MULTIPLE CHOICE

1. A 15 year, 8%, $1000 face value bond is currently trading at $958. The yield to maturity of this bond must be
   a. less than 8%.
   b. equal to 8%.
   c. greater than 8%.
   d. unknown.
   ANS: C    DIF: E    REF: 4.2 Bond Prices and Interest Rates

2. A bond that grants the investor the right to exchange their bonds for common stock, is called a
   a. zero-coupon bond.
   b. Treasury bond.
   c. convertible bond.
   d. mortgage bond.
   ANS: C    DIF: E    REF: 4.3 Types of Bonds

3. Of the following bonds, which one has the highest degree of interest rate risk?
   a. 20 year 8% bond
   b. 5 year 8% bond
   c. 10 year 8% bond
   d. Not enough information.
   ANS: A    DIF: E    REF: 4.2 Bond Prices and Interest Rates

4. Which of the following information cannot be found in a bond’s indenture?
   a. The coupon rate.
   b. The maturity of the bond.
   c. The price of the bond.
   d. None of the above.
   ANS: C    DIF: E    REF: 4.3 Types of Bonds

5. Bonds issued by US states or local governments are called...
   a. Treasury bonds.
   b. Municipal bonds.
   c. Corporate bonds.
   d. Yankee bonds.
   ANS: B    DIF: E    REF: 4.3 Types of Bonds

6. Bavarian Sausage just issued a 10 year 7% coupon bond. The face value of the bond is $1,000 and the bond makes annual coupon payments. If the required return on the bond is 10%, what is the bond’s price?
   a. $815.66
   b. $923.67
   c. $1,000.00
   d. $1,256.35
   ANS: A
7. Bavarian Sausage just issued a 10 year 7% coupon bond. The face value of the bond is $1,000 and the bond makes semiannual coupon payments. If the required return on the bond is 10%, what is the bond’s price?
   a. $815.66
   b. $1,000
   c. $813.07
   d. $1,035.27
   ANS: C
   FV: 1000
   PMT: 70/2
   I/Y: 10/2
   N: 10*2
   PV: 813.07
   DIF: E
   REF: 4.2 Bond Prices and Interest Rates

8. Bavarian Sausage just issued a 10 year 12% coupon bond. The face value of the bond is $1,000 and the bond makes annual coupon payments. If the required return on the bond is 10%, what is the bond’s price?
   a. $815.16
   b. $1,000
   c. $1,122.89
   d. $1067.24
   ANS: C
   FV: 1000
   PMT: 120
   I/Y: 10
   N: 10
   PV: 1122.89
   DIF: E
   REF: 4.2 Bond Prices and Interest Rates

9. Bavarian Sausage just issued a 10 year 12% coupon bond. The face value of the bond is $1,000 and the bond makes semiannual coupon payments. If the required return on the bond is 10%, what is the bond’s price?
   a. $1,122.89
   b. $815.26
   c. $1,000.00
   d. $1,124.62
   ANS: D
   FV: 1000
   PMT: 120/2
   I/Y: 10/2
   N: 10*2
10. Bavarian Sausage just issued a 10 year 12% coupon bond. The face value of the bond is $1,000 and the bond makes annual coupon payments. If the bond is trading at $967.25, what is the bond’s yield to maturity?
   a. 12.00%
   b. 12.59%
   c. 11.26%
   d. 13.27%

   ANS: B
   FV: 1000
   PV: 967.25
   PMT: 120
   N: 10
   I/Y: 12.59

11. Bavarian Sausage just issued a 10 year 12% coupon bond. The face value of the bond is $1,000 and the bond makes semiannual coupon payments. If the bond is trading at $867.25, what is the bond’s yield to maturity?
   a. 12.00%
   b. 12.37%
   c. 14.56%
   d. 10.86%

   ANS: C
   FV: 1000
   PV: 867.25
   PMT: 120/2
   N: 10*2
   I/Y : 7.28
   yield to maturity: 2*7.28 = 14.56

12. Bavarian Sausage just issued a 10 year 12% coupon bond. The face value of the bond is $1,000 and the bond makes semiannual coupon payments. If the bond is trading at $1,267.25, what is the bond’s yield to maturity?
   a. 12.00%
   b. 8.06%
   c. 14.38%
   d. 10.97%

