Question #1 of 139

Question ID: 1458622

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

A) benchmark spot rates.

B) risk-free bond yields.

C) swap rates.

Explanation

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

(Module 44.5, LOS 44.k)

Question #2 of 139

Question ID: 1458618

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

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

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) 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.

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.

(Module 44.5, LOS 44.k)

Question #3 of 139

Question ID: 1458540

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) $102.50.

B) $103.17.

C) $100.00.

Explanation

The bond price is computed as follows:

Bond price = $6/1.055 + (102.50 + 6)/1.055^2$= $103.17

(Module 44.2, LOS 44.c)

Question #4 of 139

Question ID: 1458572

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) 10.65%.

B) 11.25%.

C) 9.50%.

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

(Module 44.3, LOS 44.g)

Question #5 of 139

Question ID: 1458581

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) 6.87.

B) 7.21.

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%

(Module 44.3, LOS 44.g)

Question #6 of 139

Question ID: 1462920

A bond has a yield to maturity of 7% with a periodicity of 4. The bond has a face value of $100,000 and matures in 13 years. Each coupon payment will be $1,800. The current price of the bond is *closest* to:

A) $101,672.

B) $101,698.

C) $102,768.

Explanation

N = 13 × 4 = 52; FV = 100,000; PMT = 1,800; I/Y = 7 / 4 = 1.75; CPT → PV = 101,698.

(Module 44.1, LOS 44.a)

Question #7 of 139

Question ID: 1458539

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) \$97.47.

C) \$98.87.

Explanation

The bond price is computed as follows:

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

(Module 44.2, LOS 44.c)

Question #8 of 139

Question ID: 1458554

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) 3.06%.

B) 6.11%.

C) 7.20%.

Explanation

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

(Module 44.3, LOS 44.f)

Question #9 of 139

Question ID: 1458490

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) \$1,079.

C) \$1,152.

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.

(Module 44.1, LOS 44.a)

Question #10 of 139

Question ID: 1458560

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%

(Module 44.3, LOS 44.f)

Question #11 of 139

Question ID: 1458580

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)	7.78%	15.82%	✗
B)	7.80%	15.72%	✗
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%.**

(Module 44.3, LOS 44.g)

Question #12 of 139

Question ID: 1458528

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

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

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

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

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%.

(Module 44.2, LOS 44.c)

Question #13 of 139

Question ID: 1458551

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) 3.6%.

B) 3.8%.

C) 4.1%.

Explanation

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

(Module 44.2, LOS 44.e)

Question #14 of 139

Question ID: 1458550

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.

(Module 44.2, LOS 44.e)

Question #15 of 139

Question ID: 1458522

For a bond trading at a discount, the current yield will *most likely* be:

A) higher than the yield to maturity.

B) the same as the yield to maturity.

C) lower than the yield to maturity.

Explanation

The current yield (unlike the YTM) ignores movements toward par value along the constant-yield price trajectory, and therefore will not capture the return attributable to a discount bond's increase in price toward par as maturity approaches.

(Module 44.1, LOS 44.b)

Question #16 of 139

Question ID: 1458518

Consider a 10%, 10-year bond sold to yield 8%. If after one year the bond has followed its constant yield price trajectory, its price will *most likely* have:

A) decreased. ✓

B) increased. ✗

C) remained constant. ✗

Explanation

The path that a bond's price follows over its maturity assuming the yield is held constant is known as the constant yield price trajectory. In this case it is being held constant at 8%.

Given the bond is sold at a premium (coupon > YTM), its price will decrease as it moves toward par value.

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

Price after one year: N = 9; FV = 1,000; PMT = 100; I = 8; CPT → PV = 1,125

(Module 44.1, LOS 44.b)

Question #17 of 139

Question ID: 1458600

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

A) maturities. ✗

B) coupon rates. ✗

C) issuers. ✓

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.

(Module 44.4, LOS 44.i)

Question #18 of 139

Question ID: 1458565

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.

(Module 44.3, LOS 44.f)

Question #19 of 139

Question ID: 1458533

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) $912.

B) $968.

C) $1,080.

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.

(Module 44.2, LOS 44.c)

Question #20 of 139

Question ID: 1458547

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) $1,014.00.

B) $1,047.50.

C) $1,081.00.

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.

(Module 44.2, LOS 44.d)

Question #21 of 139

Question ID: 1458559

A 6% bond paying coupons semi-annually has 10 years until maturity. The bond currently trades at 111.5. Its yield to maturity is *closest* to:

A) 4.543.

B) 4.556%.

C) 4.529%.

Explanation

N = 10 × 2 = 20; PV = –111.5; PMT = 6 / 2 = 3; FV = 100.

