

Multiple Choice Questions:

Please answer the 50 multiple choice questions on the scanner sheet provided. Choose the best answer from the set given for each question. Note, only the scanner sheet will be marked, and anything written on the test paper will be completely disregarded.

1. You have \$500 in an account which pays 5% per year compounded annually. How much additional interest would you earn over four years if you moved the money to an account earning 6% per year compounded annually?

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

2. Which of the following are examples of systematic risk?

I. An increase in the rate of GDP growth
II. An increase in the productivity of ABC Co. workers
III. A decrease in the rate of inflation
IV. A decrease in a firm's cost of borrowing

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

3. Which one of the following actions is the best example of an agency problem?

a) Requiring stockholders approval of all management compensation decisions
b) Basing management bonuses on the attainment of specific financial goals
c) Paying management bonuses based on the current market value of the firm's stock
d) Accepting a project that enhances both management salaries and the market value of the firm's stock
e) Paying management bonuses based on the number of store locations opened during the year

4. Peter is considering a project with an initial cost of \$42,000 and annual cash inflows of \$9,100 a year for six years. What discount rate, when applied to this project, will produce a profitability index of 1.0?

a) 7.65%
b) 8.11%
☒ c) 8.05%
d) 7.00%
e) 7.88%

$$\begin{aligned} CF_0 &= -42,000 \\ CF_1 &= 9,100 \\ F_0 &= 6 \\ \hline IRR &= 8.0535 \end{aligned}$$

5. The profitability index will be:

a) Equal to 1 any time the IRR is less than the discount rate.
b) Greater than 1.0 whenever the net present value is negative.
☒ c) Greater than 1.0 when the IRR is greater than the discount rate.
d) Less than 1.0 any time the discount rate is less than the IRR.
☒ e) Negative any time the net present value is negative.

6. Which of the following statements is consistent with the concept of market efficiency?

☒ a) A recent increase in the volume of shares traded on a particular stock is an important variable to consider when you are deciding whether to buy or sell a stock
b) Management should time their security issuance to coincide with when they believe their stock is most undervalued
☒ c) If you notice that the price of a stock has risen dramatically in the past hour, you should definitely buy at that point because somebody else knows something that you don't about the stock
d) None of the Above
e) 0

7. Adaptomatic Corp. has just issued their latest financial statements. The balance sheet contains the following information. Which one of the following statements is true?

	Beginning	Ending
Accounts receivable	\$1,500	\$1,400
Inventory	\$2,000	\$1,800
Accounts payable	\$1,700	\$1,600

- a) Accounts receivable was a source of cash during the period.
 b) Net working capital increased by \$200 during the period.
 c) Inventory required a use of cash during the period.
 d) There was no change in net working capital.
 e) Net working capital decreased by \$200 during the period.

8. Stock A has an expected return of 13% and a standard deviation of 20%. Stock B has an expected return of 15% and a standard deviation of 25%. The correlation between the two stocks is 0.8. If you invest 25% of your wealth in Stock A and 75% in Stock B, what is the standard deviation of the this portfolio?

- a) 10.00%
 b) 22.93%
 c) 23.75%
 d) 22.50%
 e) 26.56%

$$\sigma_p = \sqrt{(0.25)^2(20\%)^2 + (0.75)^2(25\%)^2 + 2(0.25)(0.75)(20\%)(25\%)(0.8)}$$

with correlation

Use the following to answer question 9:

Bradley Broadcasting expects to pay dividends of \$1.10, \$1.21, and \$1.331 in one, two, and three years, respectively. After that, dividends are expected to grow at a constant rate of 4% forever. Stocks of similar risk yield 10%.

9. What is expected return, given yield on Bradley Broadcasting stock during year 2?

- a) 10%
 b) 14%
 c) 3%
 d) 4%
 e) 9%

10. The common stock of Petersen and White Importers yielded returns of 42 percent, -5 percent, -18 percent, 9 percent, and 12 percent over the past 5 years, respectively. The arithmetic average return for this period of time is _____ percent while the geometric average return is _____ percent.

a) 10; 9.20
 b) 8; 6.19
 c) 10; 9.84
 d) 8; 7.80
 e) 8; 7.01

$$8.7619 = 1.42 \times .95 \times .82 \times 1.09 \times 1.12$$

Use the following to answer question 11:

Louie's Leisure Products is considering replacing an old machine with a more efficient model. The new machine will cost \$1.40 million and have a salvage value of \$500,000 in 8 years. The old machine has a current market value of \$224,000 and an estimated salvage value of \$50,000 in 8 years. The equipment belongs in a 20 percent CCA class. The new machine is expected to reduce operating expenses by \$420,000 per year for each of the next 8 years. The firm has a cost of capital of 14%. The tax rate is 40%.