   ANS: B
   FV: 1000
   PV: 1267.25
   PMT: 120
   N: 10
   I/Y: 8.06
13. Bavarian Sausage wants to issue a 10 year coupon bond. The face value of the bond is $1,000 and the bond makes semiannual coupon payments. Outstanding Bavarian Sausage 8% bonds with a remaining maturity of 10 years are currently trading at $1,145. These bonds also have a face value of $1,000 and make semiannual payments. If Bavarian Sausage wants the new bonds to sell at par, what should be the coupon rate on these bonds?

   a. 8.00%
   b. 6.05%
   c. 7.25%
   d. 9.35%

ANS: B

\[
\text{FV: 1000}
\text{PV: 1145}
\text{PMT: 80/2}
\text{N: 10/2}
\text{I/Y: 3.025}
\]

coupon rate = 3.025*2 = 6.05

DIF: H

REF: 4.2 Bond Prices and Interest Rates

14. You just bought a bond with a yield to maturity of 9.5%. If the rate of inflation is expected to be 4%, what is the real return on your investment?

   a. 9.50%
   b. 5.29%
   c. 4.00%
   d. Not enough information.

ANS: B

\[
r = \frac{1.095}{1.04} - 1 = .0529
\]

DIF: E

REF: 4.2 Bond Prices and Interest Rates

15. What is the value of a 15 year 10% coupon bond with a face value of $1,000. The required return on the bond is 12% and the bond makes semiannual payments.

   a. $862.35
   b. $1,167.39
   c. $925.76
   d. $1,000

ANS: A

\[
\text{FV: 1000}
\text{PMT: 100/2}
\text{I/Y: 12/2}
\text{N: 15*2}
\text{PV: 862.35}
\]

DIF: E

REF: 4.2 Bond Prices and Interest Rates

16. You are offered a zero-coupon bond with a $1,000 face value and 5 years left to maturity. If the required return on the bond is 8%, what is the most you should pay for this bond?

   a. $752.69
   b. $680.58
   c. $1,000
   d. $1,126.94
17. You just bought a 5 year zero coupon bond with a $1,000 face value for $735.67. What is the yield to maturity of this bond?
   a. 10.36%
   b. 6.33%
   c. 4.69%
   d. 8.18%

ANS: B
FV: 1000
PV: 735.67
PMT: 0
N: 5
I/Y: 6.33

DIF: E

REF: 4.3 Types of Bonds

18. You just bought a 5 year zero coupon bond with a $1,000 face value for $735.67. What is the taxable capital gain on this bond next year?
   a. $274.33
   b. $68.51
   c. $169.47
   d. $46.64

ANS: D
FV: 1000
PV: 735.67
PMT: 0
N: 5
I/Y: 6.33

FV: 1000
PMT: 0
N: 4
I/Y: 6.33
PV: 782.31
capital gain: 782.31-735.67 = 46.64

DIF: M

REF: 4.4 Bond Markets

19. The real return is 10% and the expected rate of inflation is 4.5%. What is the nominal rate?
   a. 4.50%
   b. 14.95%
   c. 10.00%
   d. 8.69%
A one year bond offers a yield of 6% and a two year bond offers a yield of 7.5%. Under the expectations theory what should be the yield on a one year bond next year?

a. 13.50%
b. 4.52%
c. 7.38%
d. 9.02%

ANS: D
\[(1.075)^2 = (1.06)(1+r)\]
r = .0902

DIF: M
REF: 4.5 Advanced Bond Valuation - The Term Structure of Interest Rates

A two year bond offers a yield of 6% and a three year bond offers a yield of 7.5%. Under the expectations theory what should be the yield on a one year bond in two years?

a. 5.95%
b. 10.56%
c. 3.06%
d. 12.49%

ANS: B
\[(1.075)^3 = (1.06)^2(1+r)\]
r = .1056

DIF: H
REF: 4.5 Advanced Bond Valuation - The Term Structure of Interest Rates

The yield on a one year bond is 6% today and is expected to be 8.5% next year. Based on the expectations theory, what is the yield of a two year bond today?

a. 15.01%
b. 12.68%
c. 5.67%
d. 7.24%

ANS: D
\[(1+r)^2 = (1.06)(1.085)\]
r = .0724

DIF: H
REF: 4.5 Advanced Bond Valuation - The Term Structure of Interest Rates

You are looking up bond prices in the newspaper and you find the following quote for a $1,000 face value treasury bond: 103.26. What is the price of this bond?