Compute I/Y = 2.2777 (semiannual) × 2 = 4.5554%.

(Module 44.3, LOS 44.f)

Question #22 of 139

Question ID: 1458587

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.

(Module 44.3, LOS 44.g)

Question #23 of 139

Question ID: 1458584

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) greater than its current yield.

C) equal to 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%

(Module 44.3, LOS 44.g)

Question #24 of 139

Question ID: 1458546

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) $101.68.

C) $105.22.

Explanation

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

(Module 44.2, LOS 44.d)

Question #25 of 139

Question ID: 1458510

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).

(Module 44.1, LOS 44.a)

Question #26 of 139

Question ID: 1458616

The following spot and forward rates currently exist in the market:

- The 1-year spot rate is 3.75%.
- The 1-year forward rate one year from today is 9.50%.
- The 1-year forward rate two years from today is 15.80%.

Given these rates and based on annual compounding, how much should an investor be willing to pay for each $100 in par value for a three-year, zero-coupon bond?

A) $33. ✗

B) $44. ✗

C) $76.

Explanation

The discount rate on an N-year, zero-coupon bond is the spot rate for Year N. Thus, find the spot rate in Year 3:

$(1 + Z_3)^3 = (1.0375) \times (1.095) \times (1.158) = 1.31556$

$Z_3 = (1.31556)^{1/3} – 1 = 0.0957 = 9.573\%$

Now, price this three-year, zero-coupon bond to yield 9.57%:

N = 3; I/Y = 9.57; FV = 100; CPT PV = –76.02 (ignore sign)

Hint: 100 / (1.0375 × 1.095 × 1.158) = 76.02 saves a couple of calculations.

(Module 44.4, LOS 44.j)

Question #27 of 139

Question ID: 1458494

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) $879.

B) $920.

C) $1,091.

Explanation

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

(Module 44.1, LOS 44.a)

Question #28 of 139

Question ID: 1458498

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) $1,067.95.

B) $934.96.

C) $935.82.

Explanation

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

(Module 44.1, LOS 44.a)

Question #29 of 139

Question ID: 1458595

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%.

(Module 44.3, LOS 44.h)

Question #30 of 139

Question ID: 1458603

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 one year from today is 13.7%.

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

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

Explanation

The equation for the three-year spot rate, S_3, is $(1 + S_1)(1 + 1_y1_y)(1 + 2_y1_y) = (1 + S_3)^3$. Also, $(1 + S_1)(1 + 1_y1_y) = (1 + S_2)^2$. So, $(1 + 2_y1_y) = (1 + S_3)^3 / (1 + S_2)^2$, computed as: $(1 + 0.121)^3 / (1 + 0.113)^2 = 1.137$. Thus, $2_y1_y = 0.137$, or 13.7%.

(Module 44.4, LOS 44.j)

Question #31 of 139

Question ID: 1458558

A $1,000 bond with an annual coupon rate of 10% has 10 years to maturity and is currently priced at $800. The bond's yield-to-maturity is *closest* to:

A) 13.8%.

B) 11.7%.

C) 12.6%.

Explanation

FV = 1,000, PMT = 100, N = 10, PV = -800; Compute I/Y = 13.8

(Module 44.3, LOS 44.f)

Question #32 of 139

Question ID: 1458555

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

(Module 44.3, LOS 44.f)

Question #33 of 139

Question ID: 1458504

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) $946.

B) $1,000.

C) $1,079.

Explanation

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

(Module 44.1, LOS 44.a)

Question #34 of 139

Question ID: 1458588

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) current yield.

C) simple 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.

(Module 44.3, LOS 44.g)

Question #35 of 139

Question ID: 1458519

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.

(Module 44.1, LOS 44.b)

Question #36 of 139

Question ID: 1458496

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) $1,075.82.

C) $927.90.

Explanation

FV = 1,000

N = 5

I = 10

PMT = 120

CPT = ?

PV = 1,075.82.

(Module 44.1, LOS 44.a)

Question #37 of 139

Question ID: 1458501

A bond with three years to maturity pays an annual coupon of 6%. Assuming a yield to maturity of 7%, the price as a percent of par *closest* to:

A) 92.03.

B) 102.67.

C) 97.38.

Explanation

This value is computed as follows:

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

Using the calculator:

I/Y = 7; FV = 100; N = 3; PMT = 6; CPT → PV = $97.38

(Module 44.1, LOS 44.a)

Question #38 of 139

Question ID: 1458578

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

A) lowest of all possible prices on the bond.

B) lowest of all possible yields to call.

C) yield given default 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.

(Module 44.3, LOS 44.g)

Question #39 of 139

Question ID: 1458500

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) $1,092.46.

B) $1,125.53.

C) $1,198.07.

