Question #1 of 80

The active bond portfolio management strategy of rolling down the yield curve is *most consistent* with:

A) segmented markets theory.

B) pure expectations theory.

C) liquidity preference theory.

Question #2 of 80

Assume that the interest rates in the future are not expected to differ from current spot rates. In such a case, the liquidity premium theory of the term structure of interest rates projects that the shape of the yield curve will be:

A) upward sloping.

B) variable.

C) downward sloping.

Question #3 of 80

A 2-year $1,000 par, 5% (semi-annual pay) Mexa-corp bond has a Z-spread of 45bps. Using the following spot curve, compute the invoice price of the bond.

Maturity	0.50	1.00	1.50	2.00
Spot rates	4.50%	5%	5.25%	5.5%

A) $993.45

B) $982.65

C) $956.32

Question #4 of 80

Suppose that the short-term and long-term rates decrease by 75bps while the intermediate-term rates decrease by 30bps. The movement in yield curve is *best* described as involving changes in the:

A) level only.

B) curvature only.

C) level and curvature.

Question #5 of 80

Suppose the government spot rate curve is flat at 3%. An active manager is planning on purchasing a five-year government bond at par. The realized return on this bond will *most likely* be:

A) more than 3% if the bond is held to maturity while the yield curve remains flat but decreases below 3%.

B) 3% if the bond is held to maturity regardless of the shape of the yield curve.

C) 3% if the bond is held to maturity provided that the yield curve remains flat at 3%.

Question #6 of 80

Use the following spot rate curve to answer this question:

Maturity	1	2	3
Spot rates	5%	5.5%	6%

The price of a 1-year $1 par, zero-coupon bond to be issued in two years is *closest* to:

A) $0.8396

B) $0.9434

C) $0.9345

Question #7 of 80

7.5%, 15-year, annual pay option-free Xeleon Corp bond trades at a market price of $95.72 per $100 par. The government spot rate curve is flat at 5%.

The Z-spread on Xeleon Corp bond is *closest* to:

A) 300 bps

B) 325 bps

C) 250 bps

Question #8 of 80

Jill Sebelius, editor-in-chief of a monthly interest-rate newsletter uses the following model to forecast short-term interest rates:

$$dr = a(b - r)\,dt + \sigma\sqrt{r}dz$$

For the current newsletter, Sebelius has issued the following expectations:

a=0.40, b = 3%, r = 2%.

Sebelius's model is *most accurately* described as the:

A) Cox-Ingersoll-Ross model.

B) Ho-Lee model.

C) Vasicek model.

Question #9 of 80

Which of the following *best* describes key rate duration? Key rate duration is determined by:

A) changing the yield of a specific maturity.

B) shifting the whole yield curve in a parallel manner.

C) changing the curvature of the entire yield curve.

Question #10 of 80

Jorgen Welsher, CFA obtains the following quotes for zero coupon government bonds all with a par value of $100.

Type of Price	Delivery (years)	Maturity (years)	Price
Spot	0	3	$91.51
Forward	2	3	$94.55
Spot	0	2	$92.45

Welsher can earn arbitrage profits by:

A) buying the 2-year bond in the spot market, going long the forward contract and selling the 3-year bond in the spot market.

B) selling the 2-year bond in the spot market, going short the forward contract and buying the 3-year bond in the spot market.

C) buying the 2-year bond in the spot market, going short the forward contract and selling the 3-year bond in the spot market.

Question #11 of 80

Joe McBath makes the following two statements:

Statement 1: The swap rate curve indicates credit spread over government bond yield.

Statement 2: The swap rate curve indicates the premium for time value of money at different maturities.

Joseph is *most likely* correct with regard to:

A) Statement 2 but not statement 1.

B) Statement 1 but not statement 2.

C) Both statements.

Question #12 of 80

What are the implications for the shape of the yield curve according to the liquidity theory? The yield curve:

A) may have any shape.

B) is always flat.

C) must be upward sloping.

Question #13 of 80

If the 2-year spot rate is 4% and 1-year spot rate is 7%, the one year forward rate one year from now is *closest* to:

A) 3%

B) 1%

C) 2%

Question #14 of 80

Jill Sebelius, editor-in-chief of a monthly interest-rate newsletter uses the following model to forecast short-term interest rates:

$$dr = a(b - r)\,dt + \sigma\sqrt{r}dz$$

For the current newsletter, Sebelius has issued the following expectations:

a=0.40, b = 3%, r = 2%.

According to the model used by Sebelius, volatility in the short-term in interest rate is *most likely*:

A) independent of the current level of the short-term interest rate.

B) negatively related to the current level of the short-term interest rate.

C) positively related to the current level of the short-term interest rate.

Question #15 of 80

An analyst has a list of key rate durations for a portfolio of bonds. If only one interest rate on the yield curve changes, the effect on the value of the bond portfolio will be the change of that rate multiplied by the:

A) weighted average of the key rate durations.

B) key rate duration associated with the maturity of the rate that changed.

C) median of the key rate durations.

Question #16 of 80

According to the pure expectations theory, how are forward rates interpreted? Forward rates are:

A) expected future spot rates.