a. $103.26
b. $1,038.13
c. $1,032.60
d. $1,000

ANS: B
\[103.26 = 103.8125\]
\[1000(1.038125) = 1038.13\]
24. You have the choice between investing in a corporate bond with a yield of 8% or a municipal bond. If your marginal tax rate is 28%, what should be the yield on the municipal bond in order to be competitive?
   a. 8.00%
   b. 5.76%
   c. 11.11%
   d. 13.69%

   ANS: B
   \[0.08(1-0.28) = 0.0576\]

25. You have the choice between investing in a corporate bond or a municipal bond with a yield of 8%. If your marginal tax rate is 28%, what should be the yield on the corporate bond in order to be competitive?
   a. 8.00%
   b. 5.76%
   c. 13.64%
   d. 11.11%

   ANS: D
   \[0.08 = r(1-0.28)\]
   \[r = 0.1111\]

26. McLaughlin Enterprises has an outstanding $1,000 par value bond with a 11% coupon that pays at the end of each year. The bond matures in nine years. Bonds of similar risk have a required return of 10%. What is the market value of the McLaughlin bond?
   a. $890.00
   b. $1,053.35
   c. $1,000.00
   d. $1,057.59

   ANS: D
   \[FV = 1,000\]
   \[N = 9\]
   \[I/YR = 10\]
   \[PMT = 110\]
   \[PV = ? = 1,057.59\]

27. Winburn Sports & Entertainment has an outstanding $1,000 par value bond with a 11% coupon that pays semiannually at the end of each period. The bond matures in nine years. Bonds of similar risk have a required return of 10%. What is the market value of the Winburn bond?
   a. $1,035.54
   b. $1,057.59
   c. $1,058.45
   d. $1,073.05

   ANS: C
28. A 10-year Treasury bond with par value of $1,000 has a 6% coupon rate and pays interest every six months. The bond is three years old and has just made its sixth payment. The market now only requires a 5% return on the bond. What is the expected price of the bond?
   a. $802.03
   b. $1,058.45
   c. $1,077.95
   d. $1,350.73
   ANS: B

29. A $1,000 par value bond that makes annual interest payments of $50 and matures in four years sells for $980. What is the yield to maturity of the bond?
   a. 5.57%
   b. 2.47%
   c. 4.54%
   d. 2.04%
   ANS: A

30. Alexis Media issued five-year bonds one year ago with a 7.5% coupon that pays semi-annually (the bonds just paid the second coupon payment). Alexis announced a revised advertising revenue forecast that is quite bleak compared with the prevailing forecast at the time of the bond issuance. Investors now require a 9% return on Alexis bonds. What is the percent change in price of the bonds associated with the change in business conditions?
   a. 4.95% decrease
   b. 8.30% decrease
   c. 29.06% decrease
   d. 19.79% increase
   e. Can’t determine with the information given
   ANS: A
P/YR = 2
FV = 1,000
N = 8
I/YR = 9
PMT = 37.50
PV = ? = 950.53

(950.53 - 1,000)/1000 = -4.95%

DIF: M  REF: 4.2 Bond Prices and Interest Rates

31. A new one-year bond pays interest of 1.04%. A new two-year bond pays interest of 1.46%. Using expectations theory of term structure and assuming the market is in equilibrium, what interest rate does the market expect a new one year bond to have one year from now?
   a. 0.42%
   b. 1.18%
   c. 1.25%
   d. 1.88%

ANS: D
1.0146^2/1.0104 - 1 = .0188

DIF: E  REF: 4.5 Advanced Bond Valuation

32. The value of any asset
   a. is based upon the benefits provided by the asset in prior years.
   b. is based upon the benefits that the asset will provide the owner of the asset this year.
   c. equals the present value of future benefits accruing to the asset’s owner.
   d. is not described by any of the above.

ANS: C  DIF: E  REF: Learning Objectives

33. The greater the uncertainty about an asset’s future benefits,
   a. the lower the discount rate investors will apply when discounting those benefits to the present.
   b. the higher the discount rate investors will apply when discounting those benefits to the present.
   c. the greater is the present value of those benefits.
   d. none of the above.

ANS: B  DIF: M  REF: 4.1 Valuation Basics

34. You will be receiving $204,000.00 at the end of each year for the next 20 years. If the correct discount rate for such a stream of cash flows is 10% then what is the present value of the cash flows?
   a. $1,736,767.00
   b. $4,080,000.00
   c. $185,454.55
   d. none of the above

ANS: A
204,000 * (1/1.1) - ((1/1.1) * (1.1)^20 = 1,736,767.00

DIF: E  REF: 4.1 Valuation Basics, The Fundamental Valuation Model

35. A bond’s coupon rate
a. equals its annual coupon payment divided by the bonds’ current market price.
b. varies during the life of the bond.
c. equals its annual coupon payment divided by its par value.
d. both a and b are correct.