Explanation

N = 6

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

I = 8

FV = 1,000

CPT = ?

PV = 1,092.46

(Module 44.1, LOS 44.a)

Question #40 of 139

Question ID: 1458499

A bond offers a 12% coupon paid semiannually and has 15 years left to maturity. Assuming a par value of $1,000 and a yield to maturity of 16%, the price of the bond is *closest* to:

A) $775.

B) $776.

C) $777.

Explanation

The semiannual coupon payment is $1,000 × (0.12 / 2) = $60.

FV = 1,000; PMT = 60; N = 15 × 2 = 30; I/Y = 16 / 2 = 8; CPT → PV = –774.84

(Module 44.1, LOS 44.a)

Question #41 of 139

Question ID: 1458548

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

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

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

C) Actual day counts.

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.

(Module 44.2, LOS 44.d)

Question #42 of 139

Question ID: 1458487

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

A) Spot interest rates will never vary across time.

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

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.

(Module 44.1, LOS 44.a)

Question #43 of 139

Question ID: 1458594

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%.

(Module 44.3, LOS 44.h)

Question #44 of 139

Question ID: 1458582

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

A) 2.68%.

B) 5.00%.

C) 5.37%.

Explanation

The current yield is computed as follows:

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

(Module 44.3, LOS 44.g)

Question #45 of 139

Question ID: 1462928

The 3-year annual spot rate is 7%, the 4-year annual spot rate is 7.5%, and the 5-year annual spot rate is 8%. The 1-year forward rate four years from now is *closest* to:

A) 7%.

B) 9%.

C) 10%.

Explanation

Implied 1-year forward rate in four years = $\frac{(1+S_5)^5}{(1+S_4)^4} - 1 = \frac{1.08^5}{1.075^4} - 1 = \frac{1.4693}{1.3355} - 1$ = 0.1002 or 10.02%. Alternatively, 5 × 8% – 4 × 7.5% = 10%.

(Module 44.4, LOS 44.j)

Question #46 of 139

Question ID: 1458493

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) $952.85.

B) $569.52.

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.

(Module 44.1, LOS 44.a)

Question #47 of 139

Question ID: 1458573

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) 14.97%.

C) 9.25%.

Explanation

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

Compute I = 14.97

(Module 44.3, LOS 44.g)

Question #48 of 139

Question ID: 1458574

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) 8.0%.

B) 8.4%.

C) 9.2%.

Explanation

Input into your calculator:

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

(Module 44.3, LOS 44.g)

Question #49 of 139

Question ID: 1458575

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

A) 14.00%.

B) 14.74%.

C) 15.36%.

Explanation

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

140/950 × 100 = 14.74

(Module 44.3, LOS 44.g)

Question #50 of 139

Question ID: 1462922

An annual-pay, 4% coupon, 10-year bond has a yield to maturity of 5.2%. If the price of this bond is unchanged two years later, its yield to maturity at that time is:

A) greater than 5.2%.

B) less than 5.2%.

C) 5.2%.

Explanation

This bond is priced at a discount to par value because its 4% coupon is less than its 5.2% yield to maturity. As the bond gets closer to maturity, the discount will amortize toward par value, which means its price will increase if its yield remains unchanged. For its price to remain unchanged, its yield would have to increase.

Price with 10 years to maturity:

N = 10; I/Y = 5.2; PMT = 40; FV = 1,000; CPT PV = –908.23

Yield with 8 years to maturity:

N = 8; PMT = 40; FV = 1,000; PV = –908.23; CPT I/Y = 5.446%

(Module 44.1, LOS 44.b)

Question #51 of 139

Question ID: 1462925

Jorge Fullen is evaluating a 7%, 10-year bond that is callable at par in 5 years. Coupon payments can be reinvested at an annual rate of 7%, and the current price of the bond is $1,065.00 per $1,000 of face value. The bond pays interest semiannually. Should Fullen consider the yield to first call (YTC) or the yield to maturity (YTM) in making his purchase decision?

A) YTM, since YTM is greater than YTC.

B) YTC, since YTC is less than YTM.

C) YTC, since YTC is greater than YTM.

Explanation

The bond is trading at a premium, and if the bond is called at par that premium would be amortized over a shorter period, resulting in a lower return. The lower return is the more conservative number, so the YTC should be used. You could use your financial calculator to solve for YTC assuming 10 semiannual coupon payments of $35 (FV = 1,000; PMT = 35; PV = –1,065; N = 10; solve for i = 2.75; × 2 to get annual YTC = 5.5%). Calculation of YTM would use the same inputs except N = 20, to get YTM = 6.12%

(Module 44.3, LOS 44.g)

Question #52 of 139

Question ID: 1458605

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) 6.51%.

