Topic 46 to 47

Test ID: 8451092

Question #1 of 76

Question ID: 495083

What FICO score is needed to qualify a borrower as prime rather than subprime?

✓ **A) Above 660.**

✗ **B)** Above 620.

✗ **C)** Above 640.

✗ **D)** Above 600.

Explanation

FICO is a US credit scoring system used to assess the risk when lending to mortgage customers. Scores above 660 are considered prime (lower risk) scores below are considered subprime (higher risk).

Question #2 of 76

Question ID: 439250

Which of the following statements regarding zero-coupon bonds is **TRUE**?

✓ **A) An investor who holds a zero-coupon bond until maturity will receive a return equal to the bond's effective annual yield.**

✗ **B)** An investor who holds a zero-coupon bond until maturity will receive an annuity of coupon payments plus recovery of principal at maturity.

✗ **C)** An investor who holds a zero-coupon bond until maturity will receive an annuity of coupon payments.

✗ **D)** Zero-coupon bonds have substantial amount of coupon reinvestment risk.

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. An investor who holds a zero-coupon bond until maturity will receive a return equal to the bond's effective annual yield.

Question #3 of 76

Question ID: 439949

Which of the following *most accurately* describes a mortgage passthrough security?

✓ **A) A participation certificate in a pool of mortgages.**

✗ **B)** A security that pays off the full amount of the mortgage if the borrower defaults.

✗ **C)** A futures contract on a pool of mortgages of a certain type.

✗ **D)** An option on a pool of mortgages.

Explanation

A mortgage passthrough security represents a claim against a pool of mortgages. Any number of mortgages may be used to form the pool, and any mortgage included in the pool is referred to as a securitized mortgage.

Question #4 of 76

Question ID: 439270

Chrissy Burke, FRM is studying recovery rates of bonds that have defaulted. She finds that Moody's estimated that the recovery rate for bonds historically has been less than 40%. Measuring recovery rates can be complicated because the analyst must compute the present value of the remaining cash flows at the time of the default. What is another reason measuring recovery rates can be a challenge?

✗ **A) Corporations are hesitant to share the relevant information.**

✗ **B)** Bonds with lower seniority have higher recovery rates.

✗ **C)** Mixing zero-coupon with floating-rate bonds makes estimates of recovery rates inexact.

✓ **D)** Some of the recovered amounts can be in the form of securities.

Explanation

Moody's estimates recovery rate for bonds to be approximately 38%. Measurement can be complicated because of the present value calculations involved as well as the fact that the investor may be recovering stock in the company.

Question #5 of 76

Question ID: 439967

Which of the following *best* describes how planned amortization class (PAC) bonds are protected against prepayment risk to create products that provide better asset and liability matching for institutional investors? PAC bonds:

✓ **A) have a fixed principal repayment schedule that must be satisfied as long as the support tranches exist.**

✗ **B)** have several different companion tranches to which repayments are directed sequentially.

✗ **C)** do not allow prepayment for certain types of mortgages.

✗ **D)** accrue the interest for one tranche and redistribute it to the support tranches.

Explanation

The PAC tranche has significant protection against prepayment risk at the expense of the support or companion tranches.

Question #6 of 76

Question ID: 439946

In the past, if mortgage rates fell by more than 2%, refinancing activity would increase dramatically. That effect is *best* described as the:

✗ **A) refinance effect.**

✗ **B)** burnout effect.

✓ **C)** media effect.

✗ **D)** lock-in effect.

Explanation

Large declines in rates will likely gain the attention of the media.

Lock-in effect refers to borrowers who may wish to avoid the costs of a new mortgage which likely consists of a higher mortgage rate.

Burnout effect can be described as follows: consider a mortgage pool that was formed when rates were 8%, then interest rates dropped to 5%, rose to 8%, and then dropped again to 5%. Many homeowners will have refinanced when interest rates dipped the first time. On the second occurrence of 5% interest rates, most owners in the pool who were able to refinance would have already done so.

There is no such thing as a refinance effect per se.

Question #7 of 76

Question ID: 439266

All of the following risks are types of event risk **EXCEPT**:

✗ **A) political risk.**

✗ **B)** regulatory risk.

✗ **C)** disaster/accident risk.

✓ **D)** interest rate risk.

Explanation

Interest rate risk is the risk that interest rates will increase, decreasing the price of certain investments, including fixed-coupon bonds.

The other choices are examples of event risk, which refers to the possibility that there may be a single event or circumstance that could have a major effect on the ability of an issuer to repay a bond obligation.

Question #8 of 76

Question ID: 439952

The SMM formula is: SMM = 1 - (1 - CPR)$^{1/12}$. Calculate the single monthly mortality rate (SMM) for month 6, 100 PSA:

✗ **A) 0.000837.**

✓ **B)** 0.001006.

✗ **C)** 0.001259.

✗ **D)** 0.010366.

Explanation

CPR = 0.2% * 6 = 0.012

SMM = 1-(1-0.012)$^{1/12}$ = 0.001006

Question #9 of 76

Question ID: 440017

A collateralized mortgage obligation (CMO) bond structure includes four tranches, A, B, C, and D, with the following characteristics:

Tranche	*OAS (in BP)*	*Option Cost (in BP)*
A	54	73
B	55	94
C	68	71

D	56	90

Using this information, which of the tranches appears to be cheap?

- ✓ **A) C.**
- ✗ **B)** A.
- ✗ **C)** D.
- ✗ **D)** B.

Explanation

A large OAS indicates a wider risk-adjusted spread and lower relative price. Option cost measures prepayment risk. In general, the highest OAS and lowest option cost is most attractive. Tranche C has the highest OAS and the lowest option cost at the same time.

Question #10 of 76

Question ID: 440002

The volatility assumption in a Monte Carlo simulation is important, because it determines the:

- ✗ **A) speed of prepayments.**
- ✗ **B)** level of prepayments.
- ✗ **C)** effect the Federal Reserve Board (Fed) will have on the valuation process.
- ✓ **D)** dispersion of future interest rates and the number of possible paths that may be followed.