11. What is the present value of the CCA tax shield?

a) \$309,184.73
 b) \$267,942.49
 c) \$259,715.17
 d) \$240,427.00
 e) \$222,597.15

12. The Exley Company bonds are currently selling for \$1,041.30. These bonds mature in seven years, pay semi-annual interest and have a yield to maturity of 6.75%. What is the coupon rate?

a) 7.25%
 b) 7.00%
 c) 7.50%
 d) 6.75%
 e) 6.50%

$$94.55 = \frac{47.25}{1.03375} + \frac{1000}{1.03375^7}$$

$$= 7.5096$$

13. Alhandro, Inc. just paid an annual dividend of \$1.03. It has been increasing its dividends by 4% annually and is expected to continue doing so. How much can it expect to receive for each new share of stock offered if investors require an 11% rate of return?

- a) \$9.74
 b) \$15.30
 c) \$9.36
 d) \$15.91
 e) \$14.71

$$\frac{1.03 \times 1.04}{0.11 - 0.04} = 15.3$$

Use the following to answer questions 14-15:

You are trying to decide between Machine A and Machine B. Both machines do the same job and each will be replaced as it wears out. The required return is 15%. Ignore taxes.

	Machine A	Machine B
Initial cost	\$200,000	\$300,000
Operating Cost/year	15,000	17,500
Life	8 yrs	10 yrs

14. What is the EAC of machine A?

- a) -\$59,570
 b) -\$22,437
 c) -\$301,664
 d) -\$201,676
 e) -\$48,163

$$67309.82 \neq 200000$$

$$267309.82$$

$$59570$$

15. What is the EAC of machine B?

- a) -\$94,113
 b) -\$61,664
 c) -\$77,276
 d) -\$85,776
 e) -\$90,163

$$387822.45$$

$$77275.618$$

16. What is the future value at the end of year 4 of the following set of cash flows? Assume an interest rate of 8% per year compounded annually.

Year	1	2	3	4
Cash Flow	\$1000	-\$1000	\$1000	-\$1000

- a) \$3,312.13
b) \$ 379.41
c) \$ 127.38
d) \$ 0.00
e) \$ 173.31

It will ask PBP

17. Strapped for cash, your neighbour makes you the following offer. He would like to borrow \$10,000 today. He will repay the \$10,000 by making 10 yearly payments with the first payment being made at the end of this year. If the payments are to grow by 10% each year (compounded annually) and the appropriate discount rate is 12% per year compounded annually, how much will your neighbour have to pay at the end of the first year?

- a) \$1,769.84
b) \$1,867.94
c) \$108.98
d) \$1,212.97
e) \$1,627.45

1769.84

18. AnnMarie is considering a project which will produce cash inflows of \$1,200 a year for 6 years. The project has a 15 percent required rate of return and an initial cost of \$3,400. What is the discounted payback period?

- a) 2.92 years
b) 4.13 years
c) 2.83 years
d) 3.96 years
e) 3.99 years

1043.48 ✓

907.37 ✓

789.09 ✓

686.10

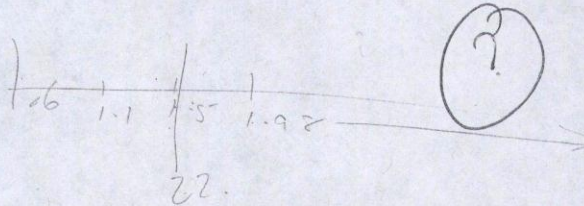
3.96

19. Which one of the following statements concerning beta is correct?

- a) If the weights of the individual securities within a portfolio are changed, the beta of the portfolio will remain constant.
- b) The beta of a portfolio must be greater than or equal to zero but less than or equal to one.
- c) The beta of a portfolio measures the unsystematic risk of the portfolio and has a value that must be greater than or equal to zero.
- d) The beta of a portfolio can be greater than the highest beta of an individual security within the portfolio.
- e) The beta of a portfolio measures the systematic risk of the portfolio and has a value that can not exceed the value of the highest beta of any individual security in the portfolio.

