

## Question 1

L2DR-PQ5204-1410

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

ABC Company files for bankruptcy, triggering payments on various CDS contracts written on its obligations. It has two series of senior unsecured bonds outstanding: Bond A trades at 30% of par, and Bond B trades at 40% of par. Mesut Ozil owns \$7 million of Bond A and owns \$7 million of CDS protection, while Aaron Ramsey owns \$7 million of Bond B and owns \$7 million of CDS protection.

An analyst makes the following statements:

**Statement 1:** Ozil would be indifferent between a cash and physical settlement.

**Statement 2:** Ramsey would prefer a cash settlement.

Which of the following is *most likely*?

- ☐ Only Statement 1 is incorrect.
- ☐ Only Statement 2 is incorrect.
- ☒ Both statements are correct.

### Rationale

#### This Answer is Correct

Ozil would be indifferent. He can cash settle for a CDS payoff of \$4.9 million [=  $(1 - 30\%) \times \$7 \text{ million}$ ] and sell his bonds for \$2.1 million [=  $30\% \times \$7 \text{ million}$ ], for a total payoff of \$7 million. Alternatively, he can physically deliver all her bonds (\$7 million face value) over to the protection seller in exchange for \$7 million in cash.

Ramsey would prefer a cash settlement because he holds Bond B, which holds more value (due to its higher recovery rate) than the cheapest-to-deliver obligation. He will receive a \$4.9 million payout on his CDS contract (same as Ozil), but he can sell Bond B for \$2.8 million [=  $40\% \times \$7 \text{ million}$ ], for a total payoff of \$7.7 million. If he were to physically settle his contract, he would receive only \$7 million, the face value of his bond holdings.

## Question 2

L2R52TB-AC015-1512

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

A CDS buyer has the option of cash settlement or physical delivery. The following bonds are outstanding for the reference entity on a particular senior CDS contract.

Bond 1: senior unsecured bond trading at 65 percent of par.

Bond 2: senior unsecured bond trading at 40 percent of par.

Bond 3: subordinated unsecured bond trading at 35 percent of par.

If a credit event triggers a payout on the CDS, the holder of which bond would *most likely* prefer cash settlement to physical delivery?

- ☒ Bond 1.
- ☐ Bond 2.
- ☐ Bond 3.

### Rationale

#### ✔ Bond 1.

The CDS payout will be based on the cheapest-to-deliver, which is Bond 2 trading at 40 percent of par. The payout will be  $(1 - 0.40) \times \text{Notional}$ . The holder of Bond 2 will be indifferent between cash settlement or physical delivery. However, the holder of Bond 1 will receive the same payout as the holder of Bond 2 but be able to sell Bond 1 in the market at a higher price (65 percent of par). Bond 3 is a subordinated issue that would not be covered by the CDS.

### Rationale

#### ✘ Bond 2.

The CDS payout will be based on the cheapest-to-deliver, which is Bond 2 trading at 40 percent of par. The payout will be  $(1 - 0.40) \times \text{Notional}$ . The holder of Bond 2 will be indifferent between cash settlement or physical delivery. However, the holder of Bond 1 will receive the same payout as the holder of Bond 2 but be able to sell Bond 1 in the market at a higher price (65 percent of par). Bond 3 is a subordinated issue that would not be covered by the CDS.

### Rationale

#### ✘ Bond 3.

The CDS payout will be based on the cheapest-to-deliver, which is Bond 2 trading at 40 percent of par. The payout will be  $(1 - 0.40) \times \text{Notional}$ . The holder of Bond 2 will be

indifferent between cash settlement or physical delivery. However, the holder of Bond 1 will receive the same payout as the holder of Bond 2 but be able to sell Bond 1 in the market at a higher price (65 percent of par). Bond 3 is a subordinated issue that would not be covered by the CDS.

### Question 3

L2R52TB-AC010-1512

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

The portfolio manager of a bond portfolio wants to buy a single-issuer CDS. The reference obligation is a high-yield issuer and the CDS uses the standard coupon rate for that class of bond. If the actual credit spread is 4.5 percent, the upfront premium is *closest to*:

- ☒ 0.5% paid to the buyer.
- ☐ 0.5% paid to the seller.
- ☐ 3.5% paid to the seller.

#### Rationale

✔ **0.5% paid to the buyer.**

The standard coupon rate for a CDS on a high-yield reference obligation is 5%. The upfront premium is the actual credit spread minus the standard coupon rate.

$$\text{Upfront premium} = 4.5\% - 5.0\% = -0.5\%$$

Since the upfront premium is negative (i.e., the standard rate is too high), it is paid by the seller to the buyer.

#### Rationale

✘ **0.5% paid to the seller.**

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#### Rationale

✘ **3.5% paid to the seller.**

The standard coupon rate for a CDS on a high-yield reference obligation is 5%. The upfront premium is the actual credit spread minus the standard coupon rate.

$$\text{Upfront premium} = 4.5\% - 5.0\% = -0.5\%$$

Since the upfront premium is negative (i.e., the standard rate is too high), it is paid by the seller to the buyer.

#### Question 4

L2DR-PQ5209-1410

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

An investor purchased \$5 million of five-year CDS protection. The CDS contract has a duration of 5 years. The company's credit spread was originally 300 bps but now widens to 400 bps. Which of the following is *most likely*?

- ☒ The protection buyer profits and his profit approximately equals \$250,000.
- ☐ The protection seller profits and his profit approximately equals \$250,000.
- ☐ The protection buyer profits and his profit approximately equals \$50,000.

#### Rationale

 **This Answer is Correct**

The increase in the credit spread benefits the protection buyer. His profit can be estimated as:

Profit for protection buyer = Change in spread in bps  $\times$  Duration  $\times$  Notional =  $0.01 \times \$5\text{m} \times 5$   
= \$250,000

### Question 5

L2R52TB-AC014-1512

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

The Ajax Manufacturing Company declared bankruptcy with several outstanding debt issues. One of its bondholders had purchased a single-entity, senior CDS contract with Ajax as the reference entity and \$1 million notional.

Bond 1: senior unsecured bond trading at 55 percent of par

Bond 2: senior unsecured bond trading at 50 percent of par

Bond 3: subordinated unsecured bond trading at 35 percent of par

The payout amount on the CDS will be *closest to*:

☐ \$650,000

☒ \$500,000

☐ \$450,000

#### Rationale

 **\$650,000**

The cheapest-to-deliver bond sets the payout ratio based on auction to bankers and dealers. The contract covers senior unsecured debt, so Bond 3 is not a covered instrument because it is subordinated debt. The cheapest of the senior bonds is Bond 2, which is trading at 50 percent of par. The payout ratio is the complement of the recovery rate, or  $1 - \text{Price} = 1 - 0.50 = 0.50$ . The payout amount is the payout ratio times the notional, which is  $0.50 \times \$1,000,000 = \$500,000$ .