ANS: C  DIF:  M  REF:  4.2 Bond Prices and Interest Rates

36. WeOweYou, Inc. has a 12 year bond outstanding that makes 9.5% annual coupon payments. If the appropriate discount rate for such a bond is 7%, what the the appropriate price for the bond?
   a. $1,200.73
   b. $1,000.00
   c. $1,198.57
   d. $754.56

ANS: C

95 ( (1/.07) - ((1/.07) x (1.07)\(^{12}\) ) ) + 1,000 (1.07)\(^{12}\) = 1,198.57

DIF:  M  REF:  4.2 Bond Prices and Interest Rates

37. WeOweEveryone, Inc. has a 12 year bond outstanding that has 9.5% coupon rate. If the appropriate discount rate for such a bond is 7%, what the the appropriate price for the semi-annual coupon paying bond?
   a. $1,200.73
   b. $1,198.57
   c. $1,000.00
   d. $762.77

ANS: A

47.50 ( (1/.035) - ((1/.035) x (1.035)\(^{24}\) ) ) + 1,000 (1.035)\(^{24}\) = 1,200.73

DIF:  M  REF:  4.2 Bond Prices and Interest Rates

38. Astro Investors is interested in purchasing the bonds of the Jetson Company. Jetson’s bonds are currently priced at $1,100.00 and have 14.5 years to maturity. If the bonds have a 6% coupon rate what is the yield-to-maturity of these semi-annual coupon paying bonds?
   a. 5.00%
   b. 5.02%
   c. 2.51%
   d. 2.50%

ANS: B

30 ( (1/y) - ((1/y) x (1+ y)\(^{29}\) ) ) + 1,000 (1 + y)\(^{29}\) = 1,100.00

y = .0251 ====> 2 x y = 5.02%

DIF:  H  REF:  4.2 Bond Prices and Interest Rates

39. Elroy Investors is interested in purchasing the bonds of the Judy Company. Judy’s bonds are currently priced at $1,100.00 and have 14 years to maturity. If the bonds have a 6% coupon rate what is the yield-to-maturity of these annual coupon paying bonds?
   a. 5.00%
   b. 4.99%
   c. 2.50%
   d. none of the above.
ANS: \( B \)
\[ 60 \left( \frac{1}{y} \right) - \left( \frac{1}{y} \times (1+y)^{14} \right) + 1,000 \left(1 + y \right)^{14} = 1,100.00 \]

\[ y = 4.99\% \]

DIF: H  
REF: 4.2 Bond Prices and Interest Rates

40. You recently earned a 13% return on an investment during the preceding year. If the rate of inflation during that period is 8% what was your real return during that period?
   a. 5%
   b. 4.63%
   c. 4.42%
   d. none of the above.

ANS: B
\[ \left( \frac{1.13}{1.08} \right) - 1 = .0463 \]

DIF: E  
REF: 4.2 Bond Prices and Interest Rates

41. You are considering the purchase of a motorized scooter where the price of the scooter is based upon the miles per gallon (mpg) of gasoline that the scooter can achieve. That is, the current price of the scooter that you want is $1,000 because the scooter can achieve 100 miles per gallon and the cost per mpg is $10. Right before you are about to purchase the scooter, your best friend requests that you loan him $1,000 for one year. You make the loan in order to be able to buy a 105 mpg scooter at the conclusion of the loan. If you anticipate that the cost per mpg will increase to $11, what rate of interest do you charge your friend?
   a. 5%
   b. 10%
   c. 15%
   d. 15.5%

ANS: D
\[ \text{real rate} = 5\%, \text{ inflation rate} = 10\% \]
\[ \left( (1.05) \times (1.1) \right) - 1 = .155 \]

DIF: H  
REF: 4.2 Bond Prices and Interest Rates

42. Unsecured bonds that have legal claims inferior to other outstanding bonds are
   a. debentures.
   b. mortgage bonds.
   c. subordinated debentures.
   d. discount bonds.

ANS: C  
DIF: E  
REF: 4.2 Bond Prices and Interest Rates

43. With respect to the company that has issued a callable bond,
   a. the value of the call increases as the stock price increases.
   b. the value of the call increases as interest rates increase.
   c. the value of the call increases as interest rates decrease.
   d. none of the above.