20. The Sister's Market is preparing to pay its first dividends. It is going to pay \$.60, \$1.10, and \$1.50 a share over the next 3 years, respectively. After that, the company has stated that the annual dividend will be \$1.98 per share indefinitely. What is this stock worth to you per share if you demand a 9 percent rate of return?

- a) \$20.11
- b) \$19.08
- c) \$19.62
- d) \$18.22
- e) \$18.65



21. A firm currently has sales of \$864,000, a 34% marginal tax rate, and a dividend payout ratio of 55%. Costs equal 85% of sales. What is the anticipated increase to retained earnings if sales are expected to increase by 6%?

- a) \$47,044
- b) \$90,668
- c) \$40,801
- d) \$38,492
- e) \$49,867

$$\begin{array}{r}
 915,840 \\
 778,464 \\
 \hline
 137,376 \times .34 \\
 46,707.84 \\
 \hline
 90,668.16
 \end{array}$$

Use the following to answer questions 22-23:

You have observed the following zero coupon spot rates:

Time to maturity (years)	Spot Rate (% per year compounded annually)
1	4.0
2	5.0
3	5.5
4	6.0

22. How much would you pay for a 4 year, 10% annual coupon bond with a \$1,000 face value?

- a) \$1,122.08
- b) \$1008.89
- c) \$1,138.60
- d) \$998.47
- e) \$1,143.32

23. What is the yield to maturity of a 4 year, 10% coupon bond with a \$1,000 face value?

- a) 6.44%
- b) 6.00%
- c) 4.00%
- d) 5.88%
- e) 10.00%

Use the following to answer questions 24-29:

The managers of PonchoParts, Inc. plan to manufacture engine blocks for classic cars from the 1960s era. They expect to sell 250 blocks annually for the next five years. The necessary foundry and machining equipment will cost a total of \$800,000 and belongs in a 30% CCA class for tax purposes. The half year rule is in effect and the asset class always remains open. The firm expects to be able to dispose of the manufacturing equipment for \$150,000 at the end of the project. Labour and materials costs total \$500 per engine block, fixed costs are \$125,000 per year. Assume a 35% tax rate and a 12% discount rate.

Same

$$\frac{800,000(1-0.35)}{(1+0.12)^0} + \frac{150,000(1-0.35)}{(1+0.12)^5} - \left[\frac{500 \times 250 \times (1-0.35)}{(1+0.12)^0} + \frac{125,000 \times (1-0.35)}{(1+0.12)^0} \right] \times \frac{1}{0.12}$$

700,000 (0.946) = 662,200

37,500 (0.567) = 21,262.5

683,462.5

24. What is the present value of the salvage?

- a) \$150,000.00
- b) \$93,138.20
- c) \$110,748.99
- d) \$85,114.03
- e) \$55,324.12

85,114.03

25. What is the minimum bid price the firm should set as a sale price for the blocks if the firm were in a bidding situation?

- a) \$1,934
- b) \$2,821
- c) \$2,564
- d) \$1,692
- e) \$2,382

$$0 = -800000 + 168007.20 + X + 85114.03$$
$$X = 546878.77$$

26. What is the present value of the CCA tax shields?

- a) \$168,007.20
- b) \$37,500.00
- c) \$200,000.00
- d) \$151,785.71
- e) \$189,271.85

$$151709.43 \times 0.65 = 98611.13$$
$$125000 \times 0.65 = 81250$$
$$125000 - 81250 = 43750$$
$$43750 \times 0.65 = 28437.5$$
$$98611.13 + 28437.5 = 127048.63$$

27. What is the present value of the after tax operating costs?

- a) \$947,696.69
- b) \$308,001.43
- c) \$616,002.85
- d) \$901,194.05
- e) \$585,776.13

$$233395.12$$
$$585776.13$$

28. What is the total amount of CCA over the first two years?

- a) \$240,000
- b) \$408,000
- c) \$204,000
- d) \$120,000
- e) \$324,000

$$168007.20 \times 0.65 = 109204.68$$
$$(5-0)(1-0.65) = 1.375$$
$$109204.68 \times 1.375 = 149204.68$$

29. Assume that management believes that auto restorers will pay \$3,000 retail per engine block. What is the NPV of this project?