#### Rationale

 **\$500,000**

The cheapest-to-deliver bond sets the payout ratio based on auction to bankers and dealers. The contract covers senior unsecured debt, so Bond 3 is not a covered instrument because it is subordinated debt. The cheapest of the senior bonds is Bond 2, which is trading at 50 percent of par. The payout ratio is the complement of the recovery rate, or  $1 - \text{Price} = 1 - 0.50 = 0.50$ . The payout amount is the payout ratio times the notional, which is  $0.50 \times \$1,000,000 = \$500,000$ .

#### Rationale

 **\$450,000**

The cheapest-to-deliver bond sets the payout ratio based on auction to bankers and dealers. The contract covers senior unsecured debt, so Bond 3 is not a covered instrument

because it is subordinated debt. The cheapest of the senior bonds is Bond 2, which is trading at 50 percent of par. The payout ratio is the complement of the recovery rate, or  $1 - \text{Price} = 1 - 0.50 = 0.50$ . The payout amount is the payout ratio times the notional, which is  $0.50 \times \$1,000,000 = \$500,000$ .



## Question 6

L2R52TB-AC011-1512

LOS: LOS-10300

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

Which of the following is *least likely* to change the value of a CDS during the life of the contract?

- ☐ The reference entity's credit is upgraded.
- ☒ The level of interest rates falls.
- ☐ The reference entity's credit spread widens.

### Rationale

 **The reference entity's credit is upgraded.**

Changes in the reference entity's credit quality will cause the value of the CDS to change during the life of the contract. Changes in the level of interest rates would change the value of the reference obligations, but that is interest rate risk and does not directly affect the credit risk of the reference entity.

### Rationale

 **The level of interest rates falls.**

Changes in the reference entity's credit quality will cause the value of the CDS to change during the life of the contract. Changes in the level of interest rates would change the value of the reference obligations, but that is interest rate risk and does not directly affect the credit risk of the reference entity.

### Rationale

 **The reference entity's credit spread widens.**

Changes in the reference entity's credit quality will cause the value of the CDS to change during the life of the contract. Changes in the level of interest rates would change the value of the reference obligations, but that is interest rate risk and does not directly affect the credit risk of the reference entity.

### Question 7

L2DR-TBB213-1412

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

When pricing a CDS, the *hazard rate* refers to:

- ☐ The unconditional probability of default.
- ☐ The probability of survival.
- ☒ The conditional probability of default.

#### Rationale

##### **This Answer is Correct**

The hazard rate refers to the probability of default for a bond given that it has not already defaulted, which is a conditional probability.

### Question 8

L2R52TB-ITEMSET-AC004-1512

LOS: LOS-10280

LOS: LOS-10290

LOS: LOS-10300

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

**Use the following information to answer the next three questions:**

Alex Parkin examines a two-year 7 percent coupon bond that makes annual coupon payments. The face value is \$1,000. The hazard rate is 3 percent for the first year and 9 percent for the second year. The recovery rate is 40% in the case of default. Parkin needs to find answers to the following questions:

1. What is the probability of default, where default is defined as the issuing firm failing to make either a coupon payment or the face value payment during the life of the bond?
2. What is the expected loss in case of default?

Based on his analysis, Parkin concludes that the five-year credit spread of the firm is expected to widen while the ten-year credit spread of the firm is expected to remain unchanged. Advise Parkin a credit curve trade motivated by this belief.

Additionally, Parkin finds out that the following three terms are closely related in CDS pricing and valuation:

- X. Cost of insuring a bond;
- Y. Present value of expected loss; and
- Z. Present value of credit spreads.

Alex would like to know the relations among the above three terms.

i.

What is the probability of default and the expected loss, respectively?

- ☐ 0.8827 and \$56.05, respectively.
- ☒ 0.1173 and \$76.57, respectively.
- ☐ 0.0873 and \$76.57, respectively.

#### Rationale

 **This Answer is Correct**

If there is no default, the bond pays \$70 in one year and \$1,070 in two years. The probability of no default is  $0.97 \times 0.91 = 0.8827$ . In which case, the loss due to default is zero.

If the firm defaults at the end of the first year, 40% recovery rate implies that the bond pays \$28 in one year and \$428 in two years. The probability of default in one year is 3%. Loss due

to default is \$42 in the first year and \$642 in the second year, or \$684 in total if we ignore time value of money.

If the firm does not default in one year, but it defaults in two years, the bond pays \$70 in one year and \$428 in two years. The probability is  $0.97 \times 0.09 = 0.0873$ . Loss due to default is \$642.

$$\begin{aligned}\text{Expected loss} &= (0 \times 0.8827) + (684 \times 0.03) + (642 \times 0.0873) \\ &= \$76.57\end{aligned}$$

Answer: probability of default =  $1 - 0.8827 = 0.03 + 0.0873 = 0.1173$ . Expected loss due to default is \$76.57.

### Rationale

#### ✔ This Answer is Correct

If there is no default, the bond pays \$70 in one year and \$1,070 in two years. The probability of no default is  $0.97 \times 0.91 = 0.8827$ . In which case, the loss due to default is zero.

If the firm defaults at the end of the first year, 40% recovery rate implies that the bond pays \$28 in one year and \$428 in two years. The probability of default in one year is 3%. Loss due to default is \$42 in the first year and \$642 in the second year, or \$684 in total if we ignore time value of money.

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### Rationale

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to default is \$42 in the first year and \$642 in the second year, or \$684 in total if we ignore time value of money.

If the firm does not default in one year, but it defaults in two years, the bond pays \$70 in one year and \$428 in two years. The probability is  $0.97 \times 0.09 = 0.0873$ . Loss due to default is \$642.

$$\begin{aligned}\text{Expected loss} &= (0 \times 0.8827) + (684 \times 0.03) + (642 \times 0.0873) \\ &= \$76.57\end{aligned}$$

Answer: probability of default =  $1 - 0.8827 = 0.03 + 0.0873 = 0.1173$ . Expected loss due to default is \$76.57.

ii.

Which of the following answer *best* describes an appropriate credit curve trade based on Parkin's analysis?

- ☐ Sell a five-year CDS and buy a 10-year CDS.
- ☐ Buy a five-year CDS and buy a 10-year CDS.
- ☒ Buy a five-year CDS and sell a 10-year CDS.