ANS: C  
DIF: M  
REF: 4.2 Bond Prices and Interest Rates

44. With respect to the owner of a putable bond,
a. the value of the put increases as interest rates increase.
b. the value of the put increases as interest rates decrease.
c. the value of the put increases as the value of the stock decreases.
d. none of the above.

ANS: A    DIF: M    REF: 4.2 Bond Prices and Interest Rates

45. You notice that the price of a 4.0% coupon, 12-year Treasury Note is priced at 90:16 in the Wall Street Journal. What is the bond's yield to maturity?
a. 2.56%  
b. 2.565%  
c. 5.07%  
d. 5.13%

ANS: C    DIF: H    REF: 4.2 Bond Prices and Interest Rates

90:16 = 90 + 16/32 = 90.5 ===> $905

20 ( (1/y) - ((1/y) × (1 + y)²⁴) ) + 1,000 (1 + y)²⁴ = 905

y = .02535 ===> 2 × y = 5.07%

DIF: H    REF: 4.2 Bond Prices and Interest Rates

46. You read in the financial press that a company’s Moody’s debt rating is one step above junk. What is the rating?
a. Ba1  
b. BB+  
c. Baa3  
d. BBB-

ANS: C    DIF: H    REF: 4.2 Bond Prices and Interest Rates, Bond Ratings

47. You are trying to find the correct yield spread for a Standard and Poor’s rated A+, 7-year maturity bond. You find that a 7-year maturity, AA- bond’s spread is 65 basis points while that of a 7-year maturity A bond’s spread is 80 basis points. Which of the following should be a possibility for the spread of the A+ rated bond?
a. 64 basis points  
b. 70 basis points  
c. 80 basis points  
d. both b and c are possible spreads for the bond.

ANS: B    DIF: M    REF: 4.4 Bond Markets, Bond Ratings

48. The relationship between time to maturity and yield to maturity for bonds of equal risk is referred to as
a. the term structure of interest rates.  
b. the forward rate.  
c. the spot curve.  
d. the forward curve.

ANS: A    DIF: E    REF: 4.5 Advanced Bond Valuation - The Term Structure of Interest Rates

49. You find that the yield on a 4-year bond is 10% while that of a 2-year bond is 8%. What should be the yield on a 2-year bond beginning two years from now as predicted by the expectations theory?
a. 2.00%
b. 12.04%
c. 25.25%
d. none of the above

ANS: B

\[(1.1)^4 = (1.08)^2 \times (1 + r)^2 \Rightarrow (1.1)^4 / (1.08)^2 = (1 + r)^2 \Rightarrow r = .1204\]

DIF: M

50. You find that the yield on a 6-year bond is 12% while that of a 4-year bond is 9%. What should be the yield on a 2-year bond beginning four years from now as predicted by the expectations theory?
a. 3.00%
b. 18.25%
c. 39.83%
d. none of the above

ANS: B

\[(1.12)^6 = (1.09)^4 \times (1 + r)^2 \Rightarrow (1.12)^6 / (1.09)^4 = (1 + r)^2 \Rightarrow r = .1825\]

DIF: H

51. You find that the yield on a 4-year bond is 9% while the yield on a 2-year bond beginning four years from now is 10%. What should be the yield on a 6-yr bond as predicted by the expectations theory?
a. 1.00%
b. 9.33%
c. 14.32%
d. 70.80%

ANS: B

\[(1 + r)^6 = (1.09)^4 \times (1.1)^2 \Rightarrow (1 + r)^6 = (1.7080137)^6 \Rightarrow r = .0933\]

DIF: M

52. If you were trying to describe the effect on the yield curve that certain investors have a definite preference for the maturity of the bonds that they invest in, then you would be referring to
a. the expectations theory.
b. the liquidity preference theory.
c. the preferred habitat theory.
d. none of the above.

