Question #1 of 143

The six-year spot rate is 7% and the five-year spot rate is 6%. The implied one-year forward rate five years from now is *closest to:*

A) 12.0%.

B) 5.0%.

C) 6.5%.

Explanation

$_5y_1y = [(1 + S_6)^6 / (1 + S_5)^5] - 1 = [(1.07)^6/(1.06)^5] - 1 = [1.5 / 1.338] - 1 = 0.12$

(Study Session 16, Module 52.4, LOS 52.h)

Question #2 of 143

Given that the one-year spot rate is 5.76% and the 1.5-year spot rate is 6.11%, assuming semiannual compounding what is the six-month forward rate starting one year from now?

A) 6.81%.

B) 6.97%.

C) 7.04%.

Explanation

The forward rate is computed as follows:

$$\text{Forward rate}_{1,1.5} = 2 \times \left(\frac{\left(1 + \frac{\text{spot rate}_{0,1.5}}{2}\right)^3}{\left(1 + \frac{\text{spot rate}_{0,1}}{2}\right)^2} - 1 \right) = 2 \times \left(\frac{\left(1 + \frac{0.0611}{2}\right)^3}{\left(1 + \frac{0.0576}{2}\right)^2} - 1 \right) = 6.81\%$$

(Study Session 16, Module 52.4, LOS 52.h)

Question #3 of 143

Ron Logan, CFA, is a bond manager. He purchased $50 million in 6.0% coupon Southwest Manufacturing bonds at par three years ago. Today, the bonds are priced to yield 6.85%. The bonds mature in nine years. The Southwest bonds are trading at a:

A) discount, and the yield to maturity has decreased since purchase.

B) discount, and the yield to maturity has increased since purchase.

C) premium, and the yield to maturity has decreased since purchase.

Explanation

The yield on the bonds has increased, indicating that the value of the bonds has fallen below par. The bonds are therefore trading at a discount. If a bond is selling at a discount, the bond's current price is lower than its par value and the bond's YTM is higher than the coupon rate. Since Logan bought the bonds at par (coupon = YTM = 6%), the YTM has increased.

(Study Session 16, Module 52.1, LOS 52.b)

Question #4 of 143

Randy Harris is contemplating whether to add a bond to his portfolio. It is a semiannual, 6.5% bond with 7 years to maturity. He is concerned about the change in value due to interest rate fluctuations and would like to know the bond's value given various scenarios. At a yield to maturity of 7.5% or 5.0%, the bond's fair value is *closest* to:

	7.5%	5.0%	
A)	1,032.67	959.43	✗
B)	946.30	1,087.68	✓
C)	974.03	1,052.36	✗

Explanation

Given a YTM of 7.5%, calculate the value of the bond as follows:

N = 14; I/Y = 7.5/2 = 3.75%; PMT = 32.50; FV = 1,000; CPT → PV = 946.30

Given a YTM of 5.0%, calculate the value of the bond as follows:

N = 14; I/Y = 5/2 = 2.5%; PMT = 32.50; FV = 1,000; CPT → PV = 1,087.68

(Study Session 16, Module 52.1, LOS 52.a)

Question #5 of 143

Using the following spot rates, what is the price of a three-year bond with annual coupon payments of 5%?

- One-year rate: 4.78%
- Two-year rate: 5.56%
- Three-year rate: 5.98%

A) $93.27. ✗

B) $98.87. ✗

C) $97.47. ✓

Explanation

The bond price is computed as follows:

$$\text{Bond price} = (5 / 1.0478) + (5 / 1.0556^2) + (105 / 1.0598^3) = \$97.47$$

(Study Session 16, Module 52.2, LOS 52.c)

Question #6 of 143

A 20-year bond with a par value of $1,000 and an annual coupon rate of 6% currently trades at $850. It has a yield to maturity of:

A) 7.5%. ✓

B) 7.9%. ✗

C) 6.8%. ✗

Explanation

N = 20; FV = 1,000; PMT = 60; PV = -850; CPT → I = 7.5

(Study Session 16, Module 52.3, LOS 52.f)

Question #7 of 143

Georgia Corporation has $1,000 par value bonds with 10 years remaining maturity. The bonds carry a 7.5% coupon that is paid semi-annually. If the current yield to maturity on similar bonds is 8.2%, what is the current value of the bonds?

A) $569.52. ✗

B) $952.85. ✓

C) $1,123.89. ✗

Explanation

The coupon payment each six months is ($1,000)(0.075 / 2) = $37.50. To value the bond, enter FV = $1,000; PMT = $37.50; N = 10 × 2 = 20; I/Y = 8.2 / 2 = 4.1%; CPT → PV = –952.85.

(Study Session 16, Module 52.1, LOS 52.a)

Question #8 of 143

What is the yield to maturity (YTM) on a semiannual-bond basis of a 20-year, U.S. zero-coupon bond selling for $300?

A) 6.11%. ✓

B) 3.06%. ✗

C) 7.20%. ✗

Explanation

N = 40; PV = –300; FV = 1,000; CPT → I = 3.055 × 2 = 6.11.

(Study Session 16, Module 52.3, LOS 52.f)

Question #9 of 143

A bond-equivalent yield for a money market instrument is a(n):

A) add-on yield based on a 365-day year. ✓

B) discount yield based on a 365-day year. ✗

C) discount yield based on a 360-day year. ✗

Explanation

A bond-equivalent yield is an add-on yield based on a 365-day year.

(Study Session 16, Module 52.3, LOS 52.f)

Question #10 of 143

Harmon Moving has a 13.25% coupon semiannual coupon bond currently trading in the market at $1,229.50. The bond has eight years remaining until maturity, but only two years until first call on the issue at 107.50% of $1,000 par value. Which of the following is *closest* to the yield to first call on the bond?

A) 9.14%. ✗

B) 5.16%. ✗

C) 4.72%. ✓

Explanation

To compute yield to first call, enter: FV = $1,075; N = 2 × 2 = 4; PMT = $66.25; PV = –1,229.50, CPT → I/Y = 2.36%, annualized as (2.36)(2) = 4.72%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #11 of 143

Find the yield to maturity of a 6% coupon bond, priced at $1,115.00. The bond has 10 years to maturity and pays semi-annual coupon payments.

A) 5.87%. ✗

B) 8.07%. ✗

C) 4.56%. ✓

Explanation

N = 10 × 2 = 20; PV = -1,115.00; PMT = 60/2 = 30; FV = 1,000.

Compute I = 2.28 (semiannual) × 2 = 4.56%

(Study Session 16, Module 52.3, LOS 52.f)

Question #12 of 143

Other things equal, for option-free bonds:

A) the value of a low-coupon bond is less sensitive to interest rate changes than the value of a high-coupon bond.

B) a bond's value is more sensitive to yield increases than to yield decreases.

C) the value of a long-term bond is more sensitive to interest rate changes than the value of a short-term bond.

Explanation

Long-term, low-coupon bonds are more sensitive than short-term and high-coupon bonds. Prices are more sensitive to rate decreases than to rate increases (duration rises as yields fall).

(Study Session 16, Module 52.1, LOS 52.b)

Question #13 of 143

A zero-coupon bond matures three years from today, has a par value of $1,000 and a yield to maturity of 8.5% (assuming semi-annual compounding). What is the current value of this issue?

A) $78.29.

B) $779.01.

C) $782.91.

Explanation

The value of the bond is computed as follows:

Bond Value = $1,000 / 1.0425^6 = $779.01.

N = 6; I/Y = 4.25; PMT = 0; FV = 1,000; CPT → PV = 779.01.

(Study Session 16, Module 52.1, LOS 52.a)

Question #14 of 143

In the context of bonds, accrued interest:

A) equals interest earned from the previous coupon to the sale date.

B) is discounted along with other cash flows to arrive at the dirty, or full price.

C) covers the part of the next coupon payment not earned by seller.

Explanation

This is a correct definition of accrued interest on bonds.

The other choices are false. Accrued interest *is not discounted* when calculating the price of the bond. The statement, "covers the part of the next coupon payment not earned by seller," should read, "...not earned by *buyer*."

(Study Session 16, Module 52.2, LOS 52.d)

Question #15 of 143

A 6-year annual interest coupon bond was purchased one year ago. The coupon rate is 10% and par value is $1,000. At the time the bond was bought, the yield to maturity (YTM) was 8%. If the bond is sold after receiving the first interest payment and the bond's yield to maturity had changed to 7%, the annual total rate of return on holding the bond for that year would have been:

A) 8.00%.

B) 11.95%.

C) 7.00%.

Explanation

Price 1 year ago N = 6, PMT = 100, FV = 1,000, I = 8, Compute PV = 1,092

Price now N = 5, PMT = 100, FV = 1,000, I = 7, Compute PV = 1,123

% Return = (1,123.00 + 100 – 1,092.46)/1,092.46 × 100 = 11.95%

(Study Session 16, Module 52.3, LOS 52.f)

Question #16 of 143

Assume that a callable bond's call period starts two years from now with a call price of $102.50. Also assume that the bond pays an annual coupon of 6% and the term structure is flat at 5.5%. Which of the following is the price of the bond assuming that it is called on the first call date?

A) $100.00.

B) $102.50.

C) $103.17.

Explanation

The bond price is computed as follows:

$$\text{Bond price} = 6/1.055 + (102.50 + 6)/1.055^2 = \$103.17$$

(Study Session 16, Module 52.2, LOS 52.c)

Question #17 of 143

A 20-year, 9% semi-annual coupon bond selling for $914.20 offers a yield to maturity of:

A) 8%

B) 10%.

C) 9%.

Explanation

N = 40; PMT = 45; PV = -914.20; FV = 1,000; CPT → I/Y = 5%

YTM = 5% × 2 = 10%

(Study Session 16, Module 52.3, LOS 52.f)

Question #18 of 143

A coupon bond pays annual interest, has a par value of $1,000, matures in 4 years, has a coupon rate of $100, and a yield to maturity of 12%. The current yield on this bond is:

A) 9.50%.

B) 11.25%.

C) 10.65%.

Explanation

FV = 1,000; N = 4; PMT = 100; I = 12; CPT → PV = 939.25.