#### Rationale

##### This Answer is Incorrect

If Alex buys a five-year CDS, its value increases as the five-year credit spread widens. If Alex sells a ten-year CDS and if the ten-year credit spread remains unchanged, Alex gains on the CDS premium the CDS buyer pays to Alex over time. The right answer is C.

#### Rationale

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#### Rationale

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iii.

What are the *correct* relations among the three terms, X, Y, and Z related to CDS pricing and valuation?

- ☒  $X = Y = Z$ .
- ☐  $X = Y \neq Z$ .
- ☐  $X = Z \neq Y$ .

**Rationale**

**✗ This Answer is Incorrect**

All three terms are the same value. They represent the cost of insuring a bond and the loss to the credit protection seller in case of a default.

**Rationale**

**✗ This Answer is Incorrect**

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**Rationale**

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All three terms are the same value. They represent the cost of insuring a bond and the loss to the credit protection seller in case of a default.

### Question 9

L2DR-PQ5207-1410

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

An investor sold five-year protection on an investment-grade company and had to pay a 1.0% upfront premium to the buyer of protection. Given that the duration of the CDS was 4 years, the company's credit spread was *closest to*:

- ☐ 0.25%
- ☒ 0.75%
- ☐ 1.25%

#### Rationale

 **This Answer is Correct**

In this case, the investor has sold protection on the CDS and had to pay the upfront premium, which means that the coupon rate on the standardized CDS (1% on CDS on investment-grade bonds) is higher than the credit spread required given the company's level of risk. This means that the upfront premium would be a negative number (as credit spread < fixed coupon).

Upfront premium % = (Credit spread – Fixed coupon) × Duration of CDS – 1% = (Credit spread – 1%) × 4  
Credit spread = 0.75%

### Question 10

L2R52TB-AC019-1512

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

A hazard rate can *best* be described as:

- ☐ the rate of default.
- ☒ a conditional probability of default.
- ☐ the complement of the recovery rate.

#### Rationale

 **the rate of default.**

The hazard rate is the probability that an event will occur given that it has not already occurred. For CDS pricing, it is the probability of default given that the entity did not default in the preceding periods.

#### Rationale

 **a conditional probability of default.**

The hazard rate is the probability that an event will occur given that it has not already occurred. For CDS pricing, it is the probability of default given that the entity did not default in the preceding periods.

#### Rationale

 **the complement of the recovery rate.**

The hazard rate is the probability that an event will occur given that it has not already occurred. For CDS pricing, it is the probability of default given that the entity did not default in the preceding periods.



### Question 11

L2R52TB-AC009-1512

LOS: LOS-10260

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

Which of the following index CDS would *most likely* provide credit protection at the lowest cost?

- ☐ A portfolio of high-yield bonds.
- ☐ A portfolio of auto industry issues.
- ☒ A diverse portfolio of various debt instruments.

#### Rationale

##### **A portfolio of high-yield bonds.**

With respect to an index CDS, the higher the correlation of default among the component issues, the more expensive the credit protection will be. A diversified portfolio of debt instruments will likely have the lowest average correlation when compared with high-yield or industry-concentrated portfolios.

#### Rationale

##### **A portfolio of auto industry issues.**

With respect to an index CDS, the higher the correlation of default among the component issues, the more expensive the credit protection will be. A diversified portfolio of debt instruments will likely have the lowest average correlation when compared with high-yield or industry-concentrated portfolios.

#### Rationale

##### **A diverse portfolio of various debt instruments.**

With respect to an index CDS, the higher the correlation of default among the component issues, the more expensive the credit protection will be. A diversified portfolio of debt instruments will likely have the lowest average correlation when compared with high-yield or industry-concentrated portfolios.

## Question 12

L2DR-TBX109-1502

LOS: LOS-10300

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: easy

An investor notes that a corporate bond currently yields 5% and has a comparable CDS contract with a premium of 4%. The investor's cost of borrowing is 0.75%. In order to execute a basis trade, the investor should:

- ☐ Buy the bond and sell the CDS.
- ☒ Buy the bond and buy the CDS.
- ☐ Sell the bond and buy the CDS.

### Rationale

#### This Answer is Correct

The investor can buy the bond and earn a credit spread of 4.25% over its cost of funds.

Buying a CDS at 4% will remove the credit risk of the bond and leave the investor profiting by 0.25%.

### Question 13

L2R52TB-AC017-1512

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

An investor sells credit protection via the iTraxx Main CDS contract, which includes 125 investment-grade issuers. The notional amount is €250 million. The investor is worried about a few of the companies in the index and buys a single-entity CDS on Company X with €2 million notional. Soon after, Company X defaults. What is the value of the investor's net exposure to Company X?

- ☐ €2 million.
- ☐ €1 million.
- ☒ No net exposure.

#### Rationale

 **€2 million.**

The investor has sold protection on the index and purchased protection on Company X. The index has 125 constituent issuers, which are equally weighted. Therefore, each issuer represents  $1/125$  of the notional exposure. The notional amount on the index CDS is €250 million with each constituent issuer constituting  $€250M/125 = €2M$ . By purchasing protection on Company X with a €2 million notional, the investor has fully hedged his exposure to Company X.

#### Rationale

 **€1 million.**

The investor has sold protection on the index and purchased protection on Company X. The index has 125 constituent issuers, which are equally weighted. Therefore, each issuer represents  $1/125$  of the notional exposure. The notional amount on the index CDS is €250 million with each constituent issuer constituting  $€250M/125 = €2M$ . By purchasing protection on Company X with a €2 million notional, the investor has fully hedged his exposure to Company X.

#### Rationale

 **No net exposure.**

The investor has sold protection on the index and purchased protection on Company X. The index has 125 constituent issuers, which are equally weighted. Therefore, each issuer represents  $1/125$  of the notional exposure. The notional amount on the index CDS is €250 million with each constituent issuer constituting  $€250M/125 = €2M$ . By purchasing protection on Company X with a €2 million notional, the investor has fully hedged his exposure to Company X.



### Question 14

L2R52TB-AC012-1512

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

The buyer of a CDS would *most likely* be able to unwind his position with a profit if:

- ☒ The reference entity's credit quality deteriorates.
- ☐ The reference entity's credit spread narrows.
- ☐ The prevailing interest rates rise.

#### Rationale

##### **The reference entity's credit quality deteriorates.**

The buyer of a CDS must pay a periodic coupon to the seller. If the actual credit spread widens, as it would if the reference entity's credit quality deteriorated, the difference between the actual spread and the standard CDS coupon rate would shrink (or become more negative). Thus, the updated upfront premium would move in the buyer's favor, increasing the value of his position. The contract could then be unwound by an offsetting position, monetizing the profit.