ANS: C

DIF: M

53. Fence Place Diary Company (FPD) has a 15-year maturity bond outstanding that is currently convertible into 50 shares of FPD common stock. FPD common stock currently sells for $25 a share and the coupon rate (semi-annual coupons) for the bond is 5%. If the yield on a similarly rated convertible bond (on The New York Calendar Corp.) is 5%, then what should be the correct price of the FPD convertible bond?
a. $750.00
b. $1,000
c. $1,250
d. either a or b

ANS: C
Conversion Price: 50 * 25 = 1,250

Pure Bond Price: Coupon Rate  = Yield ====> 1,000

Max(1,000, 1,250) = 1,250

DIF:  M  REF:  4.3 Types of Bonds

54. You own a bond that pays a 12% annualized semi-annual coupon rate. The bond has 10 years to maturity. If the discount rate suddenly moves from 14% to 16%, then what is the dollar increase (decrease) in value for the bond?
   a. ($90.42)
   b. ($89.01)
   c. $89.01
   d. $90.42

ANS:  A
Price before shift: 60PVIFA(7%,20) + 1000PVIF(7%,20) = 894.06
Price after shift: 60PVIFA(8%,20) + 1000PVIF(8%,20) = 803.64
Difference: Price after shift - Price before shift = 803.64 - 894.06 = -90.42

DIF:  H  REF:  4.2 Bond Prices and Interest Rates

55. You own a bond that pays a 12% annualized semi-annual coupon rate and has 10 years to maturity. If the discount rate increases from 14% to 16% during the next two years of the bonds life, then what is the dollar increase (decrease) in value for the bond during the two year period?
   a. ($69.42)
   b. ($71.09)
   c. $69.42
   d. $71.09

ANS:  B
Price before: 60PVIFA(7%,20) + 1000PVIF(7%,20) = 894.06
Price after 2 years: 60PVIFA(8%,16) + 1000PVIF(8%,16) = 822.97
Difference: Price after 2 years - Price before = 822.97 - 894.06 = -71.09

DIF:  H  REF:  4.2 Bond Prices and Interest Rates

56. Oogle Corp. has decided to do things differently with respect to their corporate bond issue. They have a bond outstanding that makes quarterly coupon payments instead of semi-annually. The stated coupon rate on the bond is 10% and the yield to maturity on the 5-year bond is 12%. What is the price of the bond?
   a. $927.90
   b. $926.40
   c. $925.61
   d. none of the above

ANS:  C
Price : 25PVIFA(3%,20) + 1000PVIF(3%,20) = 925.61

DIF:  M  REF:  4.2 Bond Prices and Interest Rates
57. Suppose investment A and investment B have identical cash flows. Why would an investor pay more for investment A than investment B?
   a. This is incorrect. You would always pay the same amount for two investments with equal future cash flows.
   b. The risk in the cash flows for investment A is greater than the risk of the cash flows of investment B.
   c. The risk in the cash flows for investment B is greater than the risk of the cash flows of investment A.
   d. The return required for investment B is lower than the return required for investment A.

   ANS: C     DIF: E     REF: 4.1 Valuation Basics

58. A bond pays an annual coupon rate of 7% with a face value of $1,000. The bond is scheduled to mature in two years and currently trades at $920.00. What is the coupon yield of the bond currently?
   a. 7.00%
   b. 7.61%
   c. 14.00%
   d. 15.22%

   ANS: B
   7%*$1000/$920 = 7.61%

   DIF: E     REF: 4.2 Bond Prices and Interest Rates

59. Consider the following details for a bond issued by Bravo Incorporated.

   | Issue Date   | 8/5/2000 |
   | Maturity Date| 8/5/2030 |
   | Coupon Rate (annual coupons)| 9% |
   | Face Value   | $1,000   |

   Suppose that today’s date is 8/5/2004, what should the current trading price be for this bond if investors want a 12% annual return?
   a. $658.09
   b. $763.13
   c. $908.88
   d. $1,000.00

   ANS: B
   n = 26, r = 12%, PV =?, PMT = 9%*1000, FV = $1000
   PV = $763.13

   DIF: M     REF: 4.2 Bond Prices and Interest Rates

60. Consider the following details for a bond issued by Bravo Incorporated.

   | Issue Date   | 8/5/2000 |
   | Maturity Date| 8/5/2030 |
   | Annual Coupon Rate (semi-annual coupons)| 9% |
   | Face Value   | $1,000   |

   Suppose that today’s date is 8/5/2004, what should the current trading price be for this bond if investors want a 12% annual return?
a. $762.08  
b. $763.13  
c. $906.85  
d. $1,000.00  

ANS: A  
n' = 52, r' = 6%, PV =? , PMT = 9%*1000/2, FV = $1000  
PV = $762.08  

DIF: M  
REF: 4.2 Bond Prices and Interest Rates

61. Which answer is FALSE regarding bond prices and interest rates?  
a. Bond prices and interest rates move in opposite directions.  
b. The price of a bond is the present value of the coupon payments and the face value.  
c. The prices of short-term bonds display greater price sensitivity to interest rate changes than do the prices of long-term bonds.  
d. Interest rate risk can be described as the risk that changes in market interest rates will cause fluctuations in the bond’s price.  