Explanation

The volatility assumption in a Monte Carlo simulation is important because it determines the dispersion of future interest rates and the number of possible paths that may be followed.

Question #11 of 76

Question ID: 440000

Which of the following is NOT a step in the Monte Carlo method for calculating the theoretical value of a mortgage-backed security?

- ✗ **A) Discount cash flows to present values based on the interest rate path.**
- ✗ **B)** Average all the present values to get the theoretical model.
- ✗ **C)** Generate interest-rate paths and estimate cash flows for each path based on a prepayment model.
- ✓ **D)** Calculate the option-adjusted spread (OAS).

Explanation

Calculation of the OAS is not necessary to get the theoretical value. The OAS is the spread that makes the model (theoretical) value equal to the market price and is used for relative valuation of securities.

Question #12 of 76

Question ID: 439985

Payments in excess of the required monthly payment amount are called:

✗ **A) passthroughs.**

✗ **B)** CMOs.

✗ **C)** mega-payments.

✓ **D)** prepayments.

Explanation

Payments in excess of the required monthly payment amount are called prepayments.

Question #13 of 76

Question ID: 439262

Most often the initial call price of a bond is its:

✗ **A) principal less a discount fee.**

✓ **B)** principal plus a premium.

✗ **C)** par value plus one year's interest.

✗ **D)** par value.

Explanation

Customarily, when a bond is called on the first permissible call date, the call price represents a premium above the par value. If the bonds are not called entirely or not called at all, the call price declines over time according to a schedule. For example, a call schedule may specify that a 20-year bond issue can be called after 5 years at a price of 110. Thereafter, the call price declines by a dollar a year until it reaches 100 in the fifteenth year, after which the bonds can be called at par.

Question #14 of 76

Question ID: 439958

The purchaser of a mortgage passthrough security:

✗ **A) hedges all prepayment risk.**

✗ **B)** can select a tranche that offers the desired prepayment risk or maturity characteristics.

✓ **C)** has a claim to equal percentage shares of the interest and principal payments from a pool of mortgages.

✗ **D)** will receive semiannual payments that consist of interest, scheduled principal payments, and prepayments of principal.

Explanation

Mortgage passthrough securities represent a proportionate claim to the cash flows from a pool of mortgages. These securities feature monthly (not semiannual) cash flows that consist of interest, scheduled principal payments, and principal prepayments. Collateralized mortgage obligations, not mortgage passthrough securities, have tranches with different prepayment risk.

Question #15 of 76

Question ID: 439981

Which of the following *most accurately* describes prepayments?

✗ **A) Prepayment occurs if both interest and principal are paid before the end of the mortgage term.**

✗ **B)** A payment that pays the mortgage in full prior to maturity.

✓ **C)** A payment made in excess of the monthly mortgage payment.

✗ **D)** A scheduled mortgage payment that includes scheduled amortization and interest.

Explanation

It is possible for a mortgage borrower to pay an amount in excess of the required payment or even to pay off the loan entirely. Payments in excess of the required monthly amount are called prepayments.

Question #16 of 76

Question ID: 439256

Which of the following is **TRUE** about the call feature of a bond? It:

✗ **A) stipulates whether and under what circumstances the bondholders can request an earlier repayment of the principal amount prior to maturity.**

✗ **B)** describes the credit risk of the bond.

✓ **C)** stipulates whether and under what circumstances the issuer can redeem the bond prior to maturity.

✗ **D)** describes the maturity date of the bond.

Explanation

Call provisions give the issuer the right (but not the obligation) to retire all or a part of an issue prior to maturity. If the bonds are "called," the bondholder has no choice but to turn in his bonds. Call features give the issuer the opportunity to get rid of expensive (high coupon) bonds and replace them with lower coupon issues in the event that market interest rates decline during the life of the issue.

Call provisions do not pertain to maturity or credit risk. A put provision gives the *bondholders* certain rights regarding early payment of principal.

Question #17 of 76

Question ID: 439249

What best describes the relationship between a bond's maturity date and the early retirement of a bond?

✗ **A) Price and yield are positively correlated, and a bond indenture may be terminated if a company chooses to retire a bond early.**

✗ **B)** Price and yield and positively correlated, and the longer the bond's maturity, the more time a company has to retire the bond early.

✓ **C)** Price and yield are negatively correlated, and the maturity date is when the issuer pays the principal and any accrued interest or premium.

✗ **D)** Price and yield are negatively correlated, and at a bond's maturity only the principal payment is due and payable to the bondholder.

Explanation

Maturity date is when the issuer's obligations are fulfilled. A company may choose to retire a bond early and the longer the

maturity, the more time the company has available to make that decision.

Question #18 of 76

Question ID: 439950

Suppose that the single-monthly mortality rate (SMM) is equal to 0.003. The mortgage balance for a certain month is $250 million, and the scheduled principal payment for the same month is $3 million. What is the assumed prepayment amount for this month?

✗ **A) $672,000.**

✗ **B)** $988,000

✗ **C)** $356,000.

✓ **D)** $741,000.

Explanation

The prepayment amount is computed as follows:

Prepayment amount = SMM x (beginning mortgage balance for a month - scheduled principal payment for the month) = 0.003 x ($250 million - $3 million) = $741,000.

Question #19 of 76

Question ID: 439963

Interest only (IO) strip cash flow:

✓ **A) starts out big and gets smaller over time.**

✗ **B)** have longer effective lives than principal only (PO) strips.

✗ **C)** starts out small and gets bigger over time.

✗ **D)** are the same throughout the life of the security.

Explanation

IO strip cash flow starts out big and gets smaller over time.

Question #20 of 76

Question ID: 439983

Which of the following *most accurately* describes the cash flows of a fixed rate, level payment, fully amortized mortgage loan?