#### Rationale

##### **The reference entity's credit spread narrows.**

The buyer of a CDS must pay a periodic coupon to the seller. If the actual credit spread widens, as it would if the reference entity's credit quality deteriorated, the difference between the actual spread and the standard CDS coupon rate would shrink (or become more negative). Thus, the updated upfront premium would move in the buyer's favor, increasing the value of his position. The contract could then be unwound by an offsetting position, monetizing the profit.

#### Rationale

##### **The prevailing interest rates rise.**

The buyer of a CDS must pay a periodic coupon to the seller. If the actual credit spread widens, as it would if the reference entity's credit quality deteriorated, the difference between the actual spread and the standard CDS coupon rate would shrink (or become more negative). Thus, the updated upfront premium would move in the buyer's favor, increasing the value of his position. The contract could then be unwound by an offsetting position, monetizing the profit.

### Question 15

L2R52TB-AC013-1512

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

Which of the following would *least likely* be considered a credit event that would trigger a payout to the buyer of a European CDS?

- ☐ Declaration of bankruptcy.
- ☐ Involuntary restructuring.
- ☒ Succession event.

#### Rationale

##### **Declaration of bankruptcy.**

A succession event arises through merger, divestiture, or spinoff of the reference entity. The determinations committee of the ISDA decides whether the succession event results in a modification of the CDS contract to revise the reference entity to match the new structure. It is not, itself, a credit event that would trigger a payout. Involuntary restructuring is not typically considered a credit event in the U.S. because bankruptcy is the more common resolution of credit disputes, but it is recognized as a credit event in most other markets.

#### Rationale

##### **Involuntary restructuring.**

A succession event arises through merger, divestiture, or spinoff of the reference entity. The determinations committee of the ISDA decides whether the succession event results in a modification of the CDS contract to revise the reference entity to match the new structure. It is not, itself, a credit event that would trigger a payout. Involuntary restructuring is not typically considered a credit event in the U.S. because bankruptcy is the more common resolution of credit disputes, but it is recognized as a credit event in most other markets.

#### Rationale

##### **Succession event.**

A succession event arises through merger, divestiture, or spinoff of the reference entity. The determinations committee of the ISDA decides whether the succession event results in a modification of the CDS contract to revise the reference entity to match the new structure. It is not, itself, a credit event that would trigger a payout. Involuntary restructuring is not typically considered a credit event in the U.S. because bankruptcy is the more common resolution of credit disputes, but it is recognized as a credit event in most other markets.

### Question 16

L2DR-PQ5210-1410

LOS: LOS-10300

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

A company's bond currently yields 4.5% and matures in ten years. A ten-year CDS contract on the same bond has a credit spread of 2.35%. The investor can borrow in the market at a 1.75% interest rate. Which of the following is *most likely*?

- ☐ The investor should buy protection in the CDS market and short the bond.
- ☐ The investor should sell protection in the CDS market and buy the bond.
- ☒ The investor should buy protection in the CDS market and buy the bond.

#### Rationale

##### **This Answer is Correct**

The investor should buy protection in the CDS market at 2.35% and go long on the bond (which prices in a 2.75% credit risk premium). Overall, the investor will have no exposure to credit risk and will earn the 0.4% differential if and when the markets converge.

### Question 17

L2DR-TBX108-1502

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: easy

Assume a high-yield company's seven-year credit spread is 800 bp, and the duration of the CDS is five years. Assuming that high-yield companies have 5% coupons on their CDS, which of the following amounts is *closest* to the approximate up-front premium required to buy seven-year CDS protection?

- ☐ 3%.
- ☐ 5%.
- ☒ 15%.

#### Rationale

##### This Answer is Correct

To buy seven-year CDS protection, an investor would have to pay a 5% coupon plus the present value of the difference between the coupon and the current market spread of 800 bp. An approximation of the present value of a stream of payments can be made by multiplying the payment rate by the duration. Hence, in this case, the up-front premium is approximately  $(8\% - 5\%) \times 5 = 15\%$  of the notional value of the contract.



### Question 18

L2R52TB-AC023-1512

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

An investor is considering a CDS on an investment-grade company's debt. The derivative's 5-year credit spread is 250 basis points with a duration of 3.8 years. If investment-grade CDS assume a standard 1 percent coupon rate, the upfront premium required to purchase this instrument is approximately:

- ☐ 1.5 percent.
- ☐ 3.8 percent.
- ☒ 5.7 percent.

#### Rationale

✗ **1.5 percent.**

The upfront premium is approximated by:

$$\begin{aligned}\text{Upfront premium} &\approx (\text{Credit spread} - \text{Coupon rate})\text{DUR} = (2.50\% - 1.00\%)3.8 \\ &= 5.7\%\end{aligned}$$

#### Rationale

✗ **3.8 percent.**

The upfront premium is approximated by:

$$\begin{aligned}\text{Upfront premium} &\approx (\text{Credit spread} - \text{Coupon rate})\text{DUR} = (2.50\% - 1.00\%)3.8 \\ &= 5.7\%\end{aligned}$$

#### Rationale

✓ **5.7 percent.**

The upfront premium is approximated by:

$$\begin{aligned}\text{Upfront premium} &\approx (\text{Credit spread} - \text{Coupon rate})\text{DUR} = (2.50\% - 1.00\%)3.8 \\ &= 5.7\%\end{aligned}$$

### Question 19

L2DR-PQ5206-1410

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

A high-yield company's 8-year credit spread is 525 bps. The duration of the CDS is 6 years, while the duration of the reference obligation is 7 years. Given that a (standardized) CDS on the company's debt carries a coupon of 5%, the upfront premium required to buy 8-year CDS protection is *closest to*:

- ☒ 1.5% of the notional.
- ☐ 1.75% of the notional.
- ☐ No upfront premium payment would be required to buy protection.

#### Rationale

##### **This Answer is Correct**

Given that the credit spread on the issue is greater than the fixed coupon on the standardized CDS, the investor would have to make an upfront payment to buy protection (as she would be paying a lower credit spread on the CDS than required given the reference obligation's risk- 5% versus 5.25%). In this case the upfront premium would be  $(5.25\% - 5\%) \times 6 = 1.5\%$  of the notional.

## Question 20

L2R52TB-AC008-1512

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

The Ajax Manufacturing Company declared bankruptcy with several outstanding debt issues.