B) 6.57%.

C) 6.58%.

Explanation

The four-year spot rate is computed as follows:

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

(Module 44.4, LOS 44.j)

Question #53 of 139

Question ID: 1458604

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: 1_y1_y = 0.062; 2_y1_y = 0.063; 3_y1_y = 0.065, what is the theoretical 4-year spot rate?

A) 6.75%.

B) 6.00%.

C) 6.25%.

Explanation

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

(Module 44.4, LOS 44.j)

Question #54 of 139

Question ID: 1458608

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%

(Module 44.4, LOS 44.j)

Question #55 of 139

Question ID: 1458612

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) 3.5%.

C) 5.6%.

Explanation

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

(Module 44.4, LOS 44.j)

Question #56 of 139

Question ID: 1462924

If the yield curve is downward-sloping, the no-arbitrage value of a bond calculated using spot rates will be:

A) greater than the market price of the bond.

B) equal to the market price of the bond.

C) less than the market price of the bond.

Explanation

The value of a bond calculated using appropriate spot rates is its no-arbitrage value. If no arbitrage opportunities are present, this value is equal to the market price of a bond.

(Module 44.2, LOS 44.c)

Question #57 of 139

Question ID: 1458596

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 360-day year.

C) discount yield based on a 365-day year.

Explanation

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

(Module 44.3, LOS 44.h)

Question #58 of 139

Question ID: 1458508

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) $779.01.

B) $78.29.

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.

(Module 44.1, LOS 44.a)

Question #59 of 139

Question ID: 1458532

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

A) $966.

B) $992.

C) $1,039.

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. 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.

(Module 44.2, LOS 44.c)

Question #60 of 139

Question ID: 1458497

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) between 10% and 12%.

B) between 13% and 14%.

C) over 14%.

Explanation

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

(Module 44.1, LOS 44.a)

Question #61 of 139

Question ID: 1458607

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) 8.61%.

C) 8.34%.

Explanation

The forward rate is computed as follows:

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

(Module 44.4, LOS 44.j)

Question #62 of 139

Question ID: 1458567

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) 10.4%.

B) 11.9%.

C) 8.7%.

Explanation

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

(Module 44.3, LOS 44.g)

Question #63 of 139

Question ID: 1458511

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) $170.

B) $480.

C) $1,160.

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.

(Module 44.1, LOS 44.a)

Question #64 of 139

Question ID: 1458589

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) 10.2%. ✗

B) 12.1%. ✓

C) 9.3%. ✗

Explanation

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

(Module 44.3, LOS 44.g)

Question #65 of 139

Question ID: 1458523

Other things equal, for option-free bonds:

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

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

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

(Module 44.1, LOS 44.b)

Question #66 of 139

Question ID: 1458492

A 7% callable semiannual-pay bond with a $1,000 face value has 20 years to maturity. If the yield to maturity is 8.25% and the yield to call is 9.25% the value of the bond is *closest* to:

A) $797.

B) $879.

C) $836.

Explanation

The price of a bond is equal to the present value of future cash flows discounted at the yield to maturity.

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

Compute PV = 878.56.

Note that the yield to call cannot be used here to calculate the bond value, because the call date is not given.

(Module 44.1, LOS 44.a)

Question #67 of 139

Question ID: 1458509

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) No, the bond is overvalued by $64.

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

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

Explanation

FV = 1,000

PMT = 37.5

N = 12

I/Y = 3%

CPT PV = –1,074.66

1,074.66 – 1,011 = 64

(Module 44.1, LOS 44.a)

Question #68 of 139

Question ID: 1458520

If yields do not change over the life of a zero-coupon bond, its price will *least likely*:

A) approach par value.

B) follow the bond’s constant-yield price trajectory.

C) remain constant.

Explanation

A zero coupon bond will be issued at a discount (yield > coupon). If market rates remain constant, the price will rise toward par value as maturity approaches. The path that the price takes if the yield does not change is known as the constant-yield price trajectory.

(Module 44.1, LOS 44.b)

Question #69 of 139

Question ID: 1458621

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 option adjusted spread of Bond Y will be greater than its zero-volatility spread.

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

(Module 44.5, LOS 44.k)

Question #70 of 139

Question ID: 1458534

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

A) geometric average of the spot interest rates. ✗

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

C) use of a single discount factor. ✗

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.

(Module 44.2, LOS 44.c)

Question #71 of 139

Question ID: 1458590

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 the corporate bond yield to actual months and years. ✓

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

C) Adjust the government 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.

(Module 44.3, LOS 44.g)

Question #72 of 139

Question ID: 1458610

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) 5.00%.

B) 7.87%.

C) 8.02%.