B) expected future spot rates if the risk premium is equal to zero.

C) equal to futures rates.

Question #17 of 80

Assuming the pure expectations theory is correct, an upward sloping yield curve implies:

A) interest rates are expected to decline in the future.

B) interest rates are expected to increase in the future.

C) longer-term bonds are riskier than short-term bonds.

Question #18 of 80

The following are some of the current par rates:

Year	Par rate
1	1.00%
2	2.00%
3	3.00%
4	4.00%
5	5.00%

Using bootstrapping, the 2-year spot rate is *closest* to:

A) 2.25%

B) 2.01%

C) 1.50%

Question #19 of 80

The following are some of the current par rates:

Year	Par rate
1	5.00%
2	6.00%
3	7.00%

Using bootstrapping, the 3-year spot rate is *closest* to:

A) 6.93%

B) 7.09%

C) 6.67%

Question #20 of 80

For an interest rate swap, the swap spread is the difference between the:

A) swap rate and the corresponding Treasury rate.

B) fixed rate and the floating rate in a given period.

C) average fixed rate and the average floating rate over the life of the contract.

Question #21 of 80

Prices of zero-coupon, $1 par bonds is shown below:

Maturity (years)	Price
1	$0.9615
2	$0.9070
3	$0.8396
4	$0.7629

The default risk of these bonds is similar to the default risk of surveyed banks based on which the swap rate is determined.

Government spot rate curve is given below:

Maturity (years)	Rate
1	3.05%
2	4.10%
3	5.25%
4	6.45%

The three-year swap spread is closest to:

A) 78 bps.

B) 67 bps.

C) 110 bps.

Question #22 of 80

It is now January 1, 20x7. The one-year spot rate now is exactly equal to the one-year forward rate for a loan in one year as of January 1, 20x6. The current forward price of $1 par, zero-coupon bond for delivery on January 1, 20x8 will *most likely* be:

A) lower than it was on January 1, 20x6.

B) the same as it was on January 1, 20x6.

C) higher than it was on January 1, 20x6.

Question #23 of 80

A swap spread is the difference between:

A) the fixed-rate and floating-rate payment rates at the inception of the swap.

B) the fixed rate on an interest rate swap and the rate on a Treasury bond of maturity equal to that of the swap.

C) LIBOR and the fixed rate on the swap.

Question #24 of 80

If the spot curve is upward sloping, the forward curve is *most likely* to be:

A) steeper than the spot curve and above the spot curve.

B) parallel to the spot curve and below the spot curve.

C) parallel to the spot curve and above the spot curve.

Question #25 of 80

Which one of the following actions is *most consistent* with the strategy of riding an upward sloping the yield curve? Buying bonds with a maturity:

A) equal to the investor's horizon.

B) longer than than the investor's horizon.

C) shorter than the investor's horizon.

Question #26 of 80

When the yield curve is downward sloping, the TED spread is *most likely* to be:

A) positive.

B) negative.

C) zero.

Question #27 of 80

Jim Malone, CIO of Sigma bond fund had a successful track record of investing in investment grade bonds. Recently though, Sigma has been lagging its peers because Malone refuses to reduce the duration of the portfolio by purchasing short-term bonds for the fund. Malone's actions are *most consistent* with:

A) Liquidity preference theory.

B) Preferred habitat theory.

C) Segmented markets theory.

Question #28 of 80

Credit risk in the banking system is most accurately captured by the:

A) 10-year swap spread.

B) TED spread.

C) I-spread.

Question #29 of 80

Compared to a yield curve based on government bonds, swap rate curves are:

A) more comparable across countries and have a smaller number of yields at various maturities.

B) more comparable across countries and have a greater number of yields at various maturities.

C) less comparable across countries and have a greater number of yields at various maturities.

Question #30 of 80

The swap spread will increase with:

A) an increase in the credit spread embedded in the reference.

B) the variability of interest rates.

C) a deterioration in one party's credit.

Question #31 of 80

During the recent credit crises in the country of Maltovia, several money market funds reported large losses. Subsequently, the Maltovian regulatory body imposed strict restrictions on maturity of securities that money market funds could invest in. The reaction of Maltovian regulatory body was *most likely* based on a belief in:

A) preferred habitat theory

B) market segmentation theory.

C) local expectations theory.

Question #32 of 80

Which of the following *most* accurately explains the "break-even-rate" interpretation of forward rates? The forward rate is the rate that will make an investor indifferent between investing:

A) now or at a forward time.

B) investing at the spot or forward interest rate.

C) for the full investment horizon, or for part of it, and then rolling over the proceeds for the balance of the investment horizon at the forward rate.

Question #33 of 80

The *least* important factor explaining the changes in the shape of the yield curve is:

A) Curvature

B) Steepness

C) Level

Question #34 of 80

Which of the following is NOT a reason why market participants prefer the swap rate curve over a government bond yield curve? The swap market:

A) reflects sovereign credit risk.

B) is free of government regulation.

C) it is not affected by technical factors.

Question #35 of 80

Volatility in long-term rates is *most likely* related to uncertainty about:

A) fiscal policy.

B) central bank actions.