Current yield = coupon / current price

100 / 939.25 × 100 = 10.65

(Study Session 16, Module 52.3, LOS 52.f)

Question #19 of 143

A 10-year, $1,000 face value 8% semi-annual coupon bond is priced at $950. Which of the following statements about this bond is *most accurate*?

A) The bond is selling at a discount.

B) The current market required rate is less than the coupon rate.

C) The bond is selling at a premium.

Explanation

When the issue price is less than par, the bond is selling at a discount.

We also know that the *current market required rate is greater than the coupon rate* because the bond is selling at a discount.

(Study Session 16, Module 52.1, LOS 52.b)

Question #20 of 143

Which of the following adjustments is *most likely* to be made to the day count convention when calculating corporate bond yield spreads to government bond yields?

A) Adjust both the corporate and government bond yields to actual months and years.

B) Adjust the government bond yield to actual months and years.

C) Adjust the corporate bond yield to actual months and years. ✓

Explanation

Corporate bond yields are typically based on a 30/360 day count. When calculating spreads, corporate yields are often restated to the actual/actual basis typically used to state government bond yields.

(Study Session 16, Module 52.3, LOS 52.f)

Question #21 of 143

A 20-year, 9% semi-annual coupon bond selling for $1,000 offers a yield to maturity of:

A) 9%. ✓

B) 11%. ✗

C) 10%. ✗

Explanation

N = (20 × 2) = 40

pmt = 90/2 = 45

PV = -1000

FV = 1000

cpt i = 4.5 × 2 = 9%

(Study Session 16, Module 52.3, LOS 52.f)

Question #22 of 143

The arbitrage-free bond valuation approach can *best* be described as the:

A) use of a single discount factor. ✗

B) geometric average of the spot interest rates. ✗

C) use of a series of spot interest rates that reflect the current term structure. ✓

Explanation

The use of multiple discount rates (i.e., a series of spot rates that reflect the current term structure) will result in more accurate bond pricing and in so doing, will eliminate any meaningful arbitrage opportunities. That is why the use of a series of spot rates to discount bond cash flows is considered to be an arbitrage-free valuation procedure.

(Study Session 16, Module 52.2, LOS 52.c)

Question #23 of 143

Neuman Company has bonds outstanding with five years to maturity that trade at a spread of +240 basis points above the five-year government bond yield. Neuman also has five-year bonds outstanding that are identical in all respects except that they are convertible into 30 shares of Neuman common stock. At which of the following spreads are the convertible bonds *most likely* to trade?

A) +270 basis points.

B) +210 basis points.

C) +330 basis points.

Explanation

Because a conversion option is favorable for the bondholder, the convertible bonds should trade at a lower spread than otherwise identical non-convertible bonds.

(Study Session 16, Module 52.5, LOS 52.i)

Question #24 of 143

A 2-year option-free bond (par value of $1,000) has an annual coupon of 6%. An investor determines that the spot rate of year 1 is 5% and the year 2 spot rate is 8%. Using the arbitrage-free valuation approach, the bond price is *closest* to:

A) $966.

B) $1,039.

C) $992.

Explanation

The arbitrage free valuation approach is the process of valuing a fixed income instrument as a portfolio of zero coupon bonds. We can calculate the price of the bond by discounting each of the annual payments by the appropriate spot rate and finding the sum of the present values. Bond price = [60 / (1.05)] + [1,060 / $(1.08)^2$] = $966. Or, in keeping with the notion that each cash flow is a separate bond, sum the following transactions on your financial calculator:

N = 1; I/Y = 5.0; PMT = 0; FV = 60; CPT → PV = 57.14

N = 2; I/Y = 8.0; PMT = 0; FV = 1,060; CPT → PV = 908.78

Price = 57.14 + 908.78 = $966.

(Study Session 16, Module 52.2, LOS 52.c)

Question #25 of 143

Assume a bond's quoted price is 105.22 and the accrued interest is $3.54. The bond has a par value of $100. What is the bond's *clean* price?

A) $108.76.

B) $105.22.

C) $103.54.

Explanation

The clean price is the bond price without the accrued interest so it is equal to the quoted price.

(Study Session 16, Module 52.2, LOS 52.d)

Question #26 of 143

A 10% coupon bond, annual payments, maturing in 10 years, is expected to make all coupon payments, but to pay only 50% of par value at maturity. What is the expected yield on this bond if the bond is purchased for $975?

A) 6.68%.

B) 8.68%.

C) 10.68%.

Explanation

PMT = 100; N = 10; FV = 500; PV = -975; CPT → I = 6.68

(Study Session 16, Module 52.3, LOS 52.f)

Question #27 of 143

Which of the following describes the yield to worst? The:

A) lowest of all possible yields to call.

B) yield given default on the bond.

C) lowest of all possible prices on the bond.

Explanation

Yield to worst involves the calculation of yield to call for every possible call date, and determining which of these results in the lowest expected return.

(Study Session 16, Module 52.3, LOS 52.f)

Question #28 of 143

What is the value of a 10-year, semi-annual, 8% coupon bond with a $1,000 face value if similar bonds are now yielding 10%?

A) $1,000.00.

B) $1,373.87.

C) $875.38.

Explanation

Using the financial calculator: N = 10 × 2 = 20; PMT = $80/2 = $40; I/Y = 10/2 = 5%; FV = $1,000; Compute the bond's value PV = $875.38.

(Study Session 16, Module 52.1, LOS 52.a)

Question #29 of 143

An investor purchased a 6-year annual interest coupon bond one year ago. The coupon rate of interest was 10% and par value was $1,000. At the time she purchased the bond, the yield to maturity was 8%. The amount paid for this bond one year ago was:

A) $1,125.53.

B) $1,092.46.

C) $1,198.07.

Explanation

N = 6

PMT = (0.10)(1,000) = 100

I = 8

FV = 1,000

CPT = ?

PV = 1,092.46

(Study Session 16, Module 52.1, LOS 52.a)

Question #30 of 143

If the current two-year spot rate is 6% while the one-year forward rate for one year is 5%, what is the current spot rate for one year?

A) 5.0%.

B) 5.5%.

C) 7.0%.

Explanation

$(1 + 1_y1_y)(1 + s_1) = (1 + s_2)^2$

$(1 + 0.05)(1 + s_1) = (1 + 0.06)^2$

$(1 + s_1) = (1.06)^2 / (1 + 0.05)$

$1 + s_1 = 1.1236 / 1.05$

$1 + s_1 = 1.0701$

$s_1 = 0.07$ or 7%

(Study Session 16, Module 52.4, LOS 52.h)

Question #31 of 143

A coupon bond that pays interest semi-annually has a par value of $1,000, matures in 5 years, and has a yield to maturity of 10%. What is the value of the bond today if the coupon rate is 8%?

A) $922.78.

B) $1,144.31.

C) $1,221.17.

Explanation

FV = 1,000; N = 10; PMT = 40; I = 5; CPT → PV = 922.78.

(Study Session 16, Module 52.1, LOS 52.a)

Question #32 of 143

What is the current yield for a 5% three-year bond whose price is $93.19?

A) 5.00%.

B) 2.68%.

C) 5.37%.

Explanation

The current yield is computed as follows:

Current yield = 5% x 100 / $93.19 = 5.37%

(Study Session 16, Module 52.3, LOS 52.f)

Question #33 of 143

Interest rates have fallen over the seven years since a $1,000 par, 10-year bond was issued with a coupon of 7%. What is the present value of this bond if the required rate of return is currently four and one-half percent? (For simplicity, assume annual payments.)

A) $1,044.33.

B) $1,052.17.

C) $1,068.72

Explanation

Each of the remaining cash flows on the bond is discounted at the annual rate of 4.5%.

Period	Payment	Discount	PV
1	$1,000 × 7% = $70	$(1.045)_1$	$ 66.99
2	$1,000 × 7% = $70	$(1.045)_2$	$ 64.10
3	$1,000 × 7% = $70	$(1.045)_3$	$ 61.34
3	$1,000 principal	$(1.045)_3$	$ 876.30
Total Present Value of Cash Flows			**$1,068.73**

The present value can also be determined with a financial calculator. N = 3, I = 4.5%, PMT = $1,000 × 7%, FV = $1,000. Solve for PV = $1,068.724.

(Study Session 16, Module 52.1, LOS 52.a)

Question #34 of 143

Suppose the 3-year spot rate is 12.1% and the 2-year spot rate is 11.3%. Which of the following statements concerning forward and spot rates is *most* accurate? The 1-year:

A) forward rate two years from today is 13.7%.

B) forward rate two years from today is 13.2%.

C) forward rate one year from today is 13.7%.

Explanation

The equation for the three-year spot rate, S_3, is $(1 + S_1)(1 + {}_1y_1y)(1 + {}_2y_1y) = (1 + S_3)^3$. Also, $(1 + S_1)(1 + {}_1y_1y) = (1 + S_2)^2$. So, $(1 + {}_2y_1y) = (1 + S_3)^3 / (1 + S_2)^2$, computed as: $(1 + 0.121)^3 / (1 + 0.113)^2 = 1.137$. Thus, ${}_2y_1y = 0.137$, or 13.7%.

(Study Session 16, Module 52.4, LOS 52.h)

Question #35 of 143

Consider a bond selling for $1,150. This bond has 28 years to maturity, pays a 12% annual coupon, and is callable in 8 years for $1,100. The yield to call is *closest to*:

A) 10.05%.

B) 10.55%.

C) 9.25%.

Explanation

N = 8; PMT = 120; PV = -1,150; FV = 1,100; CPT I/Y = 10.0554.

(Study Session 16, Module 52.3, LOS 52.f)

Question #36 of 143

If the required margin on a floating rate note is greater than the quoted margin, it is *most likely* that the:

A) reference rate on the FRN has increased. ✗

B) bond will be priced above par at the reset date. ✗

C) credit quality of the FRN has decreased. ✓

Explanation

If the required margin is greater than the quoted margin, the credit quality of the bond must have decreased and the bond will be priced below par at the reset date.