Explanation

The forward rate is computed as follows:

One-year forward rate = 1.065^2 / 1.05 – 1 = 8.02%

(Module 44.4, LOS 44.j)

Question #73 of 139

Question ID: 1458512

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.

(Module 44.1, LOS 44.a)

Question #74 of 139

Question ID: 1458592

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) 8.3%.

B) 8.9%.

C) 8.6%.

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%

(Module 44.3, LOS 44.g)

Question #75 of 139

Question ID: 1458570

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)	9.1%	higher
B)	8.9%	lower
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

(Module 44.3, LOS 44.g)

Question #76 of 139

Question ID: 1458545

In the context of bonds, accrued interest:

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

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

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

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*."

(Module 44.2, LOS 44.d)

Question #77 of 139

Question ID: 1458536

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

C) 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 at 9.2% to find the bond's arbitrage-free value.

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.

(Module 44.2, LOS 44.c)

Question #78 of 139

Question ID: 1462919

Parsons Inc. is issuing an annual-pay bond that will pay no coupon for the first five years and then pay a 10% coupon for the remaining five years to maturity. The 10% coupon interest for the first five years will all be paid (without additional interest) at maturity. If the annual YTM on this bond is 10%, the price of the bond per $1,000 of face value is *closest* to:

A) $814.

B) $856.

C) $778.

Explanation

This bond has no cash flows for the first five years. It then has a $100 cash flow for years 6 through 10. Additionally, the accrued interest ($500) that wasn't paid in the first five years would have to be paid at the end, along with the principal. A financial calculator using the CF/NPV worksheet can handle this type of problem. The required inputs are CF_0 = 0, CF_1 = 0, F_1 = 5, CF_2 = 100, F_2 = 4, CF_3 = 1,600, F_3 = 1, NPV, I = 10%, CPT = 813.69. Note that CF_3 is made up of the principal ($1,000) plus the remaining $100 coupon plus the accrued interest ($500) that was not paid during the first five years of the bond's life.

(Module 44.1, LOS 44.a)

Question #79 of 139

Question ID: 1458568

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) 4.72%.

C) 5.16%.

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%.

(Module 44.3, LOS 44.g)

Question #80 of 139

Question ID: 1458597

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) equal to 1.5%.

B) higher than 1.5%.

C) lower than 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%.

(Module 44.3, LOS 44.h)

Question #81 of 139

Question ID: 1458583

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.

(Module 44.3, LOS 44.g)

Question #82 of 139

Question ID: 1458488

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) $1,068.72.

B) $1,052.17.

C) $1,044.33.

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.

(Module 44.1, LOS 44.a)

Question #83 of 139

Question ID: 1458491

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) $1,095.

B) $1,196.

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.

(Module 44.1, LOS 44.a)

Question #84 of 139

Question ID: 1458599

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

A) zero-coupon bonds.

B) money market securities.

C) government bonds.

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.

(Module 44.4, LOS 44.i)

Question #85 of 139

Question ID: 1458606

Given that the 2-year spot rate is 5.76% and the 3-year spot rate is 6.11%, what is the 1-year forward rate starting two years from now?

A) 6.81%.

B) 6.97%.

C) 7.04%.

Explanation

$(1 + S_3)^3 = (1 + S_2)^2(1 + 2y1y)$

$(1 + 2y1y) = (1 + S_3)^3 / (1 + S_2)^2$

$(1 + 2y1y) = (1.0611)^3 / (1.0576)^2 = 1.0681$

2y1y = 6.81%

(Module 44.4, LOS 44.j)

Question #86 of 139

Question ID: 1458521

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.

(Module 44.1, LOS 44.b)

Question #87 of 139

Question ID: 1458602

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

$_{5y}1_y = [(1 + S_6)^6 / (1 + S_5)^5] - 1 = [(1.07)^6/(1.06)^5] – 1 = [1.5 / 1.338] - 1 = 0.12$

(Module 44.4, LOS 44.j)

Question #88 of 139

Question ID: 1458529

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

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

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

C) yield-to-maturity on a 10-year zero-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.

(Module 44.2, LOS 44.c)

Question #89 of 139

Question ID: 1458609

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) 5.67%.

B) 5.73%.

C) 5.91%.

Explanation

The spot rate is computed as follows:

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

(Module 44.4, LOS 44.j)

Question #90 of 139

Question ID: 1458543

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

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

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

C) risk-free rate.

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.

(Module 44.2, LOS 44.c)

Question #91 of 139

Question ID: 1458598

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

A) Zero-coupon bond yield curve.

B) Forward yield curve rate.

C) Par bond yield curve.

Explanation

The spot rate yield curve shows the appropriate rates for discounting single cash flows occurring 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.