C) the real economy and inflation.

Question #36 of 80

The liquidity theory of the term structure of interest rates is a variation of the pure expectations theory that explains why:

A) the yield curve usually slopes upward.

B) the yield curve usually slopes downward.

C) duration is an imprecise measure.

Question #37 of 80

Volatility in short-term rates is *most likely* related to uncertainty about:

A) monetary policy.

B) the real economy.

C) inflation.

Question #38 of 80

Natalia Berg, CFA, has estimated the key rate durations for several maturities in three of her $25 million bond portfolios, as shown in Exhibit 1.

Exhibit 1: Key Rate Durations for Three Fixed-Income Portfolios

Key Rate Maturity	Portfolio 1	Portfolio 2	Portfolio 3
2-year	2.45	0.35	1.26
5-year	0.20	0.40	1.27
10-year	0.15	4.00	1.23
20-year	2.20	0.25	1.24
Total	5.00	5.00	5.00

At a fixed-income conference in London, Berg hears a presentation by a university professor on the increasing use of the swap rate curve as a benchmark instead of the government bond yield curve. When Berg returns from the conference, she realizes she has left her notes from the presentation on the airplane. However, she is very interested in learning more about whether she should consider using the swap rate curve in her work.

As she tries to reconstruct what was said at the conference, she writes down two advantages to using the swap rate curve:

Statement 1: The swap rate curve typically has yield quotes at 11 maturities between 2 and 30 years. The U.S. government bond yield curve, however, has fewer on-the-run issues trading at maturities of at least two years.

Statement 2: Swap curves across countries are more comparable than government bond curves because they reflect similar levels of credit risk.

Berg also estimates the nominal spread, Z-spread, and option-adjusted spread (OAS) for the Steigers Corporation callable bonds in Portfolio 2. The OAS is estimated from a binomial interest rate tree. The results are shown in Exhibit 2.

Exhibit 2: Spread Measures for Steigers Corporation Callable Bonds

	Spread Measure	Benchmark
Nominal spread	25 basis points	Steigers Corp yield curve
Z-spread	35 basis points	Steigers Corp spot rate curve
OAS	−20 basis points	Steigers Corp spot rate curve
Nominal spread	120 basis points	Treasury yield curve

OAS	40 basis points	Treasury spot rate curve

Berg determines that to obtain an accurate estimate of the effective duration and effective convexity of a callable bond using a binomial model, the specified change in yield (i.e., Δy) must be equal to the OAS.

Berg also observes that the current Treasury bond yield curve is upward sloping. Based on this observation, Berg forecasts that short-term interest rates will increase.

If the 5- and 10-year key rates increase by 20 basis points, but the 2- and 20-year key rates remain unchanged:

A) Portfolio 2 will experience the best price performance.

B) all three portfolios will experience the same price performance.

C) Portfolio 1 will experience the best price performance.

Question #39 of 80

A portfolio manager who believed in the liquidity premium theory would expect:

A) long-term securities to offer higher returns than short-term securities.

B) long-term rates to be higher than investors' expectations of future rates, because of the liquidity premium.

C) short-term rates to be lower than investors' expectations of short-term rates, because of the liquidity premium.

Question #40 of 80

Under the liquidity preference theory, expected future spot rates will *most likely* be:

A) More than the current forward rate.

B) Equal to the current forward rate.

C) Less than the current forward rate.

Question #41 of 80

Government spot rate curve is given below:

Maturity (years)	Rate
1	3.05%
2	4.10%
3	5.25%
4	6.45%

The swap fixed rate for a period of 2 years is *closest* to:

A) 4.98%

B) 4.08%

C) 4.75%

Question #42 of 80

Natalia Berg, CFA, has estimated the key rate durations for several maturities in three of her equally-weighted bond portfolios, as shown in Exhibit 1.

Exhibit 1: Key Rate Durations for Three Fixed-Income Portfolios

Key Rate Maturity	Portfolio 1	Portfolio 2	Portfolio 3
2-year	2.45	0.35	1.26
5-year	0.20	0.40	1.27
10-year	0.15	4.00	1.23
20-year	2.20	0.25	1.24
Total	5.00	5.00	5.00

At a fixed-income conference in London, Berg hears a presentation by a university professor on the increasing use of the swap rate curve as a benchmark instead of the government bond yield curve. When Berg returns from the conference, she realizes she has left her notes from the presentation on the airplane. However, she is very interested in learning more about whether she should consider using the swap rate curve in her work.

As she tries to reconstruct what was said at the conference, she writes down two advantages to using the swap rate curve:

Statement 1: The swap rate curve typically has yield quotes at more maturities than government bond markets have.

Statement 2: Retail banks are more likely to use the government spot curve as a benchmark as they have minimal exposure to swap markets.

Berg also estimates the nominal spread, Z-spread, and option-adjusted spread (OAS) for the Steigers Corporation callable bonds in Portfolio 2. The OAS is estimated from a binomial interest rate tree. The results are shown in Exhibit 2.

