) $23.80

23. The expected EPS (earnings per share) this coming year of Rogers is $6, of which 75% will be reinvested back into the business. The company has an ROE (return on equity) of 15% and the discount rate is 14%. What is Rogers current stock price?

A) $40
B) $163.63
C) $14.63
D) $54.54
E) $42.86

24. What is the expected growth rate for a stock currently priced at $55, that just paid a dividend $2, and has a required return of 12%.

A) 9.07%
B) 8.36%
C) 15.08%
D) 8.68%
E) 8.07%

25. Nestle has a preferred stock with annual dividend of $6, that will be paid into perpetuity. If the discount rate is 12%, at what price should the preferred stock sell?

A) $56
B) $50
C) $100
D) $75
E) $2

26. ABC Inc. reinvests 25% of its earnings back into the corporation. The stock currently sells for $48 today, and the next dividend will be $1.20 per share. The discount rate is 6.5%. What is the firm's return on equity (ROE)?

A) 4%
B) 5.5%
C) 16%
D) 18.5%
E) 20%

27. Equipped with the knowledge gained in your Corporate Finance course you have started monitoring the stock of price of StarPucks. The dividends are forecasted to grow at 20% per year for two years, after which it will grow at a fixed rate of 7% forever. If the discount rate is 12% and a dividend of $3.50 was just paid, what will be the price in 3 years when you graduate and have income to invest?

A) $93.74
B) $115.41
C) $107.80
D) $100.80
E) $6.05