✗ **A) The mortgage is amortized in the final payment as in corporate debt.**

✓ **B)** The borrower pays equal installments over the term of the mortgage.

✗ **C)** The borrower pays equal percentage installments over the term of the mortgage.

✗ **D)** The mortgage is amortized in two equal payments, one after half of the life of the mortgage and one at the end.

Explanation

A fixed rate, level payment, fully amortized mortgage loan requires equal payments (usually monthly) over the life of the mortgage. Each of these payments consists of an interest component and a principal component.

Question #21 of 76

Question ID: 439973

A trader is bearish on the U.S. bond market (he thinks prices will fall in the short-term). Which mortgage derivative position will usually yield a profit if the trader's assumption is accurate?

✗ **A) Inverse floater.**

✗ **B)** None of these.

✗ **C)** PO (principal only).

✓ **D)** IO (interest only).

Explanation

A trader who is bearish on the U.S. bond market believes that interest rates will rise. Of the three securities listed, only the IO would increase in value in such a scenario.

Question #22 of 76

Question ID: 439970

Which of the following have greater price volatility than the pass-through from which they are derived?

✗ **A) Interest only strips.**

✗ **B)** Principal only strips.

✓ **C)** Interest only strips and principal only strips.

✗ **D)** Neither interest only strips nor principal only strips.

Explanation

Both IOs and POs exhibit greater price volatility than the pass-throughs from which they are derived. This occurs because IO and PO returns are negatively correlated.

Question #23 of 76

Question ID: 439253

What type of bond pays at least the contracted, specified interest rate, but may pay more depending on the company's profits?

✓ **A) Participating bond.**

✗ **B)** Floating-rate bond.

✗ **C)** Payment-in-kind bond.

✗ **D)** Income bond.

Explanation

As the company's profits increase, the bondholders receive a bonus.

Question #24 of 76

Question ID: 439997

Which of the following statements is correct regarding dollar roll transactions?

✗ **A) An increase in the back month price could cause a dollar roll to trade special.**

✗ **B)** A dollar roll transaction occurs when an MBS market maker buys positions for one settlement month and, at a future date, sells those same positions.

✗ **C)** Shortages of certain securities will decrease the front month price.

✓ **D)** Funding costs in the repo market is a factor that impacts dollar roll valuations.

Explanation

A dollar roll is trading special when there is a decrease in the back month price and/or an increase in the front month price. Shortages of certain securities will cause an increase in the front month price. A dollar roll transaction occurs when an MBS market maker buys positions for one settlement month and, *at the same time*, sells those same positions for another month.

Question #25 of 76

Question ID: 424465

Which of the following contains the overall rights of the bondholders?

✗ **A)** **Rights offering.**

✗ **B)** Trustee.

✗ **C)** Covenant.

✓ **D)** Indenture.

Explanation

An indenture is the contract between the issuer and bondholder that specifies the issuer's legal requirements. Covenants are part of the indenture. The trustee acts as a representative of the bondholders. A rights offering describes an equity offering-not fixed income.

Question #26 of 76

Question ID: 439954

Which of the following *most accurately* describes the term "securitizing a mortgage"?

✗ **A)** **Selling an entire mortgage to another investor.**

✗ **B)** Selling shares of one mortgage to other investors.

✓ **C)** Including a mortgage in a pool of mortgages that is used as collateral for a mortgage passthrough security.

✗ **D)** Offsetting the mortgage payments by an investment that generates exactly the same cash flows.

Explanation

A mortgage passthrough security represents a claim against a pool of mortgages. Any number of mortgages may be used to form the pool, and any mortgage included in the pool is referred to as a securitized mortgage. Passthrough securities may be traded in the secondary market, and, as such they effectively convert illiquid mortgages into liquid securities. This process is called securitization.

Question #27 of 76

Question ID: 439979

Which of the following *most accurately* describes a mortgage loan?

✗ **A)** **An unsecured loan to enable the borrower to finance a real estate property.**

✗ **B)** An unsecured commercial loan to enable the borrower to finance a real estate property.

✗ **C)** A commercial loan secured by the collateral of some specified real estate property.

✓ **D)** A loan secured by the collateral of some specified real estate property.

Explanation

A mortgage is a loan that is collateralized with a specific piece of real property, either residential or commercial.

Question #28 of 76

Question ID: 439268

There are many types of high-yield bonds. Step-up bonds and payment-in-kind bonds are different types of what type of bond?

✗ **A)** **Reset bonds.**

✓ **B)** Deferred-coupon structures bonds.

✗ **C)** Story bonds.

✗ **D)** Poison put bonds.

Explanation

Deferred-coupon-structures bonds include deferred-interest bonds, step-up bonds, and payment-in-kind bonds. They sell at a deep discount initially and do not pay interest for several early years.

Question #29 of 76

Question ID: 439984

Prepayments or curtailments:

✗ **A)** **cause the duration of the original mortgage to lengthen or increase.**

✗ **B)** will increase the amount of interest the lender receives over the life of the loan.

✓ **C)** will reduce the amount of interest the lender receives over the life of the loan.

✗ **D)** have no impact on the amount of interest the lender receives over the life of the loan.

Explanation

Prepayments or curtailments will reduce the amount of interest the lender receives over the life of the loan.

Question #30 of 76

Question ID: 439261

Which of the following statements regarding a sinking fund provision is *most* accurate?

✓ **A)** **It requires that the issuer retire a portion of the principal through a series of principal payments over the life of the bond.**

✗ **B)** It requires that the issuer set aside money based on a predefined schedule to accumulate the cash to retire the bonds at maturity.

✗ **C)** It permits the issuer to retire more than the stipulated sinking fund amount if they choose.

✗ **D)** It must be made through the payment of cash, paid to the trustee based on a predetermined schedule.

Explanation

A sinking fund actually retires the bonds based on a schedule. This can be accomplished through either payment of cash or through the delivery of securities. An accelerated sinking fund provision allows the company to retire more than is stipulated in the indenture.