Exhibit 2: Spread Measures for Steigers Corporation Callable Bonds

	Spread Measure	***Benchmark***
Nominal spread	25 basis points	Steigers Corp yield curve
Z-spread	35 basis points	Steigers Corp spot rate curve
OAS	−20 basis points	Steigers Corp spot rate curve
Nominal spread	120 basis points	Treasury yield curve
OAS	40 basis points	Treasury spot rate curve

Berg determines that to obtain an accurate estimate of the effective duration and effective convexity of a callable bond using a binomial model, the specified change in yield (i.e., Δy) must be equal to the OAS.

Berg also observes that the current Treasury bond yield curve is upward sloping. Based on this observation, Berg forecasts that short-term interest rates will increase.

If the spot-rate curve experiences a parallel downward shift of 50 basis points:

A) Portfolio 1 will experience the best price performance.

B) all three portfolios will experience the same price performance.

C) Portfolio 3 will experience the best price performance.

Question #43 of 80

According to the liquidity theory, how are forward rates interpreted? Forward rates are:

A) expected future spot rates.

B) equal to futures rates.

C) expected future spot rate plus a rate exposure premium.

Question #44 of 80

Don McGuire, fixed income specialist at MCB bank makes the following statement: "In the very short-term, the expected rate of return from investing in any bond, including risky bonds, is the risk-free rate of return".

McGuire's statement is *most* consistent with:

A) unbiased expectations theory.

B) liquidity preference theory.

C) local expectations theory.

Question #45 of 80

Natalia Berg, CFA, has estimated the key rate durations for several maturities in three of her $25 million bond portfolios, as shown in Exhibit 1.

Exhibit 1: Key Rate Durations for Three Fixed-Income Portfolios

Key Rate Maturity	Portfolio 1	Portfolio 2	Portfolio 3
2-year	2.45	0.35	1.26
5-year	0.20	0.40	1.27
10-year	0.15	4.00	1.23
20-year	2.20	0.25	1.24
Total	5.00	5.00	5.00

At a fixed-income conference in London, Berg hears a presentation by a university professor on the increasing use of the swap rate curve as a benchmark instead of the government bond yield curve. When Berg returns from the conference, she realizes she has left her notes from the presentation on the airplane. However, she is very interested in learning more about whether she should consider using the swap rate curve in her work.

As she tries to reconstruct what was said at the conference, she writes down two advantages to using the swap rate curve:

Statement 1: The swap rate curve typically has yield quotes at 11 maturities between 2 and 30 years. The U.S. government bond yield curve, however, has fewer on-the-run issues trading at maturities of at least two years.

Statement 2: Swap curves across countries are more comparable than government bond curves because they reflect similar levels of credit risk.

Berg also estimates the nominal spread, Z-spread, and option-adjusted spread (OAS) for the Steigers Corporation callable bonds in Portfolio 2. The OAS is estimated from a binomial interest rate tree. The results are shown in Exhibit 2.

Exhibit 2: Spread Measures for Steigers Corporation Callable Bonds

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OAS	−20 basis points	Steigers Corp spot rate curve
Nominal spread	120 basis points	Treasury yield curve

OAS	40 basis points	Treasury spot rate curve

Berg determines that to obtain an accurate estimate of the effective duration and effective convexity of a callable bond using a binomial model, the specified change in yield (i.e., Δy) must be equal to the OAS.

Berg also observes that the current Treasury bond yield curve is upward sloping. Based on this observation, Berg forecasts that short-term interest rates will increase.

Are the two observations Berg writes down after the fixed income conference advantages to using the swap rate curve as a benchmark instead of a government bond curve?

A) Both statements are advantages.

B) Only Statement 2 is an advantage.

C) Only Statement 1 is an advantage.

Question #46 of 80

Which of the following *most accurately* explains the "locked-in-rate" interpretation of forward rates? The forward rate allows an investor to lock in:

A) a coupon rate for the current period.

B) an interest rate for some future period.

C) a coupon rate for some future period.

Question #47 of 80

Martha Garret, CFA, manages fixed-income portfolios for Jones Brothers, Inc. (JBI). JBI has been in the portfolio management business for over 23 years and provides investors with access to actively managed equity and fixed-income portfolios. All of JBI's fixed-income portfolios are constructed using U.S. debt instruments. Garret's primary portfolio responsibilities are the Quasar Fund and the Nova Fund, both of which are long fixed-income portfolios consisting of Treasury securities in all maturity ranges. The Quasar Fund holdings as of March 15 are provided in Exhibit 1. A comparison of key rate durations for the Quasar Fund and Nova Fund is provided in Exhibit 2.