Which of the following bond series would be considered the cheapest-to-deliver for a senior CDS contract?

- ☐ A senior unsecured bond trading at 55 percent of par.
- ☒ A senior unsecured bond trading at 50 percent of par.
- ☐ A subordinated unsecured bond trading at 35 percent of par.

### Rationale

 **A senior unsecured bond trading at 55 percent of par.**

The senior CDS contract provides protection for all senior unsecured debt issued by the company. The cheapest-to-deliver bond determines the payoff on a CDS in the event of default. In this case, the cheapest-to-deliver bond is the senior unsecured bond trading at the lowest percent of par.

### Rationale

 **A senior unsecured bond trading at 50 percent of par.**

The senior CDS contract provides protection for all senior unsecured debt issued by the company. The cheapest-to-deliver bond determines the payoff on a CDS in the event of default. In this case, the cheapest-to-deliver bond is the senior unsecured bond trading at the lowest percent of par.

### Rationale

 **A subordinated unsecured bond trading at 35 percent of par.**

The senior CDS contract provides protection for all senior unsecured debt issued by the company. The cheapest-to-deliver bond determines the payoff on a CDS in the event of default. In this case, the cheapest-to-deliver bond is the senior unsecured bond trading at the lowest percent of par.

### Question 21

L2R52TB-ITEMSET-AC001-1512

LOS: LOS-10280

LOS: LOS-10290

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

Use the following information to answer the next three questions:

Maria Garcia is studying credit default swaps. She examines a hazard function and expected loss in the event of default on a corporate bond. The bond has seven years to maturity and carries an investment-grade rating. The conditional probability of default in each year between years 1 through 6 is 4 percent per year and the conditional probability of default in the last year, Year 7, is 9 percent. In the event of default, the recovery rate is 45% of scheduled payments. A five-year CDS on the firm's bonds has a duration of 4 years. The fixed coupon rate on the CDS is 1 percent on an investment grade bond.

Garcia's friend, Jose Rodrigues, makes the following statements about pricing of a CDS contract:

**Statement A:** Pricing of a CDS is essentially computing the upfront premium payment so that the CDS is a fair deal to both the buyer and the seller of the CDS.

**Statement B:** The amount of the upfront premium payment that the CDS buyer pays to the seller is the difference between present value of fixed coupon payments and the present value of expected loss in the event of default.

In addition to CDS premium, Garcia notes that the credit spread is another measure of a firm's default risk. Maria would like to investigate the relation between CDS upfront premium and credit spread.

i.

What is the probability of the issuing firm does not make all bond coupon and face value payments on time over the life of the bond, i.e., the firm defaults on at least one of its coupon payments or its face value at bond maturity?

☐ 0.09

☒ 0.29

☐ 0.71

#### Rationale

##### This Answer is Correct

If the firm makes all bond coupon and face value payments on time, the firm must survive each of the next seven years. The probability is  $(1 - 0.04)^6 (1 - 0.09) = 0.71$ . The probability of the opposite, that the firm defaults on one of its coupon or face value payments, is  $1 - 0.71 = 0.29$ .

### Rationale

#### ✔ This Answer is Correct

If the firm makes all bond coupon and face value payments on time, the firm must survive each of the next seven years. The probability is  $(1 - 0.04)^6 (1 - 0.09) = 0.71$ . The probability of the opposite, that the firm defaults on one of its coupon or face value payments, is  $1 - 0.71 = 0.29$ .

### Rationale

#### ✔ This Answer is Correct

If the firm makes all bond coupon and face value payments on time, the firm must survive each of the next seven years. The probability is  $(1 - 0.04)^6 (1 - 0.09) = 0.71$ . The probability of the opposite, that the firm defaults on one of its coupon or face value payments, is  $1 - 0.71 = 0.29$ .

ii.

Which of the Rodriguez's statement(s) is (are) *true* regarding the upfront premium payment in a CDS contract?

- ☒ Statement A only.
- ☐ Statement B only.
- ☐ Both statement A and statement B.

### Rationale

#### ✘ This Answer is Incorrect

Only Statement A is true. CDS pricing involves finding the upfront premium payment so that the CDS is a fair deal to both the CDS buyer and the CDS seller. Note that the upfront premium is computed as:

$$\text{Upfront premium} = \text{PV (Expected loss)} - \text{PV (CDS coupon payments)}$$

Statement B described the negative amount of the upfront premium, as a result, it is incorrect.

### Rationale

#### ✘ This Answer is Incorrect

Only Statement A is true. CDS pricing involves finding the upfront premium payment so that the CDS is a fair deal to both the CDS buyer and the CDS seller. Note that the upfront premium is computed as:

$$\text{Upfront premium} = \text{PV (Expected loss)} - \text{PV (CDS coupon payments)}$$

Statement B described the negative amount of the upfront premium, as a result, it is incorrect.

#### Rationale

##### This Answer is Incorrect

Only Statement A is true. CDS pricing involves finding the upfront premium payment so that the CDS is a fair deal to both the CDS buyer and the CDS seller. Note that the upfront premium is computed as:

$$\text{Upfront premium} = \text{PV (Expected loss)} - \text{PV (CDS coupon payments)}$$

Statement B described the negative amount of the upfront premium, as a result, it is incorrect.

iii.

What is the firm's credit spread if the upfront premium of the CDS is 3.2%, and the CDS buyer pays the seller?

- ☐ 0.8%
- ☐ 1.0%
- ☒ 1.8%

#### Rationale

##### This Answer is Incorrect

Credit spread is related to the CDS upfront premium, CDS duration, and CDS fixed coupon rate. It can be computed using the following formula:

$$\text{Credit spread} \approx \frac{\text{Upfront premium}}{\text{CDS duration}} + \text{CDS fixed coupon} = \frac{3.2\%}{4} + 1\% = 1.8\%$$

#### Rationale

##### This Answer is Incorrect

Credit spread is related to the CDS upfront premium, CDS duration, and CDS fixed coupon rate. It can be computed using the following formula:

$$\text{Credit spread} \approx \frac{\text{Upfront premium}}{\text{CDS duration}} + \text{CDS fixed coupon} = \frac{3.2\%}{4} + 1\% = 1.8\%$$

### Rationale

#### ✖ This Answer is Incorrect

Credit spread is related to the CDS upfront premium, CDS duration, and CDS fixed coupon rate. It can be computed using the following formula:

$$\text{Credit spread} \approx \frac{\text{Upfront premium}}{\text{CDS duration}} + \text{CDS fixed coupon} = \frac{3.2\%}{4} + 1\% = 1.8\%$$

## Question 22

L2R52TB-AC030-1512

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

A firm with multiple bond issues has triggered a credit event (the firm defaults on its bonds). What is the cheapest-to-deliver obligation for a senior CDS contract?