ANS: C  

DIF: M  
REF: 4.2 Bond Prices and Interest Rates

62. A bond is priced such that it has a 9% yield to maturity. However, inflation is expected to be 2% per year over the remaining life of the bond. What is the real return for this investment?  
a. 4.50%  
b. 6.86%  
c. 7.00%  
d. 9.00%  

ANS: B  
1 + real return = (1.09)/(1.02)  

DIF: M  
REF: 4.2 Bond Prices and Interest Rates

63. A bond issued by the Federal Home Loan Bank or the Federal Home Loan Mortgage Corporation are examples of what type of bond?  
a. Treasury bond  
b. Corporate bond  
c. Municipal bond  
d. Agency bond  

ANS: D  

DIF: E  
REF: 4.3 Types of Bonds

64. The Treasury Department sells a zero-coupon bond that will mature in two years. The bond has a face value of $10,000, and sold at auction for $9,400. What is the annual return for an investor buying the bond?  
a. 3.00%  
b. 3.14%  
c. 6.38%  
d. 7.00%  

ANS: B  
n = 2, r = YTM = ?, PV = -$9400, PMT = 0, FV = $10,000  
r = 3.14%
65. A bond is trading on the secondary market and will mature in 10 years. The bond has a face value of $1,000 that will be paid at maturity. Further, the bond pays an annual coupon at 9% of face value. What should the trading price be for the bond if investors seek a 12% on their investment?
   a. $1,192.53
   b. $830.49
   c. $827.95
   d. $508.52

ANS: B

66. Which type of bond has the highest daily trading volume in our economy?
   a. Treasury bonds
   b. Agency bonds
   c. Corporate bonds
   d. Municipal bonds

ANS: A

67. A bond currently trades at $975 on the secondary market. The bond has 10 years until maturity and pays an annual coupon at 9% of face value. The face value of the bond is $1,000. What is the yield to maturity for this bond?
   a. 8.86%
   b. 9.00%
   c. 9.23%
   d. 9.40%

ANS: D

68. A bond currently trades at $980 on the secondary market. The bond has 10 years until maturity and pays a semi-annual coupon at 9% APR of face value. The face value of the bond is $1,000. What is the yield to maturity for this bond?
   a. 9.00%
   b. 9.18%
   c. 9.25%
   d. 9.31%

ANS: D
69. A bond currently trades at $975 on the secondary market. The bond has 10 years until maturity and pays an annual coupon at 9% of face value. The face value of the bond is $1,000. What is the coupon yield for this bond?
   a. 8.86%
   b. 9.00%
   c. 9.23%
   d. 9.40%

   ANS: C
   $90/975 = 9.23%

   DIF: E      REF: 4.4 Bond Markets

Exhibit 4-1
In the financial section of your local paper, you see the following bond quotation:

<table>
<thead>
<tr>
<th>Company</th>
<th>RATE</th>
<th>MATURITY MO/YR</th>
<th>BID</th>
<th>ASK</th>
<th>CHG</th>
<th>ASK YLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIG CITY</td>
<td>7.00%</td>
<td>Aug 12</td>
<td>104:07</td>
<td>104:08</td>
<td>2</td>
<td>?????</td>
</tr>
</tbody>
</table>

NARRBEGIN: Exhibit 4-1

70. Given Exhibit 4-1, what is the current ask yield of the Big City bond? Assume that today’s date is August, 2004.
   a. 6.14%
   b. 6.31%
   c. 6.58%
   d. 6.73%

   ANS: B
   \[ N = 8, r = ?, PV = -1042.50, PMT = 70, FV = 1000 \]
   \[ r' = 6.31\% \]

   DIF: H      REF: 4.4 Bond Markets

71. Given Exhibit 4-1, what is the current coupon yield of the Big City bond? Assume that today’s date is August, 2004.
   a. 6.14%
   b. 6.34%
   c. 6.58%
   d. 6.71%

   ANS: D
   \[ 70/1042.50 \]

   DIF: H      REF: 4.4 Bond Markets

72. What is the minimum rating required for a bond to be considered investment grade?
   a. AA
   b. A
   c. BBB
   d. BB