- a) \$401,187
- b) \$521,309
- c) \$624,674
- d) \$644,678
- e) \$260,769

Use the following to answer questions 30-32:

Knickerdoodles, Inc.

	2005	2006
Sales	\$ 740	\$ 785
COGS	430	460
Interest	33	35
Dividends	16	17
Depreciation	250	210
Cash	70	75
Accounts receivables	563	502
Current liabilities	390	405
Inventory	662	640
Long-term debt	340	410
Net fixed assets	1,680	1,413
Common stock	700	235
Tax rate	35%	35%

30. What is net capital spending for 2006?

- a) \$477
- b) \$0
- c) \$57
- d) -\$250
- e) -\$57

31. What is the cash flow from assets for 2006?

- a) \$517
- b) \$50
- c) \$447
- d) \$247
- e) \$297

32. What is the cash flow to stockholders for 2006?

- a) \$482
- b) \$452
- c) \$503
- d) \$417
- e) \$408

33. You are going to withdraw \$1,000 at the end of each year for the next three years from an account that pays interest at a rate of 8% per year compounded annually. How much must there be in the account today in order for the account to reduce to a balance of zero after the last withdrawal?

- a) \$2,577.10
- b) \$2,713.75
- c) \$2,775.67
- d) \$2,602.29
- e) \$793.83

It will have recession

34. What is the standard deviation of a portfolio that is invested 40% in stock A and 60% in stock B, given the following information?

Economic State	Probability of State	Return on Stock A	Return on Stock B
Normal	70%	9%	12%
Boom	30%	14%	18%

- a) 2.57%
- b) 2.69%
- c) 2.84%
- d) 3.13%
- e) 2.18%

$$(.432 - .3516)^2 + (.165 - .3516)^2$$

$$0.00616416 + 0.03519396$$

0.7

$$.4(.9) + .6(.12)$$

$$0.0086 + 0.00492 + 0.00168$$

$$0.0152$$

$$0.0756$$

$$.7(-.432)$$

$$.14(-.14) + .16(-.18)$$

$$-0.056 + .008$$

$$-0.048$$

$$.1248$$

$$12.28$$

35. You purchased a stock for \$47.00 a share one year ago. Today you sold the stock for \$50.21 a share and realized an 8.51% total rate of return. What was the dividend yield on this stock for the past year?

- a) 2.03%
- b) 1.88%
- c) 2.12%
- d) 1.71%
- e) 1.68%

$$8.51\% - 6.8\%$$

36. A new security will pay an initial cash flow of \$100 in 1 year. Thereafter it will pay cash flows every month for the rest of time. The cash flows will grow at 3% per year compounded monthly forever. If you require a return of 6% per year compounded monthly, how much would you be willing to pay for this security?

- a) \$40,000.00
- b) \$33,333.33
- c) \$37,864.59
- d) \$18,932.30
- e) \$20,000.00

$$P_0 = \frac{D_1}{(r-g)}$$

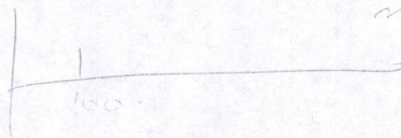
$$D_1 = 100$$

$$P_0 = \frac{100}{0.06 - 0.0025} = 25$$

$$3.041595691 \cdot 9.100$$

$$6.16778186$$

3% growth monthly



$$3.12612$$

Use the following to answer question 37:

Rondolo, Inc.
2006 Income Statement

Net Sales	\$12,800
Less: Cost of Goods Sold	10,400
Less: Depreciation	680
Earnings Before Interest and Taxes	1,720 ✓
Less: Interest Paid	280
Taxable Income	\$1,440
Less: Taxes	500
Net Income	\$940
Dividends	\$423
Additions to retained earnings	\$517

Rondolo, Inc.