(Study Session 16, Module 52.3, LOS 52.f)

Question #37 of 143

An investor gathered the following information about two 7% annual-pay, option-free bonds:

- Bond R has 4 years to maturity and is priced to yield 6%
- Bond S has 7 years to maturity and is priced to yield 6%
- Both bonds have a par value of $1,000.

Given a 50 basis point parallel upward shift in interest rates, what is the value of the two-bond portfolio?

A) $2,044. ✓

B) $2,030. ✗

C) $2,086. ✗

Explanation

Given the shift in interest rates, Bond R has a new value of $1,017 (N = 4; PMT = 70; FV = 1,000; I/Y = 6.50%; CPT → PV = 1,017). Bond S's new value is $1,027 (N = 7; PMT = 70; FV = 1,000; I/Y = 6.50%; CPT → PV = 1,027). After the increase in interest rates, the new value of the two-bond portfolio is $2,044 (1,017 + 1,027).

(Study Session 16, Module 52.1, LOS 52.a)

Question #38 of 143

Using the following spot rates for pricing the bond, what is the present value of a three-year security that pays a fixed annual coupon of 6%?

- Year 1: 5.0%
- Year 2: 5.5%
- Year 3: 6.0%

A) 102.46. ✗

B) 100.10. ✓

C) 95.07. ✗

Explanation

This value is computed as follows:

$$\text{Present Value} = 6/1.05 + 6/1.055^2 + 106/1.06^3 = 100.10$$

The value 95.07 results if the coupon payment at maturity of the bond is neglected.

(Study Session 16, Module 52.2, LOS 52.c)

Question #39 of 143

The 3-year spot rate is 10%, and the 4-year spot rate is 10.5%. What is the 1-year forward rate 3 years from now?

A) 10.0%.

B) 11.0%.

C) 12.0%.

Explanation

$[(1 + S_4)^4 / (1 + S_3)^3] - 1 = 12.01\% = 12\%$.

(Study Session 16, Module 52.4, LOS 52.h)

Question #40 of 143

What is the present value, stated as a percentage of par, of a three-year security that pays a fixed annual coupon of 6% using a discount rate of 7%?

A) 92.48.

B) 97.38.

C) 100.00.

Explanation

This value is computed as follows:

$$\text{Present Value} = 6/1.07 + 6/1.07^2 + 106/1.07^3 = 97.38$$

The value 92.48 results if the coupon payment at maturity of the bond is neglected. The coupon rate and the discount rate are not equal so 100.00 cannot be the correct answer.

(Study Session 16, Module 52.1, LOS 52.a)

Question #41 of 143

Tony Ly is a Treasury Manager with Deeter Holdings, a large consumer products holding company. The Assistant Treasurer has asked Ly to calculate the current yield and the Yield-to-first Call on a bond the company holds that has the following characteristics:

- 7 years to maturity
- $1,000 face value
- 7.0% semi-annual coupon
- Priced to yield 9.0%
- Callable at $1,060 in two years

If Ly calculates correctly, the current yield and yield to call are approximately:

	CY	YTC	
A)	7.80%	15.72%	✗
B)	7.78%	15.82%	✗
C)	7.80%	15.82%	✓

Explanation

To calculate the CY and YTC, we first need to calculate the present value of the bond: FV = **1,000**, N = **14** = 7 × 2, PMT = **35** = (1000 × 0.07)/2, I/Y = **4.5** (9 / 2), Compute PV = -897.77 (negative sign because we entered the FV and payment as positive numbers).

Then, CY = (Face value × Coupon) / PV of bond = (1,000 × 0.07) / 897.77 = **7.80%.**

And finally, YTC calculation: FV = **1,060** (price at first call), N = **4** (2 × 2), PMT = **35** (same as above), PV = -897.77 (negative sign because we entered the FV and payment as positive numbers), Compute I/Y = 7.91 (semi-annual rate, need to multiply by 2) = **15.82%.**

(Study Session 16, Module 52.3, LOS 52.f)

Question #42 of 143

A coupon bond which pays interest $100 annually has a par value of $1,000, matures in 5 years, and is selling today at a $72 discount from par value. The yield to maturity on this bond is:

A) 12.00%. ✓

B) 7.00%. ✗

C) 8.33%. ✗

Explanation

PMT = 100

FV = 1,000

N = 5

PV = 1,000 – 72 = 928

compute I = 11.997% or 12.00%

(Study Session 16, Module 52.3, LOS 52.f)

Question #43 of 143

PG&E has a bond outstanding with a 7% semiannual coupon that is currently priced at $779.25. The bond has remaining maturity of 10 years but has a first put date in 4 years at the par value of $1,000. Which of the following is *closest* to the yield to first put on the bond?

A) 14.46%.

B) 7.73%.

C) 14.92%.

Explanation

To compute yield to first put, enter: FV = $1,000; N = 2 × 4 = 8; PMT = $35; PV = -$779.25; CPT → I/Y = 7.23%, annualized as (7.23)(2) = 14.46%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #44 of 143

What value would an investor place on a 20-year, 10% annual coupon bond, if the investor required a 10% rate of return?

A) $1,000.

B) $920.

C) $1,104.

Explanation

N = 20; I/Y = 10; PMT= 100; FV = 1,000; CPT → PV = 1,000

(Study Session 16, Module 52.1, LOS 52.a)

Question #45 of 143

A fixed coupon callable bond issued by Protohype Inc. is trading with a yield to maturity of 6.4%. Compared to this YTM, the bond's option-adjusted yield will be:

A) lower.

B) the same.

C) higher.

Explanation

The option-adjusted yield is the yield a bond with an embedded option would have if it were option-free. For a callable bond, the option-adjusted yield is lower than the YTM. This is because the call option may be exercised by the issuer, rather than the bondholder. Bond investors require a higher yield to invest in a callable bond than they would require on an otherwise identical option-free bond.

(Study Session 16, Module 52.3, LOS 52.f)

Question #46 of 143

Given the one-year spot rate $S_1 = 0.06$ and the implied 1-year forward rates one, two, and three years from now of: $_1y_1 = 0.062$; $_2y_1 = 0.063$; $_3y_1 = 0.065$, what is the theoretical 4-year spot rate?

A) 6.25%.

B) 6.00%.

C) 6.75%.

Explanation

$S_4 = [\ (1.06)\ (1.062)\ (1.063)\ (1.065)\ ]^{.25} - 1 = 6.25\%$.

(Study Session 16, Module 52.4, LOS 52.h)

Question #47 of 143

An interpolated spread (I-spread) for a bond is a yield spread relative to:

A) benchmark spot rates.

B) swap rates.

C) risk-free bond yields.

Explanation

Spreads relative to swap rates are referred to as Interpolated or I-spreads.

(Study Session 16, Module 52.5, LOS 52.i)

Question #48 of 143

Whitetail Company issues 73-day commercial paper that will pay $1,004 at maturity per $1,000 face value. The bond-equivalent yield is *closest to*:

A) 1.97%.

B) 2.00%.

C) 2.02%.

Explanation

The add-on yield for the 73-day holding period is $1,004 / $1,000 – 1 = 0.4%. The bond-equivalent yield, which is an add-on yield based on a 365-day year, is (365 / 73) × 0.4% = 2.0%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #49 of 143

McClintock 8% coupon bonds maturing in 10 years are currently trading at 97.55. These bonds are option-free and pay coupons semiannually. The McClintock bonds have a:

A) current yield less than 8.0%.

B) true yield greater than the street convention.

C) yield to maturity greater than 8.0%.

Explanation

A bond trading at a discount will have a YTM greater than its coupon. The current yield is 8 / 97.55 = 8.2%. True yield is adjusted for payments delayed by weekends and holidays and is equal to or slightly less than the yield on a street convention basis.

(Study Session 16, Module 52.3, LOS 52.f)

Question #50 of 143

What is the probable change in price of a 30-year semiannual 6.5% coupon, $1000 par value bond yielding 8% if the yield decreases to 7%?

A) $98.83.

B) $107.31.

C) $106.34.

Explanation

Price at 8% is N = 60, FV = $1,000, I = 4%, PMT = $32.50, CPT PV = $830.32; price at 7% is N = 60, FV = $1,000, I = 3.5%, PMT = $32.50, CPT PV = $937.64. Change in price is $937.64 – $830.32 = $107.31.

(Study Session 16, Module 52.1, LOS 52.a)

Question #51 of 143

An investor plans to buy a 10-year, $1,000 par value, 8% semiannual coupon bond. If the yield to maturity of the bond is 9%, the bond's value is:

A) $934.96.

B) $935.82.

C) $1,067.95.

Explanation

N = 20, I = 9/2 = 4.5, PMT = 80/2 = 40, FV = 1,000, compute PV = $934.96

(Study Session 16, Module 52.1, LOS 52.a)

Question #52 of 143

A 20-year, $1,000 face value, 10% semi-annual coupon bond is selling for $875. The bond's yield to maturity is:

A) 11.62%. ✓

B) 11.43%. ✗

C) 5.81%. ✗

Explanation

N = 40 (2 × 20 years); PMT = 50 (0.10 × 1,000) / 2; PV = -875; FV = 1,000; CPT → I/Y = 5.811 × 2 (for annual rate) = 11.62%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #53 of 143

Consider a 10%, 10-year bond sold to yield 8%. One year passes and interest rates remained unchanged (8%). What will have happened to the bond's price during this period?

A) It will have increased. ✗

B) It will have remained constant. ✗

C) It will have decreased. ✓

Explanation

The bond is sold at a premium, as time passes the bond's price will move toward par. Thus it will *fall*.

N = 10; FV = 1,000; PMT = 100; I = 8; CPT → PV = 1,134

N = 9; FV = 1,000; PMT = 100; I = 8; CPT → PV = 1,125

(Study Session 16, Module 52.1, LOS 52.b)

Question #54 of 143

What is the yield to call on a bond that has an 8% coupon paid annually, $1,000 face value, 10 years to maturity and is first callable in 6 years? The current market price is $1,100. The call price is the face value plus 1-year's interest.