- ☒ A 5% coupon senior unsecured bond priced at 40% of par.
- ☐ A 4% coupon senior unsecured bond priced at 50% of par.
- ☐ A 7% subordinated unsecured bond priced at 30% of par.

### Rationale

✔ **A 5% coupon senior unsecured bond priced at 40% of par.**

Note that the CDS is a senior CDS contract. A subordinated (junior) debt does not qualify for consideration in a senior CDS payoff. Between the first two senior bonds, the first one is cheaper. CDS payoff is computed based on the cheapest-to-deliver obligation.

### Rationale

✘ **A 4% coupon senior unsecured bond priced at 50% of par.**

Note that the CDS is a senior CDS contract. A subordinated (junior) debt does not qualify for consideration in a senior CDS payoff. Between the first two senior bonds, the first one is cheaper. CDS payoff is computed based on the cheapest-to-deliver obligation.

### Rationale

✘ **A 7% subordinated unsecured bond priced at 30% of par.**

Note that the CDS is a senior CDS contract. A subordinated (junior) debt does not qualify for consideration in a senior CDS payoff. Between the first two senior bonds, the first one is cheaper. CDS payoff is computed based on the cheapest-to-deliver obligation.



### Question 23

L2DR-PQ5201-1410

LOS: LOS-10260

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

A company with several debt issues trading in the market undergoes a credit event. What is the cheapest-to-deliver obligation for a senior CDS contract?

- ☐ A subordinated unsecured bond trading at 20% of par
- ☐ A five-year senior unsecured bond trading at 30% of par
- ☒ A two-year senior unsecured bond trading at 25% of par

#### Rationale

##### **This Answer is Correct**

The cheapest-to-deliver instrument is the two-year senior unsecured bond as it is priced lower than the five-year senior unsecured bond. Bond A trades at a lower dollar price, but it is a subordinated unsecured bond, and therefore, does not qualify for delivery under a senior CDS.

### Question 24

L2R52TB-AC024-1512

LOS: LOS-10300

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

An investor sold a CDS on a high-yield company's debt with a \$5 million notional. The derivative's 10-year credit spread is 650 basis points with a duration of 8.2 years. If the credit spread narrows to 500 basis points, the seller could monetize a:

- ☒ profit of \$615,000.
- ☐ loss of \$75,000.
- ☐ breakeven profit of \$0.

#### Rationale

✔ **profit of \$615,000.**

The seller can monetize a profit if the credit spread narrows. The gain to the buyer is given by:

$$\begin{aligned}\text{Profit to buyer} &\approx \text{Spread} \times \text{DUR} \times \text{Notional} = (0.050 - 0.065)8.2 \times 5,000,000 \\ &= -615,000\end{aligned}$$

The loss to the buyer is equal to the gain from the seller, which could be realized by unwinding the position.

#### Rationale

✘ **loss of \$75,000.**

The seller can monetize a profit if the credit spread narrows. The gain to the buyer is given by:

$$\begin{aligned}\text{Profit to buyer} &\approx \text{Spread} \times \text{DUR} \times \text{Notional} = (0.050 - 0.065)8.2 \times 5,000,000 \\ &= -615,000\end{aligned}$$

The loss to the buyer is equal to the gain from the seller, which could be realized by unwinding the position.

#### Rationale

✘ **breakeven profit of \$0.**

The seller can monetize a profit if the credit spread narrows. The gain to the buyer is given by:

$$\begin{aligned}\text{Profit to buyer} &\approx \text{Spread} \times \text{DUR} \times \text{Notional} = (0.050 - 0.065)8.2 \times 5,000,000 \\ &= -615,000\end{aligned}$$

The loss to the buyer is equal to the gain from the seller, which could be realized by unwinding the position.

### Question 25

L2R52TB-AC022-1512

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

The table below shows credit default swaps for Company A. It shows the credit spreads for the three-year and 6-year CDS in January and April.

Company A CDS Spreads		
CDS Tenor	January Credit Spread	April Credit Spread
3-year	200 bps	202 bps
6-year	250 bps	275 bps

Based solely on the data in the table, an investor would *most likely* conclude that the firm's near-term credit risk is:

- ☒ stable but deteriorating in the longer term.
- ☐ deteriorating but stable in the long term.
- ☐ stable but improving in the long term.

#### Rationale

☒ **stable but deteriorating in the longer term.**

The near-term credit risk is apparent in the 3-year credit spread, which has remained relatively stable. The longer-term credit spread shown by the 6-year CDS has widened. This implies a deteriorating longer-term credit outlook.

#### Rationale

☐ **deteriorating but stable in the long term.**

The near-term credit risk is apparent in the 3-year credit spread, which has remained relatively stable. The longer-term credit spread shown by the 6-year CDS has widened. This implies a deteriorating longer-term credit outlook.

#### Rationale

☐ **stable but improving in the long term.**

The near-term credit risk is apparent in the 3-year credit spread, which has remained relatively stable. The longer-term credit spread shown by the 6-year CDS has widened. This implies a deteriorating longer-term credit outlook.

### Question 26

L2R52TB-ITEMSET-AC031-1512

LOS: LOS-10300

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: N/A

Use the following information to answer the next 2 questions:

A trader buys a 10-year CDS with \$50 million notional. The duration of the CDS is 8 years. The firm's credit spread was originally 600 bps and it narrows to 450 bps due to the firm's improved financial health.

i.

Which party will benefit from the change in the firm's credit spread?

- ☐ CDS buyer.
- ☒ CDS seller.
- ☐ Neither because the CDS term was set at CDS initiation.

#### Rationale

##### This Answer is Correct

The CDS seller can buy back the CDS at a lower price. The CDS seller benefits from narrowing of credit spreads.

#### Rationale

##### This Answer is Correct

The CDS seller can buy back the CDS at a lower price. The CDS seller benefits from narrowing of credit spreads.

#### Rationale

##### This Answer is Incorrect

The CDS seller can buy back the CDS at a lower price. The CDS seller benefits from narrowing of credit spreads.

ii.

What is the profit to the CDS buyer?

- ☐ \$6 million.
- ☐ -\$0.75 million.
- ☒ -\$6 million.

#### Rationale

**✖ This Answer is Incorrect**

The CDS buyer suffers a loss of \$6 million.