Question #31 of 76

Question ID: 439978

What is curtailment in relation to a mortgage?

✗ **A) Payments that come in slower than expected.**

✓ **B)** Prepayments of a mortgage for less than the full amount.

✗ **C)** A full default on the mortgage.

✗ **D)** Prepayments of a mortgage for the entire amount.

Explanation

Curtailments are prepayments of mortgages for less than the full amount.

Question #32 of 76

Question ID: 439999

Prepayment models are complex and rely upon a number of different methods to circumvent the problem of prepayment path dependency. Which of the following is often used to avoid the problems associated with prepayment path dependency?

✗ **A) Bernard and Schwartz simulation.**

✗ **B)** Error-correction model tree design.

✓ **C)** Monte Carlo simulation.

✗ **D)** Cox-Ingersoll-Ross tree design.

Explanation

Monte Carlo simulation techniques have been used to deal with problems associated with prepayment path dependency.

Question #33 of 76

Question ID: 439987

Prepayments cause the timing and amount of cash flows from mortgage loans and mortgage-backed securities (MBS) to be uncertain. Thus:

✗ **A) industry conventions need to be adopted as benchmarks for prepayment risk but have not been at this point.**

✓ **B)** the analyst must make specific assumptions about the rate at which prepayments of the pooled mortgages occurs when valuing the passthrough securities.

✗ **C)** the rate of prepayments is important to valuing the passthrough securities but is impossible to estimate.

✗ **D)** regulators mandate the convention firms must use when estimating prepayment rates.

Explanation

The analyst must make specific assumptions about the rate at which prepayments of the pooled mortgages occur when valuing

the passthrough securities.

Question #34 of 76

Question ID: 495085

Which of the following products may be expected to provide the *best* hedge against impairment of mortgage servicing rights?

✗ **A) Inverse floating rate collateralized mortgage obligation (CMO).**

✗ **B)** 10-year Treasury note.

✗ **C)** Floor contract on the 10-year constant maturity Treasury (CMT) rate.

✓ **D)** Planned amortization class (PAC) bond.

Explanation

The mortgage servicing rights associated with CMOs are assets that have cash flows that are uncertain because of mortgage prepayment risk. PAC bonds are CMO structures that are designed to minimize CMO prepayment risk.

Question #35 of 76

Question ID: 439267

Which of the following is **NOT** an example of event risk?

✓ **A) A corporation calls a large bond issue.**

✗ **B)** Ratings agencies downgrade a company's rating after the company takes on a significant amount of debt to fund a leveraged buy-out (LBO).

✗ **C)** The U.S. Food and Drug Administration (FDA) determines that a biotech company's flagship product is harmful to consumers and cannot be marketed.

✗ **D)** An interim South American government imposes restrictions on the outflow of capital.

Explanation

A corporation calling a large bond issue is an example of *call risk*.

All other choices are examples of types of event risk, which includes disaster/accident, corporate, regulatory, and political risks. Event risk refers to the possibility that there may be a single event or circumstance that could have a major effect on the ability of an issuer to repay a bond obligation. The South American government's actions are an *example of political event risk*. The FDA's actions represent *regulatory event risk*. The LBO-related rating downgrade is an example of *corporate event risk*.

Question #36 of 76

Question ID: 439951

Suppose that the single-monthly mortality rate (SMM) is equal to 0.004. The mortgage balance for a certain month is $100 million, and the scheduled principal payment for the same month is $2.5 million. What is the assumed prepayment amount for this month?

✗ **A) $460,000.**

✗ **B)** $960,000.

✓ **C)** $390,000.

✗ **D)** $890,000.

Explanation

The prepayment amount is computed as follows:

Prepayment amount = SMM × (beginning mortgage balance for a month − scheduled principal payment for the month) = 0.004 × ($100 million − $2.5 million) = $390,000.

Question #37 of 76

Question ID: 439252

A coupon bond:

✗ **A) always sells at par.**

✓ **B)** pays interest on a regular basis (typically semi-annually).

✗ **C)** does not pay interest on a regular basis, but pays a lump sum at maturity.

✗ **D)** can always be converted into a specific number of shares of common stock in the issuing company.

Explanation

This choice accurately describes a coupon bond.

With an *accrual bond,* payments are deferred to maturity and then disbursed along with the par value at maturity. Unlike a normal zero-coupon bond, these issues are sold at (or near) their par values and then the interest accrues at a compound rate on top of that. So, they start at $1,000 and then appreciate from there.

A *convertible bond* contains conversion rights which grant the holder of a bond a right to convert the bond into common shares of the issuer. This choice represents an embedded option and is of value to the bondholder.

Question #38 of 76

Question ID: 439953

Given a single monthly mortality rate (SMM) of 0.45 percent, a mortgage pool with a $200,000 principal balance outstanding at the beginning of the 26th month, and a scheduled monthly principal payment of $60.00 for the 26th month, the estimated prepayment is:

✗ **A) $450.00.**

✓ **B)** $899.73.

✗ **C)** $567.89.

✗ **D)** $426.38.

Explanation

Prepayment = (.0045)($200,000 - $60.00) = $899.73.

Question #39 of 76

Question ID: 440006

Which of the following is CORRECT concerning Monte Carlo simulation for valuing a mortgage-backed security? Monte Carlo simulation involves:

✗ **A) creating a trinomial interest rate tree that is used for the valuation.**

✗ **B)** creating a binomial interest rate tree that is used for the valuation.

✓ **C)** generating a series of cash flows based on simulated mortgage refinancing rates.

✗ **D)** generating a series of interest rates paths used to discount the known cash flows.

Explanation

Monte Carlo simulation makes use of an interest rate model to generate a mortgage refinancing rates for each month along each of a set of simulated interest rate paths. These refinancing rates along with mortgage loan characteristics are then fed into a prepayment model that estimates a prepayment rate for each month along each path. With these prepayment rate projections, monthly cash flows can be estimated.