A) 7.02%. ✓

B) 6.00%. ✗

C) 7.14%. ✗

Explanation

N = 6; PV = -1,100.00; PMT = 80; FV = 1,080; Compute I/Y = 7.02%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #55 of 143

A $1,000 par, semiannual-pay bond is trading for 89.14, has a coupon rate of 8.75%, and accrued interest of $43.72. The flat price of the bond is:

A) $935.12.

B) $891.40.

C) $847.69.

Explanation

The flat price of the bond is the quoted price, 89.14% of par value, which is $891.40.

(Study Session 16, Module 52.2, LOS 52.d)

Question #56 of 143

Which of the following statements regarding zero-coupon bonds and spot interest rates is CORRECT?

A) Spot interest rates will never vary across the term structure.

B) Price appreciation creates all of the zero-coupon bond's return.

C) If the yield to maturity on a 2-year zero coupon bond is 6%, then the 2-year spot rate is 3%.

Explanation

Zero-coupon bonds are quite special. Because zero-coupon bonds have no coupons (all of the bond's return comes from price appreciation), investors have no uncertainty about the rate at which coupons will be invested. Spot rates are defined as interest rates used to discount a single cash flow to be received in the future. If the yield to maturity on a 2-year zero is 6%, we can say that the 2-year spot rate is 6%.

(Study Session 16, Module 52.2, LOS 52.c)

Question #57 of 143

A $1,000 par value, 10% annual coupon bond with 15 years to maturity is priced at $951. The bond's yield to maturity is:

A) less than its current yield.

B) equal to its current yield.

C) greater than its current yield.

Explanation

The bond's YTM is:

N = 15; PMT = 100; PV = –951; FV = 1,000; CPT I/Y = 10.67%

Current Yield = annual coupon payment / bond price

CY = 100 / $951 = 0.1051 or 10.51%

(Study Session 16, Module 52.3, LOS 52.f)

Question #58 of 143

A $1,000 par value note is priced at an annualized discount of 1.5% based on a 360-day year and has 150 days to maturity. The note will have a bond equivalent yield that is:

A) lower than 1.5%.

B) higher than 1.5%.

C) equal to 1.5%.

Explanation

The BEY is an add-on yield based on a 365-day year. The discount of 1.5% implies a discount of $1,000 × 1.5% × 150/360 = $6.25. The current price is therefore $1,000 – $6.25 = $993.75.

This gives a HPR of $6.25 / $993.75 = 0.629%.

BEY = 0.629% × 365/150 = 1.53%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #59 of 143

Current spot rates are as follows:

1-Year: 6.5%

2-Year: 7.0%

3-Year: 9.2%

Which of the following statements is *most accurate*

A) For a 3-year annual pay coupon bond, all cash flows can be discounted at 9.2% to find the bond's arbitrage-free value.

B) For a 3-year annual pay coupon bond, the first coupon can be discounted at 6.5%, the second coupon can be discounted at 7.0%, and the third coupon plus maturity value can be discounted

C) The yield to maturity for 3-year annual pay coupon bond can be found by taking the geometric average of the 3 spot rates.

Explanation

Spot interest rates can be used to price coupon bonds by taking each individual cash flow and discounting it at the appropriate spot rate for that year's payment. Note that the yield to maturity is the bond's internal rate of return that equates all cash flows to the bond's price. Current spot rates have nothing to do with the bond's yield to maturity.

(Study Session 16, Module 52.2, LOS 52.c)

Question #60 of 143

The zero volatility spread (Z-spread) is the spread that:

A) is added to each spot rate on the government yield curve that will cause the present value of the bond's cash flows to equal its market price.

B) is added to the yield to maturity of a similar maturity government bond to equal the yield to maturity of the risky bond.

C) results when the cost of the call option in percent is subtracted from the option adjusted spread.

Explanation

The zero volatility spread (Z-spread) is the interest rate that is added to each zero-coupon bond spot rate that will cause the present value of the risky bond's cash flows to equal its market value. The nominal spread is the spread that is added to the YTM of a similar maturity government bond that will then equal the YTM of the risky bond. The zero volatility spread (Z-spread) is the spread that results when the cost of the call option in percent is added to the option adjusted spread.

(Study Session 16, Module 52.5, LOS 52.i)

Question #61 of 143

An investor purchased a 10-year zero-coupon bond with a yield to maturity of 10% and a par value of $1,000. What would her rate of return be at the end of the year if she sells the bond? Assume the yield to maturity on the bond is 9% at the time it is sold and annual compounding periods are used.

A) 19.42%.

B) 16.00%.

C) 15.00%.

Explanation

Purchase price: I = 10; N = 10; PMT = 0; FV = 1,000; CPT → PV = 385.54

Selling price: I = 9; N = 9; PMT = 0; FV = 1,000; CPT → PV = 460.43

% Return = (460.43 – 385.54) / 385.54 × 100 = 19.42%

(Study Session 16, Module 52.3, LOS 52.f)

Question #62 of 143

Today an investor purchases a $1,000 face value, 10%, 20-year, semi-annual bond at a discount for $900. He wants to sell the bond in 6 years when he estimates the yields will be 9%. What is the estimate of the future price?

A) $946.

B) $1,152.

C) $1,079.

Explanation

In 6 years, there will be 14 years (20 – 6), or 14 × 2 = 28 semi-annual periods remaining of the bond's life So, N = (20 – 6)(2) = 28; PMT = (1,000 × 0.10) / 2 = 50; I/Y = 9/2 = 4.5; FV = 1,000; CPT → PV = 1,079.

Note: Calculate the PV (we are interested in the PV 6 years from now), not the FV.

(Study Session 16, Module 52.1, LOS 52.a)

Question #63 of 143

If a bond sells at a discount and market rates are expected to stay the same until maturity, the price of the bond will:

A) increase over time, approaching the par value at maturity. ✓

B) remain constant until maturity. ✗

C) increase over time, approaching the par value minus the final interest payment at maturity. ✗

Explanation

The bond's price will increase towards the par value over time.

(Study Session 16, Module 52.1, LOS 52.b)

Question #64 of 143

A 15-year, 10% annual coupon bond is sold for $1,150. It can be called at the end of 5 years for $1,100. What is the bond's yield to call (YTC)?

A) 9.2%. ✗

B) 8.0%. ✓

C) 8.4%. ✗

Explanation

Input into your calculator:

N = 5; FV = 1,100; PMT = 100; PV = -1,150; CPT → I/Y = 7.95%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #65 of 143

A spot rate curve is *most accurately* described as yields to maturity for:

A) government bonds. ✗

B) zero-coupon bonds. ✓

C) money market securities. ✗

Explanation

A spot rate curve illustrates the yields for single payments to be made in various future periods, including short-term and long-term periods.

(Study Session 16, Module 52.4, LOS 52.g)

Question #66 of 143

A $1,000 par value, 10%, semiannual, 20-year debenture bond is currently selling for $1,100. What is this bond's current yield and will the current yield be higher or lower than the yield to maturity?

	Current Yield	Current Yield vs. YTM	
A)	8.9%	lower	✗
B)	9.1%	higher	✓
C)	8.9%	higher	✗

Explanation

Current yield = annual coupon payment/price of the bond

CY = 100/1,100 = 0.0909

The current yield will be between the coupon rate and the yield to maturity. The bond is selling at a premium, so the YTM must be less than the coupon rate, and therefore the current yield is greater than the YTM.

The YTM is calculated as: FV = 1,000; PV = -1,100; N = 40; PMT = 50; CPT → I = 4.46 × 2 = 8.92

(Study Session 16, Module 52.3, LOS 52.f)

Question #67 of 143

Bond X is a noncallable corporate bond maturing in ten years. Bond Y is also a corporate bond maturing in ten years, but Bond Y is callable at any time beginning three years from now. Both bonds carry a credit rating of AA. Based on this information:

A) Bond Y will have a higher zero-volatility spread than Bond X. ✓

B) The zero-volatility spread of Bond X will be greater than its option-adjusted spread. ✗

C) The option adjusted spread of Bond Y will be greater than its zero-volatility spread. ✗

Explanation

Bond Y will have the higher Z-spread due to the call option embedded in the bond. This option benefits the issuer, and investors will demand a higher yield to compensate for this feature. The option-adjusted spread removes the value of the option from the spread calculation, and would always be less than the Z-spread for a callable bond. Since Bond X is noncallable, the Z-spread and the OAS will be the same.

(Study Session 16, Module 52.5, LOS 52.i)

Question #68 of 143

Calculate the current yield and the yield-to-first call on a bond with the following characteristics:

- 5 years to maturity
- $1,000 face value
- 8.75% semi-annual coupon
- Priced to yield 9.25%
- Callable at $1,025 in two years

	Current Yield	Yield-to-Call	
A)	9.83%	19.80%	✗
B)	8.93%	5.51%	✗
C)	8.93%	11.02%	✓

Explanation

To calculate the CY and YTC, we first need to calculate the present value of the bond: FV = 1,000; N = 5 × 2 = 10; PMT = (1000 × 0.0875) / 2 = 43.75; I/Y = (9.25 / 2) = 4.625; CPT → PV = -980.34 (negative sign because we entered the FV and payment as positive numbers). Then, CY = (Face value × Coupon) / PV of bond = (1,000 × 0.0875) / 980.34 = **8.93%**.

And the YTC calculation is: FV = 1,025 (price at first call); N = (2 × 2) = 4; PMT = 43.75 (same as above); PV = –980.34 (negative sign because we entered the FV and payment as positive numbers); CPT → I/Y = 5.5117 (semi-annual rate, need to multiply by 2) = **11.02%**.

(Study Session 16, Module 52.3, LOS 52.f)

Question #69 of 143

Given the following spot rate curve:

Spot Rate
1-yr zero = 9.50%
2-yr zero = 8.25%
3-yr zero = 8.00%
4-yr zero = 7.75%
5-yr zero = 7.75%

What will be the market price of a five-year, 9% annual coupon rate bond?

A) $1,047.68. ✓

B) $1,067.78. ✗

C) $1,000.00. ✗

Explanation

$90 / (1 + 0.095) + 90 / (1 + 0.0825)^2 + 90 / (1 + 0.08)^3 + 90 / (1 + 0.0775)^4 + 1,090 / (1 + 0.0775)^5 = \$1,047.68$.