Profit to CDS buyer = Change in credit spread × CDS duration × Notional

$$= (4.5\% - 6\%) \times 8 \times \$50 \text{ million} = -\$6 \text{ million}$$

**Rationale**

**✖ This Answer is Incorrect**

The CDS buyer suffers a loss of \$6 million.

Profit to CDS buyer = Change in credit spread × CDS duration × Notional

$$= (4.5\% - 6\%) \times 8 \times \$50 \text{ million} = -\$6 \text{ million}$$

**Rationale**

**✖ This Answer is Incorrect**

The CDS buyer suffers a loss of \$6 million.

Profit to CDS buyer = Change in credit spread × CDS duration × Notional

$$= (4.5\% - 6\%) \times 8 \times \$50 \text{ million} = -\$6 \text{ million}$$

### Question 27

L200-PQ0057-1412

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

What is the most important factor to consider when entering into a credit default swap (CDS)?

- ☒ Probability of default
- ☐ Recovery rate
- ☐ Loss, given default

#### Rationale

 **This Answer is Correct**

The most important concept when it comes to CDS pricing is the probability of default.

### Question 28

L2R52TB-AC016-1512

LOS: LOS-10260

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

Which of the following CDS contracts is likely to be the *most* liquid?

- ☒ On-the-run index CDS.
- ☐ Off-the-run index CDS.
- ☐ Single-entity CDS.

#### Rationale

##### **On-the-run index CDS.**

Index CDS are typically more liquid than single-name CDS with average trading volume several times that of single-entity CDS. On-the-run, or most recently issued, securities are more liquid than older, off-the-run instruments.

#### Rationale

##### **Off-the-run index CDS.**

Index CDS are typically more liquid than single-name CDS with average trading volume several times that of single-entity CDS. On-the-run, or most recently issued, securities are more liquid than older, off-the-run instruments.

#### Rationale

##### **Single-entity CDS.**

Index CDS are typically more liquid than single-name CDS with average trading volume several times that of single-entity CDS. On-the-run, or most recently issued, securities are more liquid than older, off-the-run instruments.



### Question 29

L2R52TB-AC021-1512

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

If a company's hazard rate for default is constant along its term structure, the entity's credit curve will tend to be:

- ☐ upward sloping.
- ☒ flattened.
- ☐ downward sloping.

#### Rationale

 **upward sloping.**

A constant hazard rate will tend to flatten the credit curve. Upward sloping credit curves imply greater likelihood of default in later years, while downward sloping curves imply greater likelihood of default in the near term.

#### Rationale

 **flattened.**

A constant hazard rate will tend to flatten the credit curve. Upward sloping credit curves imply greater likelihood of default in later years, while downward sloping curves imply greater likelihood of default in the near term.

#### Rationale

 **downward sloping.**

A constant hazard rate will tend to flatten the credit curve. Upward sloping credit curves imply greater likelihood of default in later years, while downward sloping curves imply greater likelihood of default in the near term.

### Question 30

L2R52TB-AC007-1512

LOS: LOS-10260

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

If “credit default swap” is considered a misnomer, a CDS can *best* be described as:

- ☐ a plain vanilla swap.
- ☐ a forward rate agreement.
- ☒ a credit put option.

#### Rationale

##### **a plain vanilla swap.**

A CDS gives the buyer the right, but not the obligation, to surrender a defaulted bond to the seller in exchange for a payment. The buyer pays a periodic premium payment for credit protection, which is triggered by a credit event. Credit events might include default, bankruptcy proceedings, or downgrade by a credit rating agency.

#### Rationale

##### **a forward rate agreement.**

A CDS gives the buyer the right, but not the obligation, to surrender a defaulted bond to the seller in exchange for a payment. The buyer pays a periodic premium payment for credit protection, which is triggered by a credit event. Credit events might include default, bankruptcy proceedings, or downgrade by a credit rating agency.

#### Rationale

##### **a credit put option.**

A CDS gives the buyer the right, but not the obligation, to surrender a defaulted bond to the seller in exchange for a payment. The buyer pays a periodic premium payment for credit protection, which is triggered by a credit event. Credit events might include default, bankruptcy proceedings, or downgrade by a credit rating agency.

### Question 31

L2R52TB-AC025-1512

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

If a bond portfolio manager wants to increase his credit exposure without significantly increasing the portfolio's interest rate risk, he should:

- ☐ buy a CDS contract.
- ☒ sell a CDS contract.
- ☐ increase duration.

#### Rationale

 **buy a CDS contract.**

Selling a CDS will increase the portfolio's credit exposure by providing credit protection to the buyer.

#### Rationale

 **sell a CDS contract.**

Selling a CDS will increase the portfolio's credit exposure by providing credit protection to the buyer.

#### Rationale

 **increase duration.**

Selling a CDS will increase the portfolio's credit exposure by providing credit protection to the buyer.

### Question 32

L2DR-PQ5208-1410

LOS: LOS-10290

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

Consider the following statements:

**Statement 1:** In a long/short trade, the party takes a long position in one CDS and a short position in another CDS, where the two swaps are based on the same reference entity.

**Statement 2:** An investor who believes that an upward-sloping credit curve will flatten will sell protection on a long-term CDS and purchase protection on a short-term CDS.

Which of the following is *most likely*?

- ☒ Only Statement 1 is incorrect.
- ☐ Only Statement 2 is incorrect.
- ☐ Both statements are incorrect.

#### Rationale

##### This Answer is Correct

In a long/short trade, the party takes a long position in one CDS and a short position in another CDS, where the two swaps are based on **different** reference entities. Such a trade represents a bet that the credit quality of one entity will improve relative to that of the other. The investor would sell protection on the entity whose credit quality it expects to improve (go long on the CDS), and purchase protection on the entity whose credit quality it expects to deteriorate (go short on the CDS).

With an upward-sloping credit curve, a steepening (flattening) of the curve means that long-term credit risk has increased (decreased) relative to short-term credit risk. An investor who believes that long-term credit risk will increase relative to short-term credit risk (credit curve steepening) will purchase protection (or go short) on a long-term CDS and sell protection (or go long) on a short-term CDS.

### Question 33

L2DR-PQ5202-1410

LOS: LOS-10260

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

Consider the following statements:

**Statement 1:** Generally speaking, the higher the correlation of default among index constituents, the higher the cost of obtaining credit protection on the index CDS.

**Statement 2:** If the standard coupon rate on a CDS is higher than the credit spread of the reference obligation, the protection buyer will pay an upfront premium to the protection seller.

Which of the following is *most likely*?

- ☒ Only Statement 1 is correct.
- ☐ Only Statement 2 is correct.
- ☐ Both statements are incorrect.