Question #40 of 76

Question ID: 440019

How is the option-adjusted spread (OAS) computed using the Monte Carlo simulation model? The OAS is the value of the spread that, when added to all of the simulated spot rates, makes the:

✗ **A) theoretical present value, assuming a constant prepayment rate, equal to the market price of the mortgage-backed security.**

✗ **B)** present value of cash flows equal to the market price of the mortgage-backed security.

✗ **C)** theoretical present value, assuming no prepayments, equal to the market price of the mortgage-backed security.

✓ **D)** average of the present values from the simulated cash flow paths equal to the market price of the mortgage-backed security.

Explanation

The option adjusted spread for the Monte Carlo model is the spread that must be added to all of the spot rates along each interest rate path that will make the average present value of the path cash flows equal to the market price (plus accrued interest) for the MBSs being evaluated.

Question #41 of 76

Question ID: 439971

A rise in interest rates would *most likely* cause which of the following?

✗ **A) Both IO and PO strips to decrease in value.**

✗ **B)** PO strips to increase in value.

✓ **C)** IO strips to increase in value.

✗ **D)** Both IO and PO strips in increase in value

Explanation

Rises in interest rates benefit IO strips as their investors receive higher interest from adjustable rate mortgages. Conversely when interest rates increase there are fewer pre-payments, as less borrowers refinance so the PO strip investors have to wait longer for their principal payments. To summarize IO strips rise and PO strips fall when interest rates rise. This in reversed when interest rates fall.

Question #42 of 76

Question ID: 439962

Which of the following *best* describes a stripped mortgage-backed security (MBS)? A stripped MBS is a security:

✗ **A) that provides no interest payments.**

✓ **B)** whose distribution of principal and interest has been altered from a pro rata distribution to an unequal distribution.

✗ **C)** whose distribution of principal and interest has been altered from an unequal distribution to a pro rata distribution.

✗ **D)** that provides no principal payments.

Explanation

With a passthrough security, interest and principal payments generated by the underlying mortgage pool are allocated to the bondholders on a pro rata basis. This means that each passthrough certificate holder receives the same amount of interest and the same amount of principal. Stripped mortgage-backed securities differ in that principal and interest are not allocated on a pro rata basis.

Question #43 of 76

Question ID: 439974

Which of the following statements regarding principal-only (PO) and interest-only (IO) strips is (are) CORRECT?

I. The IO price is positively related to mortgage rates at low current rates.
II. The IO exhibits some negative convexity at low rates.
III. PO strips are sold at a moderate discount to par.
IV. PO prices increase when interest rates fall.

✗ **A) II and III.**

✗ **B)** I and II.

✓ **C)** I and IV.

✗ **D)** III and IV.

Explanation

The PO (not IO) exhibits some negative convexity at low rates.

PO strips are sold at a considerable (not moderate) discount to par.

Question #44 of 76

Question ID: 439986

Which of the following is a characteristic of a fixed rate, level payment, fully amortized mortgage loan?

✗ **A) Each payment includes an equal portion of interest and amortized principal.**

✗ **B)** Each payment includes interest on the borrowed amount only.

✗ **C)** Throughout the life of the mortgage, the interest portion of each payment increases.

✓ **D)** The payments are such that at the end of the mortgage, the loan has been fully amortized.

Explanation

As time passes, the proportion of the equal monthly mortgage payment that represents interest decreases and the proportion that goes toward the repayment of principal increases. This process continues until the outstanding principal reaches zero and the loan is paid in full (fully amortized).

Question #45 of 76

Question ID: 439990

Which of the following is a characteristic of a mortgage loan?

✗ **A) A loan that can be collateralized by real estate, financial securities, or any other personal asset.**

✗ **B)** If the borrower defaults on the loan, the lender has the right to seize all assets of the borrower to ensure that the loan is paid off.

✗ **C)** A very risky loan since it is unsecured.

✓ **D)** If the borrower defaults on the loan, the lender has the right to seize the collateral.

Explanation

With a mortgage loan, the borrower must make a series of mortgage payments over the life of the loan, and the lender has the right to "foreclose" or lay claim against the real estate in the event of loan default.

Question #46 of 76

Question ID: 439258

Which of the following statements about the early retirement of debt is *least* accurate?

✗ **A) Noncallable bonds generally cannot be retired for any reason prior to maturity.**

✗ **B)** Sinking fund provisions require the issuer to systematically retire the issue over its life rather than at maturity.

✗ **C)** Non-refundable bonds prohibit a company from calling an issue financed by the proceeds of a lower cost refunding bond issue.

✓ **D)** When bonds are redeemed under sinking fund provisions, the call price is known as the "regular redemption price."

Explanation

When bonds are redeemed to comply with sinking fund provisions, the call price is known as the "special redemption price." When bonds are redeemed according to the call provisions specified in the bond indenture, the call price is known as "regular redemption price."

Question #47 of 76

Question ID: 439263

Which of the following is *most* accurate about a bond with a deferred call provision?

✗ **A) Principal repayment can be deferred until it reaches maturity.**

✗ **B)** It can be called at any time during the initial call period, but not later.

✓ **C)** It cannot be called right after the date of issue.

✗ **D)** It can be redeemed at any time prior to maturity.

Explanation

A deferred call provision means the issue is initially (say, for the first 5 to 7 years) non-callable, after which time it becomes freely callable. In other words, there is a deferment period during which time the bond cannot be called, but after that, it becomes freely callable.

Question #48 of 76

Question ID: 439996

Regarding the creation of agency or private-label mortgage-backed security pools, which of the following statements is incorrect?

✗ **A)** **After a pool of mortgages is securitized, it is sold to investors as a pass-through investment.**

✓ **B)** The loans that meet government agency requirements are charged an insurance premium by the agency and then sold as private label transactions.

✗ **C)** The loans that do not meet government agency requirements are securitized in private label transactions.

✗ **D)** Although there is no agency guarantee on private label securities, there is insurance through the creation of subordinate classes.