Exhibit 1: Quasar Fund

Bond	Maturity (years)	Coupon	Yield	Par Value	Market Value	Duration
A	2	5.0%	5.0%	4,000,000	4,000,000	1.86
B	5	4.5%	6.0%	3,500,000	3,278,851	4.32
C	15	8.0%	7.0%	2,750,000	3,000,468	8.90
D	30	6.5%	4.0%	6,450,000	9,238,340	15.90

Exhibit 2: Key Rate Durations for Quasar Fund & Nova Fund

Fund	Maturity (years)			
	2	5	15	30
Quasar Fund	0.90	1.20	1.80	6.10
Nova Fund	0.40	2.50	3.40	1.10

Of particular importance to Garret and her colleagues is the degree of interest rate risk exposure unique to each portfolio under JBI's management. Driving the increased awareness of the portfolios' interest rate exposure is the double-digit growth in assets under management that JBI's fixed-income portfolios have experienced in the past five years. Interest in the company's fixed income portfolios continues to grow and as a result, all portfolio managers are required to attend weekly meetings to discuss key portfolio risk factors. At the last meeting, Miranda Walsh, a principal at JBI, made the following comments:

> "The variance of daily interest rate changes has been trending higher over the past three months, leading us to believe that a period of high volatility is approaching in the next 12 to 18 months. However, the reliability is questionable because the volatility estimates were derived using an option pricing model, which assumes constant interest rates."
>
> "Also, the Treasury spot rate curve currently has a similar shape to the yield curve on Treasury coupon securities, which according to the market segmentation theory of interest rate term structure, indicates a relatively high level of demand from investors for

intermediate term securities. Overzealous trading by investors unwilling to move into other maturity ranges may create mispricing and opportunities for arbitrage."

After the meeting, Walsh and JBI's other principals met to discuss a new international portfolio opportunity. At Walsh's suggestion, the principals selected Garret as the lead portfolio manager for the new fund, which will be titled the Atlantic Fund. One of the other portfolio managers, Greg Terry, CFA, suggested to Garret that she utilize the LIBOR swap curve as a benchmark for the Atlantic fund rather than using local government yield curves. Terry justifies his suggestion by claiming that "the lack of government regulation in the swap market makes swap rates and curves directly comparable between different countries despite fewer maturity points with which to construct the curve as compared to a government yield curve. Furthermore, credit risk in the swap curves of various countries is similar, thus avoiding the complications associated with different levels of sovereign risk embedded in government yield curves." Intrigued by the idea of using the swap curve, Garret has her assistant begin gathering a range of current and forward LIBOR rates.

Which of the following factors would have the most explanatory power for the historical returns of the Quasar Fund? Changes in the:

A) slope of the yield curve.

B) curvature of the yield curve.

C) level of interest rates.

Question #48 of 80

If the liquidity preference hypothesis is true, what shape should the term structure curve have in a period where interest rates are expected to be constant?

A) Flat.

B) Upward sloping.

C) Downward sloping.

James Wallace, CFA, is a fixed income fund manager at a large investment firm. Each year, the firm recruits a group of new college graduates in the spring to enter in the firm's management training program. The program is a rigorous six-month course that exposes every candidate to each of the different departments within the firm. After successfully completing the six-month training period, candidates then receive offers for employment in one of the departments within the investment firm. Recently, Wallace was selected by his boss to teach the fixed income portion of the firm's training

program. He will be able to hold several two-hour sessions with the new hires over a two-week time period, during which he is expected to instruct the trainee's on all aspects of fixed income analysis. These sessions serve as preparation for the trainees to be able to complete a month long rotation on the fixed income trading desk.

His first few sessions will cover the core concepts of fixed income investing. Wallace believes that in order to fully grasp the more complicated concepts of fixed income analysis, the new hires must first begin by having a complete knowledge of the term structure and the volatility of interest rates. The new hires each have different educational backgrounds and varying amounts of work experience, so Wallace decides to begin with the most very basic concepts. He wants to start by teaching the various theories of the term structure of interest rates, and the implications of each theory for the shape of the Treasure yield curve. To evaluate the trainees' understanding of the subjects at hand, he creates a series of questions.

The following interest rate scenario is used to derive examples on the different theories used to explain the shape of the term structure and for all computational problems in Wallace's lectures.

Table 1 LIBOR Forward Rates and Implied Spot Rates

Period	LIBOR Forward Rates	Implied Spot Rates
0 × 6	5.0000%	5.0000%
6 × 12	5.5000%	5.2498%
12 × 18	6.0000%	5.4996%
18 × 24	6.5000%	5.7492%
24 × 30	6.7500%	5.9490%
30 × 36	7.0000%	6.1238%

James uses a rounded day count of 0.5 years for each semi-annual period.

Question #49 of 80

Following Wallace's first lecture he asks the trainees which of the following explains an upward sloping yield curve according to the (unbiased) pure expectations theory of the term structure of interest rates?

A) There is greater demand for short-term securities than for long-term securities.

B) There is a risk premium associated with more distant maturities.

C) The market expects short-term rates to rise through the relevant future.

Question #50 of 80

Wallace now poses a similar question regarding the liquidity preference theory. Which of the following could explain an upward sloping yield curve according to the liquidity preference theory of the term structure of interest rates?

A) There is greater demand for short-term securities than for long-term securities.

B) There is a risk premium associated with more distant maturities.

C) The market expects short-term rates to rise through the relevant future.

Question #51 of 80

Wallace explains to the class that the swap fixed rate is one where the values of the floating-rate and the fixed-rate are the same at the inception of the swap. Using the information in Table 1, he asks the class to compute the swap fixed rate for a one-year plain vanilla interest rate swap with semiannual payments. Which of the following is the *closest* to the correct answer?