(Study Session 16, Module 52.2, LOS 52.c)

Question #70 of 143

Given that the two-year spot rate is 5.89% and the one-year forward rate one-year from now is 6.05%, assuming annual compounding what is the one year spot rate?

A) 5.73%.

B) 5.91%.

C) 5.67%.

Explanation

The spot rate is computed as follows:

$$\text{spot rate}_{0,1} = \frac{\left(1 + \text{spot rate}_{0,2}\right)^2}{\left(1 + \text{forward rate}_{1,2}\right)^1} - 1 = \frac{(1 + 0.0589)^2}{(1 + 0.0605)^1} - 1 = 5.73\%$$

(Study Session 16, Module 52.4, LOS 52.h)

Question #71 of 143

Suppose that the six-month spot rate is equal to 7% and the two-year spot rate is 6%. The one-and a half-year forward rate starting six months from now has to:

A) be less than 6%.

B) be more than 6%.

C) lie between 6% and 7%.

Explanation

The following relationship has to hold:

$$(1 + \text{spot rate}_{0,0.5}/2)^1 \times (1 + \text{forward rate}_{0.5,2}/2)^3 = (1 + \text{spot rate}_{0,2}/2)^4.$$

For this relationship to hold the forward rate has to be less than 6%.

(Study Session 16, Module 52.4, LOS 52.h)

Question #72 of 143

A 30-year, 10% annual coupon bond is sold at par. It can be called at the end of 10 years for \$1,100. What is the bond's yield to call (YTC)?

A) 10.0%.

B) 10.6%.

C) 8.9%.

Explanation

N = 10; PMT = 100; PV = –1,000; FV = 1,100; CPT → I = 10.6.

(Study Session 16, Module 52.3, LOS 52.f)

Question #73 of 143

If a $1,000 bond has a 14% coupon rate and a current price of 950, what is the current market yield?

A) 15.36%.

B) 14.00%.

C) 14.74%.

Explanation

(0.14)(1,000) = $140 coupon

140/950 × 100 = 14.74

(Study Session 16, Module 52.3, LOS 52.f)

Question #74 of 143

An investor wants to take advantage of the 5-year spot rate, currently at a level of 4.0%. Unfortunately, the investor just invested all of his funds in a 2-year bond with a yield of 3.2%. The investor contacts his broker, who tells him that in two years he can purchase a 3-year bond and end up with the same return currently offered on the 5-year bond. What 3-year forward rate beginning two years from now will allow the investor to earn a return equivalent to the 5-year spot rate?

A) 4.5%.

B) 5.6%.

C) 3.5%.

Explanation

$(1.04^5 / 1.032^2)^{1/3} - 1 = 4.5\%$.

(Study Session 16, Module 52.4, LOS 52.h)

Question #75 of 143

Consider a 10-year, 6% coupon, $1,000 par value bond, paying annual coupons, with a 10% yield to maturity. The change in the bond price resulting from a 400 basis point increase in yield is *closest to*:

A) $1,160.

B) $480.

C) $170.

Explanation

Using the 10% yield to maturity, the price of the bond originally is $754.22:

N = 10; I/Y = 10; PMT = 60; FV = 1000; CPT PV = $754.22

Using the 14% yield to maturity, the price of the bond changes to $582.71:

N = 10; I/Y = 14; PMT = 60; FV = 1000; CPT PV = $582.71

Therefore, the price is expected to change from $754.22 to $582.71, a decrease of $171.51.

(Study Session 16, Module 52.1, LOS 52.a)

Question #76 of 143

The six-month spot rate is 4.0% and the 1 year spot rate is 4.5%, both stated on a semiannual bond basis. The implied six-month rate six months from now, stated on a semiannual bond basis, is *closest to:*

A) 5%.

B) 6%.

C) 4%.

Explanation

$6m6m/2 = [(1 + S_2/2)^2 / (1 + S_1/2)^1] - 1 = [(1.0225)^2/(1.02)^1] - 1$

[1.0455 / 1.02] - 1 = 0.025

6m6m = 0.025 × 2 = 0.05

(Study Session 16, Module 52.4, LOS 52.h)

Question #77 of 143

For an option-free bond, as the yield to maturity increases, the bond price:

A) decreases at a decreasing rate.

B) decreases at an increasing rate.

C) increases at a decreasing rate.

Explanation

The relationship between price and yield for an option-free bond is inverse and convex toward the origin. As the yield increases, the price decreases, but at a decreasing rate.

(Study Session 16, Module 52.1, LOS 52.b)

Question #78 of 143

An investor who is calculating the arbitrage-free value of a government security should discount each cash flow using the:

A) government note yield that is specific to its maturity.

B) risk-free rate.

C) government spot rate that is specific to its maturity.

Explanation

To calculate a government bond's arbitrage-free value, each cash flow is discounted using the government spot rate that is specific to the maturity of the cash flow.

(Study Session 16, Module 52.2, LOS 52.c)

Question #79 of 143

Consider a 5-year, semiannual, 10% coupon bond with a maturity value of 1,000 selling for $1,081.11. The first call date is 3 years from now and the call price is $1,030. What is the yield-to-call?

A) 7.28%.

B) 3.91%.

C) 7.82%.

Explanation

N = 6; PMT = 50; FV = 1,030; PV = –1,081.11; CPT → I = 3.91054

3.91054 × 2 = 7.82

(Study Session 16, Module 52.3, LOS 52.f)

Question #80 of 143

An investor purchases a 5-year, A-rated, 7.95% coupon, semiannual-pay corporate bond at a yield to maturity of 8.20%. The bond is callable at 102 in three years. The bond's yield to call is *closest to*:

A) 8.6%.

B) 8.3%.

C) 8.9%.

Explanation

First determine the price paid for the bond:>

N = 5 × 2 = 10; I/Y = 8.20 / 2 = 4.10; PMT = 7.95 / 2 = 3.975; FV = 100; CPT PV = –98.99

Then use this value and the call price and date to determine the yield to call:

N = 3 × 2 = 6; PMT = 7.95 / 2 = 3.975; PV = –98.99; FV = 102; CPT I/Y = 4.4686 × 2 = 8.937%

(Study Session 16, Module 52.3, LOS 52.f)

Question #81 of 143

A bond with a face value of $1,000 pays a semi-annual coupon of $60. It has 15 years to maturity and a yield to maturity of 16% per year. What is the value of the bond?

A) $774.84. ✓

B) $697.71. ✗

C) $832.88. ✗

Explanation

FV = 1,000; PMT = 60; N = 30; I = 8; CPT → PV = 774.84

(Study Session 16, Module 52.1, LOS 52.a)

Question #82 of 143

A 20 year, 8% semi-annual coupon, $1,000 par value bond is selling for $1,100. The bond is callable in 4 years at $1,080. What is the bond's yield to call?

A) 7.21. ✗

B) 6.87. ✓

C) 8.13. ✗

Explanation

n = 4(2) = 8; PMT = 80/2 = 40; PV = -1,100; FV = 1,080

Compute YTC = 3.435(2) = 6.87%

(Study Session 16, Module 52.3, LOS 52.f)

Question #83 of 143

A bond with a 12% annual coupon, 10 years to maturity and selling at 88 percent of par has a yield to maturity of:

A) over 14%. ✓

B) between 10% and 12%. ✗

C) between 13% and 14%. ✗

Explanation

PMT = 12; N = 10; PV = -88; FV = 100; CPT → I = 14.3

(Study Session 16, Module 52.1, LOS 52.a)

Question #84 of 143

A coupon bond that pays interest annually has a par value of $1,000, matures in 5 years, and has a yield to maturity of 10%. What is the value of the bond today if the coupon rate is 8%?

A) $924.18.

B) $2,077.00.

C) $1,500.00.

Explanation

FV = 1,000

N = 5

I = 10

PMT = 80

Compute PV = 924.18.

(Study Session 16, Module 52.1, LOS 52.a)

Question #85 of 143

The current yield on a bond is equal to:

A) annual interest divided by the current market price.

B) the yield to maturity.

C) the internal rate of return

Explanation

The formula for current yield is the annual cash coupon payment divided by the bond price.

(Study Session 16, Module 52.3, LOS 52.f)

Question #86 of 143

A three-year annual coupon bond has a par value of $1,000 and a coupon rate of 5.5%. The spot rate for year 1 is 5.2%, the spot rate for year two is 5.5%, and the spot rate for year three is 5.7%. The value of the coupon bond is *closest to*:

A) $1,000.00.

B) $995.06.

C) $937.66.

Explanation

You need the find the present value of each cash flow using the spot rate that coincides with each cash flow.

The present value of cash flow 1 is: FV = $55; PMT = 0; I/Y = 5.2%; N = 1; CPT → PV = -$52.28.

The present value of cash flow 2 is: FV = $55; PMT = 0; I/Y = 5.5%; N = 2; CPT → PV = –$49.42.

The present value of cash flow 3 is: FV = $1,055; PMT = 0; I/Y = 5.7%; N = 3; CPT → PV = –$893.36.

The most you pay for the bond is the sum of: $52.28 + $49.42 + $893.36 = $995.06.

(Study Session 16, Module 52.2, LOS 52.c)

Question #87 of 143

What value would an investor place on a 20-year, $1,000 face value, 10% annual coupon bond, if the investor required a 9% rate of return?

A) $1,091. ✓

B) $879. ✗

C) $920. ✗

Explanation

N = 20; I/Y = 9; PMT = 100 (0.10 × 1,000); FV = 1,000; CPT → PV = 1,091.

(Study Session 16, Module 52.1, LOS 52.a)

Question #88 of 143

What value would an investor place on a 20-year, 10% annual coupon bond, if the investor required an 11% rate of return?