Explanation

MBSs can be created in two ways. First, the loans that meet the government agency requirements are charged an insurance premium (guarantee fee) by the agency and then securitized as a pool. Alternatively, the loans that do not meet the requirements or where it is too costly to go through an agency are securitized in non-agency or private label transactions. Although there is no agency guarantee on those securities per se, there is insurance in the form of a private guarantee or the creation of subordinate classes (the senior classes are given the greatest protection). After a pool of mortgages is securitized, it is sold to investors as a pass-through investment.

Question #49 of 76

Question ID: 495084

Which of the following statements regarding collateralized mortgage obligations (CMOs) is **FALSE**? The:

✗ **A)** **principal pay down window refers to the number of months that it takes for a given tranche to be fully amortized.**

✗ **B)** early maturing tranches offer relatively greater protection against extension risk.

✓ **C)** early maturing tranches offer relatively greater protection against contraction risk.

✗ **D)** longer-term tranches offer relatively greater protection against contraction risk.

Explanation

The early maturing tranches offer relatively greater protection against extension risk, not contraction risk.

Question #50 of 76

Question ID: 440016

The spread (k) that must be added to all of the spot rates along each interest rate path that will force equality between the average present value of the path's cash flows and the market price (plus accrued interest) for the mortgage-backed security (MBS) being evaluated is called the:

✗ **A)** **PAC spread.**

✗ **B)** Monte Carlo spread.

✗ **C)** k-spread.

✓ **D)** option-adjusted spread (OAS).

Explanation

The spread (k) that must be added to all of the spot rates along each interest rate path that will force equality between the average present value of the path's cash flows and the market price (plus accrued interest) for the MBS being evaluated is called the OAS.

Question #51 of 76

Question ID: 439955

Regarding mortgage passthrough securities, which of the following statements is **FALSE**?

✗ **A) Passthrough securities convert illiquid mortgages into liquid securities.**

✗ **B)** Passthrough security investors receive the monthly cash flows generated by the underlying pool of mortgages less any servicing and guarantee/insurance fees.

✓ **C)** The passthrough coupon rates are greater than the average coupon rate of the underlying mortgages in the pool.

✗ **D)** The passthrough coupon rates are less than the average coupon rate of the underlying mortgages in the pool.

Explanation

The passthrough coupon rates are less than the average coupon rate of the underlying mortgages in the pool (due to servicing fees), not greater than the coupon rate.

Question #52 of 76

Question ID: 439260

Which of the following statements regarding callable bonds is *most* accurate? Callable bonds:

✓ **A) typically require that the issuer pay a premium above par to call the issue, and the amount of this premium usually declines as the bond approaches maturity.**

✗ **B)** that have a deferred call feature allow the bondholder to defer the call for up to 5 years.

✗ **C)** are likely to be called when interest rates have increased.

✗ **D)** may not be called at par value--there must be at least a slight call premium to compensate the holder for losing the bond.

Explanation

Callable bonds are called when interest rates have declined. A deferred call provision means that the bond is initially not callable; it does not allow the investor to postpone having his bond called. Callable bonds may be called at par. The indenture specifies the call premium and the rate at which the call premium declines over time.

Question #53 of 76

Question ID: 439964

How is the price of a principal-only mortgage strip affected by declining mortgage rates in the market? The price of the principal-only strip:

✗ **A) may increase or decrease.**

✓ **B)** increases.

✗ **C)** decreases.

✗ **D)** is unaffected.

Explanation

When mortgage rates decline, prepayments are expected to increase. Therefore, the principal-only strip investor gets payments sooner

increasing the value of the PO.

Question #54 of 76

Question ID: 440004

Which of the following statements regarding the Monte Carlo simulation model in valuing mortgage-backed securities is CORRECT?

✓ **A) The Monte-Carlo simulation model is not designed to be arbitrage-free.**

✗ **B)** Monte Carlo models must be calibrated so that the current price generated by the paths in the model is equal to the market price of the on-the-run benchmark issues.

✗ **C)** The key difference between the various suppliers of the Monte-Carlo-based simulation programs is the assumed level of refinancing rates.

✗ **D)** The critical refinancing rate spread (spread relationship between the refinancing rate and the 1-month interest rates along each of the simulated paths) is allowed to vary.

Explanation

The key difference between the various suppliers of the Monte-Carlo-based simulation programs is the assumed level of *interest rate volatility*.

The critical refinancing rate spread (spread relationship between the refinancing rate and the 1-month interest rates along each of the simulated paths) is *assumed to remain constant*.

Monte Carlo models must be calibrated so that the *average* price generated by the paths in the model is equal to the market price of the on-the-run benchmark issues.

Question #55 of 76

Question ID: 439269

Two fixed income analysts are studying bond default rates. Issuer default rates have declined in the current year to date, but dollar default rates have declined by a lesser amount. What is the dollar default rate?

✗ **A) The dollar default rate is the market value of all bonds that defaulted during the year divided by the total market value of all bonds outstanding during the year.**

✓ **B)** The dollar default rate is the par value of all bonds that defaulted during the year divided by the total par value of all bonds outstanding during the year.

✗ **C)** The dollar default rate is the total market value of all bonds that defaulted during the year divided by the recovery rate year to date for all bonds issued.

✗ **D)** The dollar default rate is the number of issues defaulted on during the year divided by the total number of issuers at the beginning of the year.

Explanation

Par value of the bonds is the relevant number for the numerator and divisor. Looking at defaults over multiple years, cumulative dollar value of all defaulted bonds is divided by some weighted-average measure of all bonds issued.

Question #56 of 76

Question ID: 439264

Taylor Park, FRM is studying credit default risk and credit spread risk on various corporate bond issuers. If a corporate bond has a spread duration of 6, how will the value of the bond change if there is a 75 basis point change?

✗ **A) 6.75%.**

✓ **B)** 4.5%.

✗ **C)** 3.0%.