(Module 44.4, LOS 44.i)

Question #92 of 139

Question ID: 1458506

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) $106.34.

B) $107.31.

C) $98.83.

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.

(Module 44.1, LOS 44.a)

Question #93 of 139

Question ID: 1458566

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.

(Module 44.3, LOS 44.f)

Question #94 of 139

Question ID: 1458541

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 today of a 4-year, $1,000 par value, zero-coupon bond is *closest* to:

A) $640.

B) $700.

C) $665.

Explanation

Based on the given spot and forward rates, the 4-year spot rate equals $[(1.07)(1.0815)(1.103)(1.120)]^{1/4} – 1 = 9.35\%$.

Bond value: N = 4; FV = 1,000; I/Y = 9.35; PMT = 0; CPT → PV = –699.40

(Module 44.2, LOS 44.c)

Question #95 of 139

Question ID: 1462927

An analyst collects the following information regarding spot rates:

- 1-year rate = 4%.
- 2-year rate = 5%.
- 3-year rate = 6%.
- 4-year rate = 7%.

The 2-year forward rate two years from today is *closest* to:

A) 7.02%.

B) 9.04%.

C) 8.03%.

Explanation

$$\sqrt{\frac{(1.07)^4}{(1.05)^2}} - 1 = 0.0904, \text{ or } \frac{(4\times7)-(2\times5)}{2} = 9 \text{ as an approximation.}$$

(Module 44.4, LOS 44.j)

Question #96 of 139

Question ID: 1458586

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

A) the note's credit quality has improved.

B) the note is priced at a discount.

C) the reference rate has decreased.

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.

The discount margin may be different from quoted margin if a note's credit quality has changed since issuance. If there is an improvement in credit quality, the discount margin will be less than quoted margin and the note will trade at a premium.

Changes in the reference rate will not impact the relative difference between the discount and quoted margin.

(Module 44.3, LOS 44.g)

Question #97 of 139

Question ID: 1458505

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) -0.84.

C) 0.00.

Explanation

The bond price change is computed as follows:

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

(Module 44.1, LOS 44.a)

Question #98 of 139

Question ID: 1458503

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) $964.

B) $1,091.

C) $1,122.

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.

(Module 44.1, LOS 44.a)

Question #99 of 139

Question ID: 1462923

A 10-year, 5% bond is issued at a price to yield 5.2%. Three months after issuance, the yield on this bond has decreased by 100 basis points. The price of this bond at issuance and three months later is:

A) above par at issuance, but below par three months later.

B) below par at issuance, but above par three months later.

C) below par at issuance, and below par three months later.

Explanation

A bond issued at a yield higher than its coupon will be priced below par, or at a discount. Three months later, the yield has declined to 4.2% and the bond will trade at a premium to par, reflecting the fact that the coupon is now higher than the yield.

(Module 44.1, LOS 44.b)

Question #100 of 139

Question ID: 1458553

A 20-year bond pays an annual coupon of 6% and has a par value of $1,000. If its current yield is 7%, its yield to maturity is *closest* to:

A) 7.4%.

B) 7.0%.

C) 8.6%.

Explanation

We are given N, FV, and PMT, but to calculate the yield to maturity I/Y we also need the bond's current price (PV). We can use the given current yield to determine the price:

Because current yield = annual interest / price, we can state:

Price = annual interest / current yield

= $60 /0.07%

= $857.143

Therefore: N = 20; FV = 1,000; PMT = 60; PV = –857.143; CPT → I/Y = 7.3896%

(Module 44.3, LOS 44.f)

Question #101 of 139

Question ID: 1458535

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) $937.66.

C) $995.06.

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.

(Module 44.2, LOS 44.c)

Question #102 of 139

Question ID: 1458489

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 if the yield is unchanged?

	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 priced 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 priced 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

(Module 44.1, LOS 44.a)

Question #103 of 139

Question ID: 1458585

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) 7.65%.

C) 7.75%.

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%.

(Module 44.3, LOS 44.g)

Question #104 of 139

Question ID: 1458617

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 Galaxy Motors due in 5 years has a yield of 9.9%. A bond issued by Exe due in one year has a yield of 9.4%. The yield spreads on the bonds issued by Exe and Galaxy Motors are:

	Exe	Galaxy Motors
A)	0.1%	0.6%
B)	0.1%	1.4%
C)	0.9%	0.6%

Explanation

9.4 – 8.5 = 0.9

9.9 – 9.3 = 0.6

(Module 44.5, LOS 44.k)

Question #105 of 139

Question ID: 1458579

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) 6.00%.

B) 7.02%.

C) 7.14%.