2006 Balance Sheet

Cash	\$520	Accounts payable	\$1,810
Accounts rec	1,080	Long-term debt	3,600
Inventory	3,120	Common stock	5,000
Total	\$4,720	Retained earnings	1,790
Net fixed assets	7,480		
Total assets	\$12,200	Total liabilities & equity	\$12,200

37. Rondolo, Inc. is currently operating at maximum capacity. All costs, assets, and current liabilities vary directly with sales. The tax rate and the dividend payout ratio will remain constant. How much additional debt is required if no new equity is raised and sales are projected to increase by 4 percent?

- a) \$318.01
- b) -\$562.50
- c) \$416.00
- d) \$598.75
- e) -\$122.08

38. You have just purchased a house for \$540,000 with a \$200,000 down payment. You are going to get a mortgage at the TF bank for the balance. TF is charging a rate of 5.8% per year compounded semi-annually on 5 year term mortgages. You want to make weekly payments amortized over 20 years. What is your weekly payment?

a) \$871.92
 b) \$549.01
 c) \$532.78
 d) \$545.47
 e) \$877.60

$PV = 340,000$
 $r = 10.9\% (2 \times 5.8\%)$
 5.8%
 $L = 0.5$
 $PV = 52$
 $FV = 2$

39. MDK, Inc. is a high growth firm that has never paid a dividend. The company just issued a press release stating that next year it plans on paying an annual dividend of \$0.34. It also stated that dividends are expected to increase by 40% a year for each of the following four years and then increase by 4% annually thereafter. The required rate of return on this stock is 15%. What is the expected price per share of MDK stock six years from now?

a) \$9.42
 b) \$14.14
 c) \$12.84
 d) \$9.12
 e) \$12.35

$5\% - 3.38\%$
 $1.34 \quad 1.476 \quad 1.664 \quad 1.832 \quad 1.906 \quad 1.413$
 12.84
 1.413
 $15\% - 0.4$

40. The inclusion of thirty highly diverse securities in a portfolio eliminates the bulk of the _____ risk.

a) Unique
 b) Unexpected
 c) Inflation
 d) Market
 e) Expected

41. Asset A, which has an expected return of 12% and a beta of 0.8, plots on the security market line. Which of the following is false about Asset B, another risky asset with a beta of 1.4?

- a) If Asset B plots on the SML, then Asset B and Asset A have the same reward to risk ratio.
- b) If Asset B plots on the SML with an expected return = 18%, then the risk-free rate must be 4%.
- c) If the market is in equilibrium, Asset B also plots on the SML.
- d) If Asset B plots on the SML with an expected return = 18%, the expected return on the market must be 15%.
- e) Asset B has more systematic risk than both Asset A and the market portfolio.

42. What is the expected return on a portfolio that is invested 30% in stock A and 70% in stock B, given the following information?

Economic State	Probability of State	Return on Stock A	Return on Stock B
Normal	80%	8%	6%
Boom	20%	15%	7%

- a) 6.60%
- b) 7.90%
- c) 7.43%
- d) 5.28%
- e) 7.16%

with recession

$$0.3(-0.08) + 0.7(-0.06) = 0.066 \times 8 = 0.0528$$

$$-0.3(-0.15) + 0.7(-0.07) = 0.094 \times 2 = 0.0188$$

43. Swanson Brothers expects to pay a \$2.20 dividend next year which is an increase of 3.25% over the prior year. After next year, dividends are projected to grow at a steady rate of 2.5%. Shares of Swanson stock are currently selling at \$15.80 per share. What is the rate of return on Swanson stock?

- a) 16.77%
- b) 14.27%
- c) 23.66%
- d) 16.42%
- e) 17.17%

Handwritten calculations:

$$P_0 = \frac{D_1}{(1-g)} + \frac{P_1}{(1-g)}$$

$$15.8 = \frac{2.2}{(1-0.025)} + \frac{15.8(1.025)}{(1-0.025)}$$

$$15.8 = \frac{2.2}{0.975} + \frac{16.195}{0.975}$$

$$15.8 = 2.2564 + 16.6102$$

$$15.8 = 18.8666$$

$$15.8r = 18.8666$$

$$r = 1.2004$$

$$r = 17.17\%$$

44. An investor has a portfolio comprised of stock A, which has a beta of 1.4 and an expected return of 10%, and Treasury bills, which have an expected return of 4%. The portfolio has an expected return of 7.30%. What is the portfolio weight of stock A?