A) 3.43%.

B) 5.18%.

C) 2.56%.

Question #52 of 80

Wallace finally asks the class about the market segmentation theory of the term structure of interest rates. Specifically, Wallace asks which of the following could explain an upward sloping yield curve according to the market segmentation theory?

A) There is a risk premium associated with more distant maturities.

B) There is greater demand for long-term securities than for short-term securities.

C) There is greater demand for short-term securities than for long-term securities.

Question #53 of 80

Wallace presents the relationships between spot and forward rates according to the pure expectations theory. Which of the following is *closest* to the one-year implied forward rate one year from now?

A) 6.58%.

B) 6.25%.

C) 5.75%.

Question #54 of 80

Wallace completes his first lecture by tying the relationship between Treasury prices and the shape of the term structure. He is particularly interested in the implications of a steepening yield curve. Which of the following is *most* accurate for a steepening yield curve?

A) The price of long-term Treasury securities increases relative to the price of short-term Treasury securities.

B) The price of short-term Treasury securities increases.

C) The price of short-term Treasury securities increases relative to the price of long-term Treasury securities.

Question #55 of 80

According to the pure expectations theory, which of the following statements is *most* accurate? Forward rates:

A) exclusively represent expected future spot rates.

B) always overestimate future spot rates.

C) are biased estimates of market expectations.

Question #56 of 80

Which of the following statements are *most accurate*?

A) Volatility of short-term and long-term rates is typically equal.

B) Short-term rates are typically more volatile than long-term rates.

C) Long-term rates are typically more volatile than short-term rates.

Question #57 of 80

Which theory explains the shape of the yield curve by considering the relative demands for various maturities?

A) The pure expectations theory.

B) The liquidity premium theory.

C) The segmentation theory.

Question #58 of 80

Z-spread is *most accurately* described as the constant spread that is:

A) equal to the difference between a bond's yield and the yield on a government bond.

B) added to the zero volatility binomial tree such that an option-free bond is correctly valued.

C) added to the spot rate curve to generate discount rates for each of the bond's cash flows such that the present value of the cash flows is exactly equal to the market price of the bond.

Carol Stephens, CFA, oversees five portfolio managers who all manage fixed income portfolios for one institutional client. Stephens feels that interest rates will change over the next year but is uncertain about the extent and direction of this change. She is confident, however, that the yield curve will change in a nonparallel manner and that modified duration will not accurately measure the overall total portfolio's yield-curve risk exposure. To help her evaluate the risk of her client's total portfolio, she has assembled the table of rate durations shown below.

Issue	Value ($millions)	3 mo	2 yr	5 yr	10 yr	15 yr	20 yr	25 yr	30 yr
Portfolio 1	100	0.03	0.14	0.49	1.35	1.71	1.59	1.47	4.62
Portfolio 2	200	0.02	0.13	1.47	0.00	0.00	0.00	0.00	0.00

Portfolio 3	150	0.03	0.14	0.51	1.40	1.78	1.64	2.34	2.83
Portfolio 4	250	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Portfolio 5	300	0.00	0.88	0.00	0.00	1.83	0.00	0.00	0.00

The value of the total portfolio is $1,000,000,000.

For this question only, imagine that the following three key rates change while the others remain constant:

- The 3-month rate increases by 20 basis points.
- The 5-year rate increases by 90 basis points.
- The 30-year rate decreases by 150 basis points.

Question #59 of 80

The new total value of the portfolio after these rate changes will be *closest* to:

A) $1,009,469,000.

B) $961,075,000.

C) $1,004,735,000.

Question #60 of 80

For this question only, imagine that the original yield curve undergoes a parallel shift such that the rates at all key maturities increase by 50 basis points. The new value of the total portfolio will be *closest* to:

A) $961,075,000.

B) $1,019,462,500.

C) $980,537,500.

Question #61 of 80

For this question only, imagine that the original yield curve undergoes a shift such that 3-month rates remain constant and all other rates increase by 135 basis points. The new value of portfolio 4 will be *closest* to:

A) $243,375,000.

B) $250,000,000.

C) $229,750,000.

Question #62 of 80

The 10-year key rate duration for the total portfolio is *closest* to:

A) 1.350.

B) 1.375.

C) 0.345.

Question #63 of 80

The effective duration for Portfolio 2 is *closest* to:

A) 1.47.

B) 1.62.

C) 0.023.

Question #64 of 80

If an active bond portfolio manager believes future spot rates will be lower than indicated by today's forward rates, then she will *most likely*:

A) be indifferent because her holding period return will be unaffected.

B) sell bonds because the market appears to be discounting future cash flows at "too high" of a discount rate.

C) purchase bonds because the market is discounting future cash flows at "too high" of a discount rate.

Question #65 of 80

Martha Garret, CFA, manages fixed-income portfolios for Jones Brothers, Inc. (JBI). JBI has been in the portfolio management business for over 23 years and provides investors with access to actively managed equity and fixed-income portfolios. All of JBI's fixed-income portfolios are constructed using U.S. debt instruments. Garret's primary portfolio responsibilities are the Quasar Fund and the Nova Fund, both of which are long fixed-income portfolios consisting of Treasury securities in all maturity ranges. The Quasar Fund holdings as of March 15 are provided in Exhibit 1. A comparison of key rate durations for the Quasar Fund and Nova Fund is provided in Exhibit 2.