✗ **D)** 6.0%

Explanation

Duration of the spread is the approximate percentage change in the bond's price per 100 basis point movement: 6 × 0.75 = 4.5%.

Question #57 of 76

Question ID: 439975

Based on recent trends, which of the following measures of creditworthiness is generally seen as *least* important by mortgage lenders?

✗ **A) Income ratios.**

✗ **B)** Loan-to-value ratio.

✗ **C)** Credit scores.

✓ **D)** Documentation provided by borrower.

Explanation

Recent trends indicate that supplying documentation is becoming a less viable tool for mortgage lenders. Borrowers may not be denied credit in the event of no or little documentation, however, the mortgage rate assigned will reflect the riskiness of the loan.

Question #58 of 76

Question ID: 439947

In relation to MBS, what is the cause of refinancing burnout?

✓ **A) A number of falls in interest rates.**

✗ **B)** A fall in the supply of mortgage funding.

✗ **C)** Interest rates rising after having fallen.

✗ **D)** Lenders tightening their underwriting after a boom period.

Explanation

When interest rates fall many borrowers refinance (i.e., pay off their loans and take them to a new lender). Once they do this they get locked into a new deal and cannot refinance again rates keep falling—called refinancing burnout.

Question #59 of 76

Question ID: 440001

All of the following are steps used in applying a Monte Carlo simulation model for valuing a mortgage-backed security (MBS) **EXCEPT**:

✗ **A) input potential interest rate paths.**

✗ **B)** use an assumed level of interest volatility.

✓ **C)** stipulate the number of paths the analyst is willing accept.

✗ **D)** use the Treasury yield curve for rates.

Explanation

To use Monte Carlo simulation, you do not need to stipulate the number of paths you would be willing to accept.

Question #60 of 76

Question ID: 439259

Which of the following is the appropriate redemption price when bonds are called according to the sinking fund provision?

✗ **A) Specific redemption price.**

✗ **B)** Regular redemption price.

✗ **C)** General redemption price.

✓ **D)** Special redemption price.

Explanation

Regular redemption and general redemption price are identical and refer to bonds being called according to the provisions specified in the bond indenture. When bonds are redeemed to comply with a sinking fund provision or because of a property sale mandated by government authority, the redemption prices (typically par value) are referred to as "special redemption prices." There is no such thing as a specific redemption price.

Question #61 of 76

Question ID: 440020

If the simulated interest rates are based on the Treasury curve, then how is the option-adjusted spread obtained (OAS) using the Monte Carlo simulation model interpreted? The OAS is the:

✗ **A) spread over the Treasury spot rate corresponding to the maturity of the mortgage-backed security.**

✗ **B)** price difference between a mortgage-backed security and the corresponding Treasury security.

✗ **C)** average spread over the Treasury yield.

✓ **D)** average spread over the Treasury spot rate curve.

Explanation

The monthly rates along the paths generated with the Monte Carlo simulation model using the Treasury yield curve as a benchmark are Treasury spot rates that have been adjusted to be arbitrage-free. As such, the OAS measures the average spread over Treasury spot rates, *not* the Treasury yield.

Question #62 of 76

Question ID: 439255

An elderly client is evaluating different options regarding the proper bonds to purchase. What is the closest definition of a "guaranteed bond"?

✓ **A) A guaranteed bond is guaranteed by another firm.**

✗ **B)** A guaranteed bond is guaranteed free of default risk.

✗ **C)** A guaranteed bond is guaranteed by the issuing firm's overall credit performance.

✗ **D)** A guaranteed bond is guaranteed in a series in a blanket arrangement.

Explanation

A guaranteed bond is guaranteed by another company, but it is not free of default risk. It is dependent on the guarantor's ability to satisfy all obligations.

Question #63 of 76

Question ID: 439969

How is a collateralized mortgage obligation (CMO) created? A CMO is created by:

✗ **A) eliminating extension risk.**

✗ **B)** eliminating contraction risk.

✗ **C)** eliminating prepayment risk.

✓ **D)** redistributing the cash flows of mortgage-related products to different bond classes.

Explanation

Creating CMO's distributes the various forms of prepayment risk among different classes of bondholders which allows the CMO to more closely satisfy the asset/liability needs of institutional investors.

Question #64 of 76

Question ID: 440018

Generally speaking, an analyst would like the adjusted spread (OAS) to be:

✗ **A) small.**

✓ **B)** big.

✗ **C)** zero.

✗ **D)** negative.

Explanation

Generally speaking, an analyst would like the OAS to be big.

Question #65 of 76

Question ID: 439988

What is a curtailment in relation to a mortgage?

✓ **A) Prepayments of a mortgage for less than the full amount.**

✗ **B)** Prepayments of a mortgage for the entire amount.

✗ **C)** A default on a mortgage.

✗ **D)** Payments that come in slower than expected.

Explanation

Curtailments are payments on mortgages for less than the full amount. For example, if a mortgage balance is $100,000, and the borrower makes a prepayment of only $500, that payment would be a curtailment.

Question #66 of 76

Question ID: 439982

Regarding a fixed-rate, level payment, and fully amortized mortgage loan, which of the following statements is **FALSE**?

✗ **A) Each payment consists of an interest component and a principal component.**

✗ **B)** Interest payments fall as principal payments rise over the life of the loan.

✗ **C)** Payments are equal over the life of the loan.

✓ **D)** Principal repayment falls as interest payments rise over the life of the loan.

Explanation

Interest payments fall as principal payments rise over the life of the loan, not the other way around.

Question #67 of 76

Question ID: 439944

The most important determinant of refinancing burnout is the:

✗ **A) current level of interest rates.**

✗ **B)** spread between the current mortgage rate and the original rate.

✓ **C)** path that mortgage rates have followed since origination.

✗ **D)** season of the year.

Explanation

Refinancing burnout refers to the fact that even though interest rates may be low relative to the original mortgage rate, homeowners may have already refinanced due to a prior rate drop.

Question #68 of 76

Question ID: 439265

Which of the following circumstances is an example of event risk?