A) $1,035 ✗

B) $879. ✗

C) $920. ✓

Explanation

N = 20, I/Y = 11, PMT = 100, FV = 1,000, CPT PV

(Study Session 16, Module 52.1, LOS 52.a)

Question #89 of 143

In which of the following conditions is the bond selling at a premium? The coupon rate:

A) is greater than current yield, which is greater than yield-to-maturity. ✓

B) is less than current yield, which is less than yield-to-maturity. ✗

C) current rate and yield-to-maturity are all the same. ✗

Explanation

When a bond is selling at a premium the coupon rate will be greater than current yield and current yield will be greater than YTM.

(Study Session 16, Module 52.1, LOS 52.b)

Question #90 of 143

What is the present value of a 7% semiannual-pay bond with a $1,000 face value and 20 years to maturity if similar bonds are now yielding 8.25%?

A) $1,000.00.

B) $879.52.

C) $878.56.

Explanation

N = 20 × 2 = 40; I/Y = 8.25/2 = 4.125; PMT = 70/2 = 35; and FV = 1,000.

Compute PV = 878.56.

(Study Session 16, Module 52.1, LOS 52.a)

Question #91 of 143

Which of the following statements regarding zero-coupon bonds and spot interest rates is *most* accurate?

A) Price appreciation creates only some of the zero-coupon bond's return.

B) Spot interest rates will never vary across time.

C) A coupon bond can be viewed as a collection of zero-coupon bonds.

Explanation

Zero-coupon bonds are quite special. Because zero-coupon bonds have no coupons (all of the bond's return comes from price appreciation), investors have no uncertainty about the rate at which coupons will be invested. Spot rates are defined as interest rates used to discount a single cash flow to be received in the future. Any bond can be viewed as the sum of the present value of its individual cash flows where each of those cash flows are discounted at the appropriate zero-coupon bond spot rate.

(Study Session 16, Module 52.1, LOS 52.a)

Question #92 of 143

A coupon bond that pays interest annually has a par value of $1,000, matures in 5 years, and has a yield to maturity of 10%. What is the value of the bond today if the coupon rate is 12%?

A) $1,077.22

B) $927.90.

C) $1,075.82.

Explanation

FV = 1,000

N = 5

I = 10

PMT = 120

CPT = ?

PV = 1,075.82.

(Study Session 16, Module 52.1, LOS 52.a)

Question #93 of 143

If market rates do not change, as time passes the price of a zero-coupon bond will:

A) approach zero.

B) approach the purchase price.

C) approach par.

Explanation

A bond's value may differ substantially from it's maturity value prior to maturity. But as maturity draws nearer the bond's value converges to it's maturity value. This statement is true for regular bonds as well as zero-coupon bonds.

(Study Session 16, Module 52.1, LOS 52.b)

Question #94 of 143

Given a required yield to maturity of 6%, what is the intrinsic value of a semi-annual pay coupon bond with an 8% coupon and 15 years remaining until maturity?

A) $1,196.

B) $1,095.

C) $1,202.

Explanation

This problem can be solved most easily using your financial calculator. Using semiannual payments, I = 6/2 = 3%; PMT = 80/2 = $40; N = 15 × 2 = 30; FV = $1,000; CPT → PV = $1,196.

(Study Session 16, Module 52.1, LOS 52.a)

Question #95 of 143

A year ago a company issued a bond with a face value of $1,000 with an 8% coupon. Now the prevailing market yield is 10%. What happens to the bond? The bond:

A) is traded at a market price higher than $1,000.

B) is traded at a market price of less than $1,000.

C) price is not affected by the change in market yield, and will continue to trade at $1,000.

Explanation

A bonds price/value has an inverse relationship with interest rates. Since interest rates are increasing (from 8% when issued to 10% now) the bond will be selling at a discount. This happens so an investor will be able to purchase the bond and still earn the same yield that the market currently offers.

(Study Session 16, Module 52.1, LOS 52.b)

Question #96 of 143

The margin above or below LIBOR that is used to determine a floating-rate note's coupon payments is *most accurately* described as its:

A) discount margin.

B) required margin.

C) quoted margin.

Explanation

The quoted margin of a floating-rate note is the number of basis points added to or subtracted from the note's reference rate to determine its coupon payments. The required margin or discount margin is the number of basis points above or below the reference rate that would cause the note's price to return to par value at each reset date. Required margin may be different from quoted margin if a note's credit quality has changed since issuance.

(Study Session 16, Module 52.3, LOS 52.f)

Question #97 of 143

A coupon bond that pays interest annually is selling at par, matures in 5 years, and has a coupon rate of 12%. The yield to maturity on this bond is:

A) 60.00%.

B) 8.33%.

C) 12.00%.

Explanation

N = 5; PMT = 120; PV = -1,000; FV = 1,000; CPT → I = 12

Hint: the YTM equals the coupon rate when a bond is selling at par.

(Study Session 16, Module 52.3, LOS 52.f)

Question #98 of 143

An investor buys a 20-year, 10% semi-annual bond for $900. She wants to sell the bond in 6 years when she estimates yields will be 10%. What is the estimate of the future price?

A) $1,000. ✓

B) $1,079. ✗

C) $946. ✗

Explanation

Since yields are projected to be 10% and the coupon rate is 10%, we know that the bond will sell at par value.

(Study Session 16, Module 52.1, LOS 52.a)

Question #99 of 143

A 5-year bond with a 10% coupon has a present yield to maturity of 8%. If interest rates remain constant one year from now, the price of the bond will be:

A) higher. ✗

B) lower. ✓

C) the same. ✗

Explanation

A premium bond sells at more than face value, thus as time passes the bond value will converge upon the face value.

(Study Session 16, Module 52.1, LOS 52.b)

Question #100 of 143

An investor gathers the following information about a 2-year, annual-pay bond:

- Par value of $1,000
- Coupon of 4%
- 1-year spot interest rate is 2%
- 2-year spot interest rate is 5%

Using the above spot rates, the current price of the bond is *closest* to:

A) $983. ✓

B) $1,000. ✗

C) $1,010. ✗

Explanation

The value of the bond is simply the present value of discounted future cash flows, using the appropriate spot rate as the discount rate for each cash flow. The coupon payment of the bond is $40 (0.04 × 1,000). The bond price = $40/(1.02) + 1,040/(1.05)^2 = $982.53.

(Study Session 16, Module 52.2, LOS 52.c)

Question #101 of 143

If yield to maturity and risk factors remain constant over the remainder of a coupon bond's life, and the bond is trading at a discount today, it will have a:

A) positive current yield and a capital gain. ✗

B) positive current yield, only. ✓

C) negative current yield and a capital gain. ✗

Explanation

A coupon bond will have a positive current yield. It will not have a capital gain because its price will increase toward par along its constant-yield price trajectory as long as its YTM remains constant.

(Study Session 16, Module 52.1, LOS 52.b)

Question #102 of 143

Assume a city issues a $5 million bond to build a new arena. The bond pays 8% semiannual interest and will mature in 10 years. Current interest rates are 9%. What is the present value of this bond and what will the bond's value be in seven years from today?

	Present Value	Value in 7 Years from Today
A)	4,674,802	4,871,053 ✓
B)	4,674,802	4,931,276 ✗
C)	5,339,758	4,871,053 ✗

Explanation

Present Value:

Since the current interest rate is above the coupon rate the bond will be issued at a discount. FV = $5,000,000; N = 20; PMT = (0.04)(5 million) = $200,000; I/Y = 4.5; CPT → PV = -$4,674,802

Value in 7 Years:

Since the current interest rate is above the coupon rate the bond will be issued at a discount. FV = $5,000,000; N = 6; PMT = (0.04)(5 million) = $200,000; I/Y = 4.5; CPT → PV = -$4,871,053

(Study Session 16, Module 52.1, LOS 52.a)

Question #103 of 143

Consider a bond that pays an annual coupon of 5% and that has three years remaining until maturity. Assume the term structure of interest rates is flat at 6%. If the term structure of interest rates does not change over the next twelve-month interval, the bond's price change (as a percentage of par) will be *closest to:*

A) 0.84.

B) 0.00.

C) -0.84.

Explanation

The bond price change is computed as follows:

Bond Price Change = New Price – Old Price = $(5/1.06 + 105/1.06^2) – (5/1.06 + 5/1.06^2 + 105/1.06^3) = 98.17 – 97.33 = 0.84$.

(Study Session 16, Module 52.1, LOS 52.a)

Question #104 of 143

An 11% coupon bond with annual payments and 10 years to maturity is callable in 3 years at a call price of $1,100. If the bond is selling today for 975, the *yield to call* is:

A) 10.26%.

B) 9.25%.

C) 14.97%.

Explanation

PMT = 110, N = 3, FV = 1,100, PV = 975

Compute I = 14.97

(Study Session 16, Module 52.3, LOS 52.f)

Question #105 of 143

An investor is interested in buying a 4-year, $1,000 face value bond with a 7% coupon and semi-annual payments. The bond is currently priced at $875.60. The first put price is $950 in 2 years. The yield to put is *closest* to:

A) 8.7%.

B) 11.9%.

C) 10.4%.

Explanation

N = 2 × 2 = 4; PV = -875.60; PMT = 70/2 = 35; FV = 950; CPT → I/Y = 5.94 × 2 = 11.88%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #106 of 143

A Treasury bond due in one-year has a yield of 8.5%. A Treasury bond due in 5 years has a yield of 9.3%. A bond issued by General Motors due in 5 years has a yield of 9.9%. A bond issued by Exxon due in one year has a yield of 9.4%. The yield spreads on the bonds issued by Exxon and General Motors are:

	Exxon	General Motors
A)	0.1%	0.6%
B)	0.9%	0.6%
C)	0.1%	1.4%

Explanation

9.4 – 8.5 = 0.9

9.9 – 9.3 = 0.6

(Study Session 16, Module 52.5, LOS 52.i)

Question #107 of 143

A 2-year option-free bond (par value of $10,000) has an annual coupon of 15%. An investor determines that the spot rate of year 1 is 16% and the year 2 spot rate is 17%. Using the arbitrage-free valuation approach, the bond price is *closest* to:

A) $8,401.

B) $9,694.

C) $11,122.