   ANS: C      DIF: E      REF: 4.4 Bond Markets
73. Your friend wants you to invest in his new sporting goods store. For an initial investment, he will pay you $2,000 per year for the next twenty years. All payments are at the end of the year. You realize that this is a very risky investment and want a 20% return on each invested dollar. How much are you willing to loan him today for his new store?
   a. $5,946  
   b. $9,739  
   c. $10,000  
   d. $17,027  

ANS: B  

\[ n = 20, \ r = 20\%, \ PV = ?, \ PMT = \$2,000, \ FV = \$0 \]  
\[ PV = \$9,739 \]  

DIF: M  
REF: 4.1 Valuation Basics

74. A $1,000 par value bond makes two coupon payments per year of $60 each. What is the bonds yield to maturity if the bond currently trades at $1,200 and will mature in two years?
   a. 1.78%  
   b. 3.48%  
   c. 6.00%  
   d. 6.43%  

ANS: A  

\[ n' = 4, \ r' = \text{YTM}/2, \ PV = -$1,200, \ FV = $1,000, \ PMT = $60 \]  
\[ r' = 0.888\% \]  
\[ \text{YTM} = 1.78\% \]  

DIF: H  
REF: 4.2 Bond Prices and Interest Rates

75. A one-year Treasury security currently returns a 4.50% yield to maturity. A two-year Treasury security offers a 4.80% yield to maturity. If the expectations hypothesis is true, what is the expected return on a one-year security next year?
   a. 4.80%  
   b. 4.90%  
   c. 5.00%  
   d. 5.10%  

ANS: D  

\[ (1.045) \ast (1+x) = (1.048) \ast (1.048) \]  

DIF: H  
REF: 4.5 Advanced Bond Valuation

76. A TIPS bond issued by the Treasury Department was issued with an annual coupon of 5%. The bond has a par value of $1,000 and will mature in 10 years. Suppose that inflation during the first year of the bond’s life was 3%. What is the new coupon payment for this bond?
   a. $50.97  
   b. $51.50  
   c. $53.00  
   d. $81.50  

ANS: B  

\[ 5\% \ast 1000 = \$50 \]  
\[ \$50 \ast (1+.03) = \$51.50 \]
77. Suppose you have a chance to buy a Treasury strip. The strip is from a government bond with a 6% coupon rate (face value of $1,000). You will receive this strip in one year and have a discount rate of 10%. What is the price you are willing to pay for this strip?
   a. $36.87
   b. $54.55
   c. $60.00
   d. $94.34
   ANS: B
   
   \[6\% \times 1000 = \$60\]
   \[PV = \$60/1.10\]

78. Refer to EarthCOM. The risk associated with EarthCOM bonds has increased dramatically, as investors now want a 15% APR return to hold the bonds. What price should the bonds trade at TODAY (October 4th, 2004)?
   a. $544.19
   b. $545.66
   c. $794.99
   d. $800.15
   ANS: A
   
   \[n' = 26, \ r' = 7.50\%, \ PV = ?, \ PMT = 8\% \times 1000/2 = \$40, \ FV = \$1,000\]
   \[PV = \$544.19\]

79. Refer to EarthCOM. Suppose that today (October 4th, 2002), EarthCOM admits to fraud in reporting revenues over the last 3 years. The price of EarthCOM immediately tumbles to $500. What is the new yield-to-maturity on EarthCOM bonds? (Express as an APR)
   a. 16.04%
   b. 16.21%
   c. 18.12%
   d. 20.77%
   ANS: B
   
   \[n' = 52, \ r' = \text{YTM}/2, \ PV = -\$500, \ PMT = 8\% \times 1000/2 = \$40, \ FV = \$1,000\]
   \[r' = 8.104\%\]
   \[\text{YTM} = 16.21\%\]

80. Which of the following statements are CORRECT?
Statement I: A change in a bond’s interest rate risk has a greater price impact on bonds with longer maturities.

Statement II: Government bonds have lower default risk than corporate bonds or municipal bonds.

Statement III: Trading volume is greater for corporate bonds than government bonds.

a. Statement I only
b. Statement II only
c. Statements I and II only
d. Statements II and III only

ANS: C DIF: M REF: 4.2 Bond Prices and Interest Rates

81. A bond pays $60 interest payments twice a year. What is the coupon rate for the bond if the par value of the bond is $1,000?

a. 6.00%
b. 9.00%
c. 12.00%
d. 15.00%

ANS: C

$60 * 2 = $120

$120/$1,000 = .12

DIF: E REF: 4.1 Valuation Basics