- a) 60%
- b) 55%
- c) 45%
- d) 40%
- e) 50%

$$EPR = (1-x)10\% + x4\%$$

$$0.073 = .10 - .10x + .04x$$

$$0.073 = .10 - .06x$$

$$-.027 = -.06x$$

$$x = .45$$

45. The I.C. James Co. invested \$10,000 six years ago at 5% per year simple interest. The I.M. Smart Co. invested \$10,000 six years ago at 5% per year compounded annually. Which one of the following statements is true concerning these two investments?

- I. The I.C. James Co. has an account value of \$13,400.96 today.
- II. The I.C. James Co. will have an account value of \$13,400.96 six years from now.
- III. The I.M Smart Co. will earn \$525 interest in the second year.
- IV. Both the I.C. James Co. and the I.M. Smart Co. will earn \$500 interest in the first year.

- a) I, III and IV only
- b) II and IV only
- c) II, III and IV only
- d) III and IV only
- e) I and III only

$$2000 + 10,000 = 12,000$$

$$13,400.96$$

46. The steeper the slope of the security market line, the:

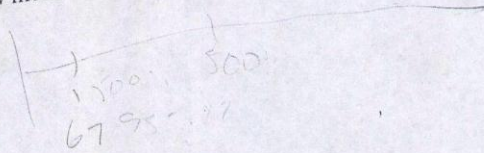
- a) Higher the risk premium
- b) Lower the risk premium.
- c) Higher the risk-free rate of return.
- d) Lower the risk-free rate of return.
- e) Higher the market beta.

$$2.2 + 0.0325$$

$$15.80 + 0.0325$$

47. You have decided to buy an investment that will pay \$500 every 6 months for the next 10 years. The first payment will occur in 1 year. You are required to pay for this investment in two equal installments. The first installment is due immediately, the second installment is due in 6 months. If your required rate of return is 8% per year compounded semi-annually, how much is each installment?

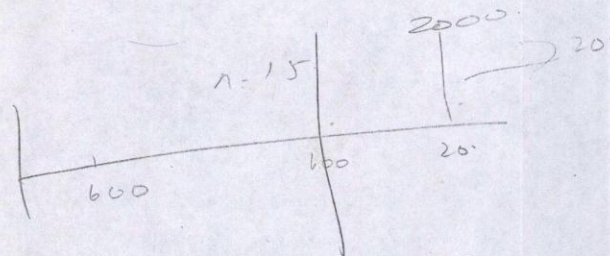
- a) \$6,795.17
 b) \$3,330.96
 c) \$3,397.58
 d) \$3,355.04
 e) \$6,661.92



48. 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 \$2,000 per month out of the account for the next 20 years. If the account pays 8% per year 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) \$95.88
 b) \$0.00
 c) \$104.49
 d) \$90.99
 e) \$57.59

- 9821.12



8%

239108.88

207622.933

Diff.

31485.65

Use the following to answer question 49:

The following balance sheet and income statement should be used:

Taylor, Inc.
2006 Income Statement

Net Sales	\$28,900
Less: Cost of Goods Sold	23,400
Less: Depreciation	1,600
Earnings Before Interest and Taxes	3,900
Less: Interest Paid	280
Taxable Income	\$3,620
Less: Taxes	1,230
Net Income	\$2,390
Dividends	\$956
Additions to retained earnings	\$1,434

Taylor, Inc.		
2006 Balance Sheet		\$2,750
\$1,530	Accounts payable	4,000
2,780	Long-term debt	8,000
3,410	Common stock	5,810
\$7,720	Retained earnings	
12,840		
\$20,560	Total liabilities & equity	\$20,560

49. Assume that all costs, assets, and current liabilities of Taylor, Inc. increase directly with sales. Also assume that the tax rate and the dividend payout ratio are constant. The firm is currently operating at full capacity. What is the external financing need if sales increase by 8 percent?

- a) \$108.14
- b) \$11.68
- c) -\$12.87
- d) -\$123.92
- e) -\$9.20

50. The Langley Company has 6% annual coupon bonds that are currently selling for \$989.53 and have eleven years left to maturity. What is the yield to maturity?

- a) 6.13%
- b) 6.37%
- c) 5.94%
- d) 6.50%
- e) 5.87%