Explanation

We can calculate the price of the bond by discounting each of the annual payments by the appropriate spot rate and finding the sum of the present values. Price = [1,500/(1.16)] + [11,500/$(1.17)^2$] = $9,694. Or, in keeping with the notion that each cash flow is a separate bond, sum the following transactions on your financial calculator:

N=1, I/Y=16.0, PMT=0, FV=1,500, CPT PV=1,293

N=2, I/Y=17.0, PMT=0, FV=11,500, CPT PV=8,401

Price = 1,293 + 8,401 = $9,694.

(Study Session 16, Module 52.2, LOS 52.c)

Question #108 of 143

Given that the one-year spot rate is 6.05% and the two-year spot rate is 7.32%, assuming annual compounding what is the one-year forward rate starting one year from now?

A) 7.87%.

B) 8.34%.

C) 8.61%.

Explanation

The forward rate is computed as follows:

$$\text{Forward rate}_{1,2} = \frac{\left(1 + \text{spot rate}_{0,2}\right)^2}{\left(1 + \text{spot rate}_{0,1}\right)^1} - 1 = \frac{(1 + 0.0732)^2}{(1 + 0.0605)^1} - 1 = 8.61\%$$

(Study Session 16, Module 52.4, LOS 52.h)

Question #109 of 143

Suppose that IBM has a $1,000 par value bond outstanding with a 12% semiannual coupon that is currently trading at 102.25 with seven years to maturity. Which of the following is *closest* to the yield to maturity (YTM) on the bond?

A) 11.21%.

B) 11.52%.

C) 11.91%.

Explanation

To find the YTM, enter PV = –$1,022.50; PMT = $60; N = 14; FV = $1,000; CPT → I/Y = 5.76%. Now multiply by 2 for the semiannual coupon payments: (5.76)(2) = 11.52%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #110 of 143

Assume the following corporate spot yield curve.

One-year rate: 5%

Two-year rate: 6%

Three-year rate: 7%

If a 3-year annual-pay corporate bond has a coupon of 6%, its yield to maturity is *closest* to:

A) 6.08%.

B) 6.92%.

C) 7.00%.

Explanation

First determine the current price of the corporate bond:

$$= 6 / 1.05 + 6 / (1.06)^2 + 106 / (1.07)^3 = 5.71 + 5.34 + 86.53 = 97.58$$

Then compute the yield of the bond:

N = 3; PMT = 6; FV = 100; PV = -97.58; CPT → I/Y = 6.92%

(Study Session 16, Module 52.2, LOS 52.c)

Question #111 of 143

Consider a 6-year $1,000 par bond priced at $1,011. The coupon rate is 7.5% paid semiannually. Six-year bonds with comparable credit quality have a yield to maturity (YTM) of 6%. Should an investor purchase this bond?

A) Yes, the bond is undervalued by $64.

B) No, the bond is overvalued by $64.

C) Yes, the bond is undervalued by $38.

Explanation

FV = 1,000

PMT = 37.5

N = 12

I/Y = 3%

CPT PV = 1,074.66

1,074.66 – 1,011 = 64

(Study Session 16, Module 52.1, LOS 52.a)

Question #112 of 143

To determine the full price of a corporate bond, a dealer is *most likely* to calculate accrued interest based on:

A) Actual day counts.

B) 30-day months and 360-day years.

C) 30-day months and 365-day years.

Explanation

Accrued interest for corporate bonds is typically calculated using the 30/360 method. For government bonds, accrued interest is typically calculated using the actual/actual method.

(Study Session 16, Module 52.2, LOS 52.d)

Question #113 of 143

A disadvantage of G-spreads and I-spreads is that they are theoretically correct only if the spot yield curve is:

A) downward sloping.

B) upward sloping.

C) flat.

Explanation

G-spreads and I-spreads are only correct when the spot yield curve is flat (yields are about the same across maturities).

(Study Session 16, Module 52.5, LOS 52.i)

Question #114 of 143

An investor buys a pure-discount note that matures in 146 days for $971. The bond-equivalent yield is *closest to*:

A) 1.2%.

B) 3.0%.

C) 7.5%.

Explanation

The equivalent add-on return the investor earns for the 146-day holding period is $1,000 / $971 – 1 = 0.0299 = 2.99%. The bond-equivalent yield is (365 / 146) × 2.99% = 7.47%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #115 of 143

The price and yield on a bond have:

A) a positive relationship.

B) an inverse relationship.

C) no relationship.

Explanation

Interest rates and a bond's price have an inverse relationship. If interest rates increase the bond price will decrease and if interest rates decrease the bond price will increase.

(Study Session 16, Module 52.1, LOS 52.b)

Question #116 of 143

A yield curve for coupon bonds is composed of yields on bonds with similar:

A) maturities.

B) issuers.

C) coupon rates.

Explanation

Yield curves are typically constructed for bonds of the same or similar issuers, such as a government bond yield curve or AA rated corporate bond yield curve.

(Study Session 16, Module 52.4, LOS 52.g)

Question #117 of 143

Consider a bond selling for $1,150. This bond has 28 years to maturity, pays a 12% annual coupon, and is callable in 8 years for $1,100. The yield to maturity is *closest to*:

A) 10.34%.

B) 10.55%.

C) 9.26%.

Explanation

N = 28; PMT = 120; PV = –1,150; FV = 1,000; CPT I/Y = 10.3432.

(Study Session 16, Module 52.3, LOS 52.f)

Question #118 of 143

The one-year spot rate is 7.00%. One-year forward rates are 8.15% one year from today, 10.30% two years from today, and 12.00% three years from today.

The value of a 4-year, 11% annual pay, $1,000 per bond is *closest* to:

A) $984.

B) $1,060.

C) $1,052.

Explanation

Spot Rates:

Year 1 = 7%.

Year 2 = $[(1.07)(1.0815)]^{1/2} - 1 = 7.57\%$.

Year 3 = $[(1.07)(1.0815)(1.103)]^{1/3} - 1 = 8.48\%$.

Year 4 = $[(1.07)(1.0815)(1.103)(1.120)]^{1/4} - 1 = 9.35\%$.

Bond Value:

N = 1; FV = 110; I/Y = 7; CPT → PV = 102.80

N = 2; FV = 110; I/Y = 7.57; CPT → PV = 95.06

N = 3; FV = 110; I/Y = 8.48; CPT → PV = 86.17

N = 4; FV = 1,110; I/Y = 9.35; CPT → PV = 776.33

102.80 + 95.06 + 86.17 + 776.33 = 1,060.36

(Study Session 16, Module 52.2, LOS 52.c)

Question #119 of 143

A zero-coupon bond has a yield to maturity of 9.6% (annual basis) and a par value of $1,000. If the bond matures in 10 years, today's price of the bond would be:

A) $399.85. ✓

B) $422.41. ✗

C) $391.54. ✗

Explanation

I = 9.6; FV = 1,000; N = 10; PMT = 0; CPT → PV = 399.85

(Study Session 16, Module 52.1, LOS 52.a)

Question #120 of 143

A single yield used to discount all of a bond's cash flows when calculating its price is *most accurately* described as the bond's:

A) yield to maturity. ✓

B) simple yield. ✗

C) current yield. ✗

Explanation

Yield to maturity is the discount rate used to discount each of a bond's cash flows when calculating the bond's price. Current yield is a bond's annual coupon payment divided by its price. Simple yield is a bond's annual coupon payment plus amortization of a discount or minus amortization of a premium.

(Study Session 16, Module 52.3, LOS 52.f)

Question #121 of 143

Matrix pricing is used primarily for pricing bonds that:

A) differ from their benchmark bond's maturity. ✗

B) have low liquidity. ✓

C) differ from their benchmark bond's credit rating. ✗

Explanation

For bonds that do not trade or trade infrequently, matrix pricing uses the yields on similar issues that do trade to estimate the required yield on the illiquid bonds.

(Study Session 16, Module 52.2, LOS 52.e)

Question #122 of 143

What is the annual-pay yield for a bond with a semiannual-bond basis yield of 5.6%?

A) 5.68%. ✓

B) 5.60%. ✗

C) 5.52%. ✗

Explanation

The annual-pay yield is computed as follows:

$$\text{Annual-pay yield} = [(1 + 0.056 / 2)^2 - 1$$

(Study Session 16, Module 52.3, LOS 52.f)

Question #123 of 143

A 4 percent Treasury bond has 2.5 years to maturity. Spot rates are as follows:

6 month	1 year	1.5 years	2 years	2.5 years
2%	2.5%	3%	4%	6%

The note is currently selling for $976. Determine the arbitrage profit, if any, that is possible.

A) $37.63. ✗

B) $43.22. ✗

C) $19.22. ✓

Explanation

The no-arbitrage price of a bond is determined by discounting each of its cash flows at the appropriate spot rate. Any difference between the no-arbitrage price and the market price of a bond represents a potential arbitrage profit.

$$= \frac{20}{1.01} + \frac{20}{1.0125^2} + \frac{20}{1.015^3} + \frac{20}{1.02^4} + \frac{1020}{1.03^5}$$

$$= 19.80 + 19.51 + 19.13 + 18.48 + 879.86 = \$956.78$$

$$976 - 956.78 = \$19.22$$

(Study Session 16, Module 52.2, LOS 52.c)

Question #124 of 143

The one-year spot rate is 5% and the two-year spot rate is 6.5%. What is the one-year forward rate starting one year from now?

A) 8.02%. ✓

B) 5.00%. ✗

C) 7.87%. ✗

Explanation

The forward rate is computed as follows:

$$\text{One-year forward rate} = 1.065^2 / 1.05 - 1 = 8.02\%$$

(Study Session 16, Module 52.4, LOS 52.h)

Question #125 of 143

A 20-year, 10% semi-annual coupon bond selling for $925 has a yield to maturity (YTM) of:

A) 9.23%. ✗

B) 11.23%. ✗

C) 10.93%. ✓

Explanation

N = 40, PMT = 50, PV = -925, FV = 1,000, CPT I/Y = 5.4653 × 2 = 10.9305.

(Study Session 16, Module 52.3, LOS 52.f)

Question #126 of 143

The Treasury spot rate yield curve is *closest* to which of the following curves?

A) Par bond yield curve. ✗

B) Forward yield curve rate.

C) Zero-coupon bond yield curve.