Explanation

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

(Module 44.3, LOS 44.g)

Question #106 of 139

Question ID: 1462930

The bonds of Grinder Corp. trade at a G-spread of 150 basis points above comparable maturity U.S. Treasury securities. The option adjusted spread (OAS) on the Grinder bonds is 75 basis points. Using this information, and assuming that the Treasury yield curve is flat:

A) the zero-volatility spread is 225 basis points.

B) the option cost is 75 basis points.

C) the zero-volatility spread is 75 basis points.

Explanation

The option cost is the difference between the zero volatility spread and the OAS, or 150 − 75 = 75 bp. With a flat yield curve, the G-spread and zero volatility spread will be the same.

(Module 44.5, LOS 44.k)

Question #107 of 139

Question ID: 1458549

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) $847.69.

B) $935.12.

C) $891.40.

Explanation

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

(Module 44.2, LOS 44.d)

Question #108 of 139

Question ID: 1458530

Assume the following government spot yield curve.

One-year rate: 5%

Two-year rate: 6%

Three-year rate: 7%

If a 3-year annual-pay government 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 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%

(Module 44.2, LOS 44.c)

Question #109 of 139

Question ID: 1458576

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) 10.25%.

B) 10.95%.

C) 11.25%.

Explanation

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

(5.47546)(2) = 10.95

(Module 44.3, LOS 44.g)

Question #110 of 139

Question ID: 1458619

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) flat.

C) upward sloping.

Explanation

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

(Module 44.5, LOS 44.k)

Question #111 of 139

Question ID: 1462926

The current 4-year spot rate is 4% and the current 5-year spot rate is 5.5%. What is the 1-year forward rate in four years?

A) 11.72%.

B) 9.58%.

C) 10.14%.

Explanation

$$4y1y = \frac{(1.055)^5}{(1.04)^4} - 1 = 0.1172$$

Note: 5(5.5) − 4(4) = 11.5%.

(Module 44.4, LOS 44.j)

Question #112 of 139

Question ID: 1458517

Consider a 10%, 10-year bond sold to yield 8%. One year passes and interest rates remained unchanged (8%). If after one year the bond has followed its constant yield price trajectory, its price will *most likely* have:

A) increased.

B) decreased.

C) remained constant.

Explanation

The path that a bond's price follows over its maturity assuming the yield is held constant is known as the constant yield price trajectory. In this case it is being held constant at 8%.

Given the bond is sold at a premium (coupon > YTM), its price will decrease as it moves toward par value.

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

Price after one year: N = 9; FV = 1,000; PMT = 100; I = 8; CPT → PV = 1,125

(Module 44.1, LOS 44.b)

Question #113 of 139

Question ID: 1458502

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) $5,000,000.

B) $5,743,874.

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

(Module 44.1, LOS 44.a)

Question #114 of 139

Question ID: 1458538

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.

(Module 44.2, LOS 44.c)

Question #115 of 139

Question ID: 1458562

A bond with a 12% semiannual coupon is currently trading at 102.25 per 100 of face value and has 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%.

(Module 44.3, LOS 44.f)

Question #116 of 139

Question ID: 1458516

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

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

C) Premium bond, required market yield is less 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

(Module 44.1, LOS 44.b)

Question #117 of 139

Question ID: 1458537

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%. 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.

(Module 44.2, LOS 44.c)

Question #118 of 139

Question ID: 1462921

An investor purchases a $1,000 5% coupon bond with quarterly coupon payments that matures in 12 years and has a yield to maturity of 7.0%. The price the investor pays is *closest* to:

A) $838.53. ✓

B) $839.42. ✗

C) $841.15. ✗

Explanation

N = 12 × 4 = 48, FV = 1,000, PMT = 50/4 = 12.5, I/Y = 7.0/4 = 1.75; CPT PV = −838.53.

(Module 44.1, LOS 44.a)

Question #119 of 139

Question ID: 1462931

For a callable bond, the option-adjusted spread (OAS):

A) is less than the zero-volatility spread. ✓

B) is greater than the zero-volatility spread. ✗

C) can be greater than or equal to the zero-volatility spread. ✗

Explanation

For a callable bond, the OAS is less than the zero-volatility spread because of the extra yield required to compensate the bondholder for the call option.

(Module 44.5, LOS 44.k)

Question #120 of 139

Question ID: 1462929

If a callable bond has an option-adjusted spread (OAS) of 75 basis points, this *most likely* suggests:

A) the 75 basis points represent the investor's compensation for credit risk, liquidity risk, and volatility risk. ✗

B) the implied cost of the call option is the bond's nominal spread minus 75 basis points. ✗

C) the bond has a zero-volatility spread greater than 75 basis points. ✓

Explanation

For a bond with an embedded call option, the OAS is less than its zero-volatility spread by the option cost. Therefore, the zero-volatility spread is greater than the OAS for callable bonds. If the embedded call option has any value to the issuer, a callable bond with an OAS of 75 basis points will have a *Z*-spread that is greater than 75 basis points.