Exhibit 1: Quasar Fund

Bond	Maturity (years)	Coupon	Yield	Par Value	Market Value	Duration
A	2	5.0%	5.0%	4,000,000	4,000,000	1.86
B	5	4.5%	6.0%	3,500,000	3,278,851	4.32
C	15	8.0%	7.0%	2,750,000	3,000,468	8.90
D	30	6.5%	4.0%	6,450,000	9,238,340	15.90

Exhibit 2: Key Rate Durations for Quasar Fund & Nova Fund

Fund	Maturity (years)			
	2	5	15	30
Quasar Fund	0.90	1.20	1.80	6.10
Nova Fund	0.40	2.50	3.40	1.10

Of particular importance to Garret and her colleagues is the degree of interest rate risk exposure unique to each portfolio under JBI's management. Driving the increased awareness of the portfolios' interest rate exposure is the double-digit growth in assets under management that JBI's fixed-income portfolios have experienced in the past five years. Interest in the company's fixed income portfolios continues to grow and as a result, all portfolio managers are required to attend weekly meetings to discuss key portfolio risk factors. At the last meeting, Miranda Walsh, a principal at JBI, made the following comments:

> "The variance of daily interest rate changes has been trending higher over the past three months, leading us to believe that a period of high volatility is approaching in the next 12 to 18 months. However, the reliability is questionable because the volatility estimates were derived using an option pricing model, which assumes constant interest rates."
>
> "Also, the Treasury spot rate curve currently has a similar shape to the yield curve on Treasury coupon securities, which according to the market segmentation theory of interest rate term structure, indicates a relatively high level of demand from investors for

intermediate term securities. Overzealous trading by investors unwilling to move into other maturity ranges may create mispricing and opportunities for arbitrage."

After the meeting, Walsh and JBI's other principals met to discuss a new international portfolio opportunity. At Walsh's suggestion, the principals selected Garret as the lead portfolio manager for the new fund, which will be titled the Atlantic Fund. One of the other portfolio managers, Greg Terry, CFA, suggested to Garret that she utilize the LIBOR swap curve as a benchmark for the Atlantic fund rather than using local government yield curves. Terry justifies his suggestion by claiming that "the lack of government regulation in the swap market makes swap rates and curves directly comparable between different countries despite fewer maturity points with which to construct the curve as compared to a government yield curve. Furthermore, credit risk in the swap curves of various countries is similar, thus avoiding the complications associated with different levels of sovereign risk embedded in government yield curves." Intrigued by the idea of using the swap curve, Garret has her assistant begin gathering a range of current and forward LIBOR rates.

Evaluate Walsh's comments regarding the method used to estimate the expected increase in interest rate volatility and the term structure of interest rates.

A) Walsh is correct only with respect to interest rate volatility.

B) Walsh is incorrect with respect to both interest rate volatility and term structure.

C) Walsh is correct with respect to both interest rate volatility and term structure.

Question #66 of 80

With respect to local expectations theory, which of the following statements is *most consistent* with market evidence?

A) Short-term holding period return of long-maturity bonds and the short-term holding period return of short-maturity bonds is the same.

B) Short-term holding period return of short-maturity bonds exceeds the short-term holding period returns of long-maturity bonds.

C) Short-term holding period return of long-maturity bonds exceeds the short-term holding period returns of short-maturity bonds.

Question #67 of 80

Which one of the following is *least likely* a reason to use the swap rate curve?

A) Swap rates reflect credit risk of commercial banks and not government.

B) The swap market is not regulated by any government.

C) Swap rates are less volatile than government bond yields.

Question #68 of 80

Independence Bank is a small retail bank that specializes in demand deposits and invests in CMO tranches. For the purpose of valuation of Independence Bank's assets and liabilities, the *most appropriate* reference yield curve would be:

A) swap rate curve.

B) government spot curve.

C) Libor-OIS curve.

Question #69 of 80

What adjustment must be made to the key rate durations to measure the risk of a steepening of an already upward sloping yield curve?

A) Increase the key rates at the short end of the yield curve.

B) Increase all key rates by the same amount.

C) Decrease the key rates at the short end of the yield curve.

Question #70 of 80

Given annual spot interest rates for 1 year, 2 years, 3 years, 4 years, and 5 years, the maximum number of forward rates that can be derived is *closest* to:

A) 5

B) 10

C) 8

Question #71 of 80

The price of a five-year zero coupon bond is $0.7835 for $1 par and the price of a two-year zero-coupon bond is $0.9426 for $1 par. The three-year forward rate two years from now is *closest* to:

A) 4.87%

B) 6.36%

C) 5.54%

Question #72 of 80

Jill Sebelius, editor-in-chief of a monthly interest-rate newsletter uses the following model to forecast short-term interest rates:

$$dr = a(b - r)\,dt + \sigma\sqrt{r}dz$$

For the current newsletter, Sebelius has issued the following expectations:

a=0.40, b = 3%, r = 2%.