✗ **A) A bond's bid/ask spread widens.**

✗ **B)** A currency devalues due to foreign exchange market forces.

✗ **C)** The U.S. Federal Reserve unexpectedly increases interest rates by 100 basis points.

✓ **D)** A local government regulatory agency introduces more stringent clean-water requirements that will significantly reduce the cash flow of an area paper mill.

Explanation

A local government regulatory agency introducing more stringent clean-water requirements that will significantly reduce the cash flow of an area paper mill is an example of *regulatory risk*, which is a type of event risk. The impact of regulatory risk can be long-term, in that the company may be unable to pass on the increased cost to customers.

The other choices are examples of other types of risk that bondholders face. A widening bid-ask spread indicates increased *liquidity risk*. The Federal Reserve's action is an example of *interest rate risk*. The currency's devaluation is an example of *currency risk*.

Question #69 of 76

Question ID: 440005

Which of the following is a limitation of the zero-volatility spread for a mortgage-backed security (MBS)? The zero-volatility spread:

✗ **A) does not account for the fact that MBSs have lower convexity than Treasuries.**

✗ **B)** is not adjusted for interest rate risk.

✗ **C)** does not account for the fact that MBSs have higher convexity than Treasuries.

✓ **D)** is not adjusted for prepayment risk.

Explanation

The zero-volatility spread (also known as the Z-spread or static spread) is the spread that must be added to Treasury spot rates that will cause the discounted value of the cash flows for an MBS or asset-backed security (ABS) to equal its price, assuming that the security is held until maturity. The chief drawback of the Z-spread is that it is not adjusted for prepayments risk.

Question #70 of 76

Question ID: 439966

Principal-only strips are:

✗ **A) sold at par.**

✗ **B)** could be sold at a discount or a premium, depending on economic conditions.

✗ **C)** sold at a considerable premium to par.

✓ **D)** sold at a considerable discount to par.

Explanation

Principal-only strips are sold at a considerable discount to par.

Question #71 of 76

Question ID: 439957

Consider a pool of mortgages that were issued exactly 22 months ago (they are beginning month 23). What is the conditional prepayment rate (CPR) and the single monthly mortality rate (SMM) assuming 150 percent PSA?

	CPR	SMM
✗ **A)**	**4.6%**	**0.59%**
✗ **B)**	4.6%	0.63%
✓ **C)**	6.9%	0.59%
✗ **D)**	6.9%	0.63%

Explanation

CPR = 6% × 23/30

CPR = 4.6%

Note: To calculate the CPR you needed to know that the CPR is based upon 6% and rises from 0.2 percent per month each month until month 30.

150 PSA = 1.5 × 4.6% = 6.9%

$SMM = 1 - (1 - CPR)^{1/12}$

$SMM = 1 - (1 - 0.069)^{1/12}$

$SMM = 0.59\%$

Question #72 of 76

Question ID: 439956

In measuring prepayment speeds for a pool of mortgages with the assumption of 125 PSA, which of the following statements regarding the conditional prepayment rate (CPR) and single monthly mortality rate (SMM) is *least* accurate?

✗ **A) The SMM in month 20 is 0.004265319.**

✗ **B)** The CPR in month 20 is 0.05.

✓ **C)** The SMM in month 35 is 0.00760156.

✗ **D)** The CPR in month 35 is 0.075.

Explanation

CPR (month 20) = 20 × 0.2% = 4%

125 PSA = 1.25 × 4 = 0.05

$SMM = 1 - (1 - 0.05)^{1/12} = 0.004265319$

CPR (month 35) = 6%

125 PSA = 1.25 × 6 = 0.075

$SMM = 1 - (1 - 0.075)^{1/12} = 0.006475737$

Question #73 of 76

Question ID: 439254

A Fortune 500 firm is considering issuing subordinated debenture bonds. How would these bonds be best characterized?

✗ **A) The bonds are secured, but have other bonds with a higher claim above them.**

✗ **B)** The bonds typically pay a higher interest rate, and are secured by equipment.

✓ **C)** The bonds are unsecured, and have other bonds with a higher claim above them.

✗ **D)** The bonds are backed by selected obligations that the company owns.

Explanation

By definition, a debenture is an unsecured bond. In the event of default, subordinated debenture bonds are at the bottom of the list of creditors.

Question #74 of 76

Question ID: 439257

The refunding provision found in nonrefundable bonds allows bonds to be retired *unless*:

✗ **A) the funds come from earnings.**

✓ **B)** the funds come from a lower cost bond issue.

✗ **C)** market interest rates have increased substantially.

✗ **D)** the funds come from the sale of new common stock.

Explanation

Refunding from a new debt issue at a higher interest rate is not prohibited, however their purchase cannot be funded by the simultaneous issuance of lower coupon bonds.

Question #75 of 76

Question ID: 439251

Which of the following statements concerning coupon rate structures is *least* accurate?

✗ **A)** **Zero-coupon bonds have only one cash inflow at maturity.**

✓ **B)** Accrual bonds, like zero-coupon bonds, always sell at a discount to face value.

✗ **C)** Step-up notes have coupon rates that increase over time at a pre-specified rate.

✗ **D)** Accrual bonds have only one cash inflow at maturity.

Explanation

Accrual bonds, unlike zero-coupon bonds, do not always sell at a discount to face value. The interest accrues forward and thus the bonds are likely to sell for more than face value.

Question #76 of 76

Question ID: 439965

Which of the following is *most accurate* regarding the investment characteristics of a principal-only (PO) mortgage strip?

✗ **A)** **The higher the coupon the higher the investor's return.**

✗ **B)** The slower the prepayments the higher the investor's return.

✗ **C)** The lower the coupon the higher the investor's return.

✓ **D)** The faster the prepayments the higher the investor's return.

Explanation

For a principal mortgage strip the investor does not receive interest but only the principal. Therefore, the sooner the investor receives the principal the higher the return.