Because the OAS represents the bond's spread to the spot yield curve excluding the effect of the embedded option, it does not include any compensation for the volatility risk related to the option. The implied cost of an embedded option is the difference between the bond's zero-volatility spread (not the nominal spread) and its OAS.

(Module 44.5, LOS 44.k)

Question #121 of 139

Question ID: 1458495

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) $1,135.90. ✗

B) $875.38. ✓

C) $877.11. ✗

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.

(Module 44.1, LOS 44.a)

Question #122 of 139

Question ID: 1458507

The value of a 10 year zero-coupon bond with a par value of $1,000, yielding 9.6% on a semiannual-bond basis, is *closest* to:

A) $410. ✗

B) $390. ✓

C) $400. ✗

Explanation

Because the yield is quoted on a semiannual-bond basis, we must divide the yield by 2 to get the bond's 6-month holding period yield, and multiply the number of years by 2 to get the number of semiannual periods to maturity.

I/Y = 9.6 / 2 = 4.8; FV = 1,000; N = 10 × 2 = 20; PMT = 0; CPT → PV = –391.54

(Module 44.1, LOS 44.a)

Question #123 of 139

Question ID: 1458569

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) 14.92%. ✗

C) 7.73%. ✗

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%.

(Module 44.3, LOS 44.g)

Question #124 of 139

Question ID: 1458564

Venenata 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) 5.42%.

B) 5.33%.

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: $2 \times [(1 + 0.0533)^{0.5} - 1] = 0.0526 = 5.26\%$.

(Module 44.3, LOS 44.f)

Question #125 of 139

Question ID: 1458620

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) +210 basis points.

B) +270 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.

(Module 44.5, LOS 44.k)

Question #126 of 139

Question ID: 1458531

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) 95.07.

B) 102.46.

C) 100.10.

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.

(Module 44.2, LOS 44.c)

Question #127 of 139

Question ID: 1458524

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

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

C) discount, and the yield to maturity has increased 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.

(Module 44.1, LOS 44.b)

Question #128 of 139

Question ID: 1458563

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

A) 5.52%.

B) 5.60%.

C) 5.68%.

Explanation

The annual-pay yield is computed as follows:

Annual-pay yield = $[(1 + 0.056 / 2)^2 - 1 = 5.68\%$

(Module 44.3, LOS 44.f)

Question #129 of 139

Question ID: 1458591

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) higher.

B) lower.

C) the same.

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.

(Module 44.3, LOS 44.g)

Question #130 of 139

Question ID: 1458556

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

A) 11.43%.

B) 5.81%.

C) 11.62%.

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%.

(Module 44.3, LOS 44.f)

Question #131 of 139

Question ID: 1458542

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.

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

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

$$976 - 956.78 = \$19.22$$

(Module 44.2, LOS 44.c)

Question #132 of 139

Question ID: 1458601

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) 4%.

B) 5%.

C) 6%.

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

(Module 44.4, LOS 44.j)

Question #133 of 139

Question ID: 1458577

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) 3.91%.

B) 7.28%.

C) 7.82%.

Explanation

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

3.91054 × 2 = 7.82

(Module 44.3, LOS 44.g)

Question #134 of 139

Question ID: 1458557

A 10% annual coupon, $1,000 par value bond that matures in 5 years is priced at 92.8. Its yield to maturity is *closest* to:

A) 12%.

B) 10%.

C) 11%.

Explanation

The YTM can be calculated using money values or percent-of par values.

Using percent of par: N = 5; FV = 100; PMT = 10; PV = –92.8; CPT I/Y = 11.9972.

Using money values: N = 5; FV = 1,000; PMT = 100; PV = –928; CPT I/Y = 11.9972.

(Module 44.3, LOS 44.f)

Question #135 of 139

Question ID: 1458611

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

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

(Module 44.4, LOS 44.j)

Question #136 of 139

Question ID: 1458525

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.

(Module 44.1, LOS 44.b)

Question #137 of 139

Question ID: 1458561

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

A) 10.93%. ✓

B) 9.23%. ✗

C) 11.23%. ✗

Explanation

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

(Module 44.3, LOS 44.f)

Question #138 of 139

Question ID: 1458571

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)	8.93%	11.02%	✓
B)	8.93%	5.51%	✗
C)	9.83%	19.80%	✗

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%**.

(Module 44.3, LOS 44.g)

Question #139 of 139

Question ID: 1458552

Matrix pricing is used primarily for pricing bonds that:

A) have low liquidity. ✓

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

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

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.

(Module 44.2, LOS 44.e)