Based on Sebelius's estimates, over a sufficiently long period of time, the expected value of the short-term interest rate is *closest* to:

A) 3%

B) 2%

C) 2.4%

Question #73 of 80

7.5%, 15-year, annual pay option-free Xeleon Corp bond trades at a market price of $95.72 per $100 par. The government spot rate curve is flat at 5%.

Suppose that the Xeleon bond was callable in 10 years at par and an analyst computed the Z-spread on the bond ignoring the embedded option. Relative to the Z-spread on an option-free bond, the calculated Z-spread will *most likely* be:

A) higher.

B) lower.

C) the same.

Question #74 of 80

Currently the term structure of interest rate is downward sloping. Which of the following models *most accurately* describe the current term structure?

A) Ho-Lee model.

B) Vasicek model.

C) Cox-Ingersoll-Ross model.

Question #75 of 80

Jon Smithson is a bond trader at Zezen Bank. The spot rate curve is currently flat. Smithson expects that the curve will become upward sloping in the next year. Based on this expectation, the *least appropriate* active strategy for Smithson would be to:

A) increase the duration of the portfolio.

B) sell all the long-term bonds in the portfolio and reinvest the proceeds in shorter-maturity bonds.

C) reduce the duration of the portfolio.

Question #76 of 80

A bond portfolio has the following key rate durations:

$D_2 = 0.50$; $D_5 = 2.70$ and $D_{15} = 7.23$.

Suppose that the change in yield curve results in changes in the following spot rates:

$S_1 = +50$bps; $S_2 = +100$bps; $S_5 = +25$ bps; $S_{10} = -75$bps; $S_{15} = -100$bps.

The change in the value of the portfolio will be *closest* to:

A) 6.06%

B) 4.75%

C) -2.80%

Question #77 of 80

Natalia Berg, CFA, has estimated the key rate durations for several maturities in three of her $25 million bond portfolios, as shown in Exhibit 1.

Exhibit 1: Key Rate Durations for Three Fixed-Income Portfolios

Key Rate Maturity	Portfolio 1	Portfolio 2	Portfolio 3
2-year	2.45	0.35	1.26
5-year	0.20	0.40	1.27
10-year	0.15	4.00	1.23
20-year	2.20	0.25	1.24
Total	5.00	5.00	5.00

At a fixed-income conference in London, Berg hears a presentation by a university professor on the increasing use of the swap rate curve as a benchmark instead of the government bond yield curve. When Berg returns from the conference, she realizes she has left her notes from the presentation on the airplane. However, she is very interested in learning more about whether she should consider using the swap rate curve in her work.

As she tries to reconstruct what was said at the conference, she writes down two advantages to using the swap rate curve:

Statement 1: The swap rate curve typically has yield quotes at 11 maturities between 2 and 30 years. The U.S. government bond yield curve, however, has fewer on-the-run issues trading at maturities of at least two years.

Statement 2: Swap curves across countries are more comparable than government bond curves because they reflect similar levels of credit risk.

Berg also estimates the nominal spread, Z-spread, and option-adjusted spread (OAS) for the Steigers Corporation callable bonds in Portfolio 2. The OAS is estimated from a binomial interest rate tree. The results are shown in Exhibit 2.

Exhibit 2: Spread Measures for Steigers Corporation Callable Bonds

	Spread Measure	Benchmark
Nominal spread	25 basis points	Steigers Corp yield curve
Z-spread	35 basis points	Steigers Corp spot rate curve
OAS	−20 basis points	Steigers Corp spot rate curve
Nominal spread	120 basis points	Treasury yield curve

OAS	40 basis points	Treasury spot rate curve

Berg determines that to obtain an accurate estimate of the effective duration and effective convexity of a callable bond using a binomial model, the specified change in yield (i.e., Δy) must be equal to the OAS.

Berg also observes that the current Treasury bond yield curve is upward sloping. Based on this observation, Berg forecasts that short-term interest rates will increase.

Is Berg's short-term interest rate forecast consistent with the pure expectations theory and the liquidity premium theory?

A) Consistent with the pure expectations theory only.

B) Consistent with the liquidity premium theory only.

C) Consistent with both theories.

Question #78 of 80

An active bond portfolio manager would *most* appropriately buy bonds when expected spot rates are:

A) less than current forward rates.

B) equal to current forward rates.

C) greater than current forward rates.

Question #79 of 80

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Which of the following *best* evaluates Terry's justification for using the swap curve as the benchmark for the Atlantic Fund? Terry's justification is:

A) incorrect because there are different levels of credit risk in the swap curves of different countries.

B) correct.

C) incorrect because there are actually more maturity points to construct the swap curve.

Question #80 of 80

Use the following spot rate curve to answer this question:

Maturity	1	2	3
Spot rates	5%	5.5%	6%

The 1-year forward rate in one year [$f(1,1)$] and the 1-year forward rate in two years [$f(2,1)$] is *closest* to:

	$f(1,1)$	$f(2,1)$
A)	6%	7%
B)	4%	4.89%
C)	5.25%	5.75%