Explanation

The spot rate yield curve shows the appropriate rates for discounting single cash flows occuring at different times in the future. Conceptually, these rates are equivalent to yields on zero-coupon bonds. The par bond yield curve shows the YTMs at which bonds of various maturities would trade at par value. Forward rates are expected future short-term rates.

(Study Session 16, Module 52.4, LOS 52.g)

Question #127 of 143

A five-year bond with a 7.75% semiannual coupon currently trades at 101.245% of a par value of $1,000.

Which of the following is *closest* to the current yield on the bond?

A) 7.53%.

B) 7.75%.

C) 7.65%.

Explanation

The current yield is computed as: (Annual Cash Coupon Payment) / (Current Bond Price). The annual coupon is: ($1,000)(0.0775) = $77.50. The current yield is then: ($77.50) / ($1,012.45) = 0.0765 = 7.65%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #128 of 143

Assume a city issues a $5 million bond to build a hockey rink. The bond pays 8% semiannual interest and will mature in 10 years. Current interest rates are 6%. What is the present value of this bond?

A) $5,743,874.

B) $5,000,000.

C) $3,363,478.

Explanation

Since current interest rates are lower than the coupon rate the bond will be issued at a premium. FV = $5,000,000; N = 20; I/Y = 3; PMT = (0.04)($5,000,000) = $200,000. Compute PV = $-5,743,874

(Study Session 16, Module 52.1, LOS 52.a)

Question #129 of 143

An analyst using matrix pricing will estimate the value of a bond based on:

A) a probability model for default risk.

B) yields to maturity of other bonds.

C) the issuer's cost of capital from all sources.

Explanation

Matrix pricing is a method for valuing a non-traded or infrequently traded bond based on the yields to maturity of similar bonds that are traded more frequently.

(Study Session 16, Module 52.2, LOS 52.e)

Question #130 of 143

Consider a $1,000-face value, 12-year, 8%, semiannual coupon bond with a YTM of 10.45%. The change in value for a decrease in yield of 38 basis points is:

A) $21.18.

B) $22.76.

C) $23.06.

Explanation

With YTM = 10.45% (I/Y = 5.225), PMT = 40, N = 24, FV = 1,000, PV = $834.61. With YTM = 10.07% (I/Y = 5.035), PV = $857.67, an increase of $23.06.

(Study Session 16, Module 52.1, LOS 52.a)

Question #131 of 143

An analyst wants to estimate the yield to maturity on a non-traded 4-year, annual pay bond rated A. Among actively traded bonds with the same rating, 3-year bonds are yielding 3.2% and 6-year bonds are yielding 5.0%. Using matrix pricing the analyst should estimate a YTM for the non-traded bond that is *closest* to:

A) 3.8%.

B) 3.6%.

C) 4.1%.

Explanation

Interpolating: 3.2% + [(4 – 3) / (6 – 3)] × (5.0% – 3.2%) = 3.8%

(Study Session 16, Module 52.2, LOS 52.e)

Question #132 of 143

The one-year spot rate is 6% and the one-year forward rates starting in one, two and three years respectively are 6.5%, 6.8%, and 7%. What is the four-year spot rate?

A) 6.57%.

B) 6.51%.

C) 6.58%.

Explanation

The four-year spot rate is computed as follows:

$$\text{Four-year spot rate} = [(1 + 0.06)(1 + 0.065)(1 + 0.068)(1 + 0.07)\,]^{1/4} - 1 = 6.57\%$$

(Study Session 16, Module 52.4, LOS 52.h)

Question #133 of 143

Sysco Foods has a 10-year bond outstanding with an annual coupon of 6.5%. If the bond is currently priced at $1,089.25, which of the following is *closest* to the semiannual-bond basis yield?

A) 5.33%. ✗

B) 5.42%. ✗

C) 5.26%. ✓

Explanation

First, find the annual yield to maturity of the bond as: FV = $1,000; PMT = $65; N = 10; PV = –1,089.25; CPT → I/Y = 5.33%. Then, find the semiannual-bond basis yield as: $2 \times [(1 + 0.0533)^{0.5} - 1] = 0.0526 = 5.26\%$.

(Study Session 16, Module 52.3, LOS 52.f)

Question #134 of 143

A 12% coupon bond with semiannual payments is callable in 5 years. The call price is $1,120. If the bond is selling today for $1,110, what is the yield-to-call?

A) 11.25%. ✗

B) 10.95%. ✓

C) 10.25%. ✗

Explanation

PMT = 60; N = 10; FV = 1,120; PV = 1,110; CPT → I = 5.47546

(5.47546)(2) = 10.95

(Study Session 16, Module 52.3, LOS 52.f)

Question #135 of 143

A $1,000 bond with an annual coupon rate of 10% has 10 years to maturity and is currently priced at $800. What is the bond's approximate yield-to-maturity?

A) 12.6%. ✗

B) 13.8%. ✓

C) 11.7%. ✗

Explanation

FV = 1,000, PMT = 100, N = 10, PV = -800

Compute I = 13.8

(Study Session 16, Module 52.3, LOS 52.f)

Question #136 of 143

A 3-year option-free bond (par value of $1,000) has an annual coupon of 9%. An investor determines that the spot rate of year 1 is 6%, the year 2 spot rate is 12%, and the year 3 spot rate is 13%. Using the arbitrage-free valuation approach, the bond price is *closest* to:

A) $968.

B) $1,080.

C) $912.

Explanation

We can calculate the price of the bond by discounting each of the annual payments by the appropriate spot rate and finding the sum of the present values. Price = [90 / (1.06)] + [90 / $(1.12)^2$] + [1,090 / $(1.13)^3$] = 912. Or, in keeping with the notion that each cash flow is a separate bond, sum the following transactions on your financial calculator:

N = 1; I/Y = 6.0; PMT = 0; FV = 90; CPT → PV = 84.91

N = 2; I/Y = 12.0; PMT = 0; FV = 90; CPT → PV = 71.75

N = 3; I/Y = 13.0; PMT = 0; FV = 1,090; CPT → PV = 755.42

Price = 84.91 + 71.75 + 755.42 = $912.08.

(Study Session 16, Module 52.2, LOS 52.c)

Question #137 of 143

A 10-year spot rate is *least likely* the:

A) yield-to-maturity on a 10-year zero-coupon bond.

B) appropriate discount rate on the year 10 cash flow for a 20-year bond.

C) yield-to-maturity on a 10-year coupon bond.

Explanation

A 10-year spot rate is the yield-to-maturity on a 10-year zero-coupon security, and is the appropriate discount rate for the year 10 cash flow for a 20-year (or any maturity greater than or equal to 10 years) bond. Spot rates are used to value bonds and to ensure that bond prices eliminate any possibility for arbitrage resulting from buying a coupon security, stripping it of its coupons and principal payment, and reselling the strips as separate zero-coupon securities. The yield to maturity on a 10-year bond is the (complex) average of the spot rates for all its cash flows.

(Study Session 16, Module 52.2, LOS 52.c)

Question #138 of 143

A new-issue, 15-year, $1,000 face value 6.75% semi-annual coupon bond is priced at $1,075. Which of the following describes the bond and the relationship of the bond's market yield to the coupon?

A) Premium bond, required market yield is less than 6.75%.

B) Discount bond, required market yield is greater than 6.75%.

C) Premium bond, required market yield is greater than 6.75%.

Explanation

When the issue price is greater than par, the bond is selling at a premium. We also know that the *current market required rate is less than the coupon rate* of 6.75%, because the bond is selling at a premium.

For the examination, remember the following relationships:

Type of Bond	Market Yield to Coupon	Price to Par
Premium	Market Yield < Coupon	Price > Par
Par	Market Yield = Coupon	Price = Par
Discount	Market Yield > Coupon	Price < Par

(Study Session 16, Module 52.1, LOS 52.b)

Question #139 of 143

An investor buys a 25-year, 10% annual pay bond for $900 and will sell the bond in 5 years when he estimates its yield will be 9%. The price for which the investor expects to sell this bond is *closest to:*

A) $1,091.

B) $1,122.

C) $964.

Explanation

This is a present value problem 5 years in the future.

N = 20, PMT = 100, FV = 1000, I/Y = 9

CPT PV = -1,091.29

The $900 purchase price is not relevant for this problem.

(Study Session 16, Module 52.1, LOS 52.a)

Question #140 of 143

A semiannual-pay bond is callable in five years at $1,080. The bond has an 8% coupon and 15 years to maturity. If an investor pays $895 for the bond today, the yield to call is *closest to*:

A) 12.1%.

B) 9.3%.

C) 10.2%.

Explanation

YTC: N = 10; PV = –895; PMT = 80 / 2 = 40; FV = 1080; CPT → I/Y = 6.035 × 2 = 12.07%.

(Study Session 16, Module 52.3, LOS 52.f)

Question #141 of 143

A 20-year, 9% annual coupon bond selling for $1,098.96 offers a yield of:

A) 9%.

B) 10%.

C) 8%.

Explanation

N = 20, PMT = 90, PV = -1,098.96, FV = 1,000, CPT I/Y

(Study Session 16, Module 52.3, LOS 52.f)

Question #142 of 143

Accrued interest on a bond that is sold between coupon dates is:

A) split between the buyer and seller.

B) paid to the buyer.

C) paid to the seller.

Explanation

Accrued interest from the most recent coupon payment date to the settlement date is owed to the seller of a bond and is included in the full price.

(Study Session 16, Module 52.2, LOS 52.d)

Question #143 of 143

Austin Traynor is considering buying a $1,000 face value, semi-annual coupon bond with a quoted price of 104.75 and accrued interest since the last coupon of $33.50. Ignoring transaction costs, how much will the seller receive at the settlement date?

A) $1,047.50.

B) $1,081.00.

C) $1,014.00.

Explanation

The full price is equal to the flat or clean price plus interest accrued from the last coupon date. Here, the flat price is 1,000 × 104.75%, or 1,000 × 1.0475 = 1,047.50. Thus, the full price = 1,047.50 + 33.50 = 1,081.00.

(Study Session 16, Module 52.2, LOS 52.d)