#### Rationale

 **This Answer is Correct**

Statement 1 is correct.

If the standard rate is **too high** (to capture the credit risk), the protection **seller** will pay the buyer the upfront premium.

### Question 34

L2R52TB-ITEMSET-AC027-1512

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: N/A

Use the following information to answer the next 3 questions:

A firm with two bond issues has triggered a credit event (the firm defaults on its bonds). Trader Joe has \$20 million of Bond A and \$20 million of CDS protection. Trader Jane has \$10 million of Bond B and \$10 million of CDS protection.

Bond A: 5% coupon senior unsecured bond priced at 40% of par

Bond B: 4% coupon senior unsecured bond priced at 45% of par

i.

The recovery rate for both CDS contracts is *closest to*:

- ☒ 40.0%
- ☐ 42.5%
- ☐ 45.0%

#### Rationale

✔ **This Answer is Correct**

Due to the cheapest-to-deliver obligation, the recovery rate is 40% for both CDS contracts.

#### Rationale

✔ **This Answer is Correct**

Due to the cheapest-to-deliver obligation, the recovery rate is 40% for both CDS contracts.

#### Rationale

✔ **This Answer is Correct**

Due to the cheapest-to-deliver obligation, the recovery rate is 40% for both CDS contracts.

ii.

Which statement *best* describes Trader Joe's preference in the CDS settlement?

- ☐ Trader Joe prefers cash settlement.
- ☐ Trader Joe prefers physical delivery.
- ☒ Trader Joe is indifferent between settlements.

#### Rationale

✘ **This Answer is Incorrect**

In either case, Trader Joe gains \$12 million from the CDS because the recovery rate is 40% for Bond A and the price of the bond is \$0.40 on the dollar. He is indifferent between cash settlement and physical delivery.

#### Rationale

##### This Answer is Incorrect

In either case, Trader Joe gains \$12 million from the CDS because the recovery rate is 40% for Bond A and the price of the bond is \$0.40 on the dollar. He is indifferent between cash settlement and physical delivery.

#### Rationale

##### This Answer is Incorrect

In either case, Trader Joe gains \$12 million from the CDS because the recovery rate is 40% for Bond A and the price of the bond is \$0.40 on the dollar. He is indifferent between cash settlement and physical delivery.

iii.

Which statement *best* describes Trader Jane's preference in the CDS settlement?

- ☒ Trader Jane prefers cash settlement.
- ☐ Trader Jane prefers physical delivery.
- ☐ Trader Jane is indifferent between settlements.

#### Rationale

##### This Answer is Incorrect

Trader Jane gains \$6 million from the CDS if the CDS is cash settled. She gains \$5.5 million if the CDS settlement is physical delivery. Clearly, she prefers cash settlement for \$500,000 more than physical delivery.

#### Rationale

##### This Answer is Incorrect

Trader Jane gains \$6 million from the CDS if the CDS is cash settled. She gains \$5.5 million if the CDS settlement is physical delivery. Clearly, she prefers cash settlement for \$500,000 more than physical delivery.

#### Rationale

##### This Answer is Incorrect

Trader Jane gains \$6 million from the CDS if the CDS is cash settled. She gains \$5.5 million if the CDS settlement is physical delivery. Clearly, she prefers cash settlement for \$500,000 more than physical delivery.



### Question 35

L2DR-TB0018-1412

LOS: LOS-10260

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

The buyer of a CDS:

- ☐ Is the seller of protection on the reference obligation.
- ☐ Faces the credit risk of the reference obligation.
- ☒ Receives a payment on a credit event relating to the reference obligation.

#### Rationale

##### **This Answer is Correct**

The buyer of a CDS pays a regular premium to the seller of the CDS in return for a payment after a credit event occurrence on the reference obligation.

### Question 36

L2R52TB-AC020-1512

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

Company X has a 6 percent annual hazard rate on its debt. An insurance company sells a five-year CDS on the company with quarterly premium payments. The probability of survival through the third quarter is *closest to*:

- ☐ 98.5 percent.
- ☒ 95.6 percent.
- ☐ 94.0 percent.

#### Rationale

 **98.5 percent.**

If the hazard rate is 6% annually, the quarterly hazard rate is  $6\%/4 = 1.5\%$  each quarter. The conditional probability of survival in each quarter is  $1 - \text{Hazard rate} = 1 - 1.5\% = 98.5\%$ . The probability of surviving three consecutive quarters is the joint probability as given by  $P(\text{SQ1}) \times P(\text{SQ2}|\text{SQ1}) \times P(\text{SQ3}|\text{SQ2}) = (0.985)(0.985)(0.985) = 0.956 = 95.6\%$ .

#### Rationale

 **95.6 percent.**

If the hazard rate is 6% annually, the quarterly hazard rate is  $6\%/4 = 1.5\%$  each quarter. The conditional probability of survival in each quarter is  $1 - \text{Hazard rate} = 1 - 1.5\% = 98.5\%$ . The probability of surviving three consecutive quarters is the joint probability as given by  $P(\text{SQ1}) \times P(\text{SQ2}|\text{SQ1}) \times P(\text{SQ3}|\text{SQ2}) = (0.985)(0.985)(0.985) = 0.956 = 95.6\%$ .

#### Rationale

 **94.0 percent.**

If the hazard rate is 6% annually, the quarterly hazard rate is  $6\%/4 = 1.5\%$  each quarter. The conditional probability of survival in each quarter is  $1 - \text{Hazard rate} = 1 - 1.5\% = 98.5\%$ . The probability of surviving three consecutive quarters is the joint probability as given by  $P(\text{SQ1}) \times P(\text{SQ2}|\text{SQ1}) \times P(\text{SQ3}|\text{SQ2}) = (0.985)(0.985)(0.985) = 0.956 = 95.6\%$ .

### Question 37

L2DR-TBX107-1502

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: easy

An investor sells three-year CDS protection on a company with a hazard rate of 6% each year. What is the conditional probability of survival in the second year?

- ☒ 94.00%.
- ☐ 88.36%.
- ☐ 88.00%.

#### Rationale

 **This Answer is Correct**

Conditional probability of survival =  $1 - \text{Conditional probability of default}$

The hazard rate is the conditional probability of default in each period; hence, the conditional probability of survival in the second year is  $100\% - 6\% = 94\%$ .

### Question 38

L2R52TB-AC026-1512

LOS: LOS-10300

Lesson Reference: Lesson 3: Applications of CDS

Difficulty: medium

An investor feels that the yield on a bond and its corresponding CDS spread reflect different compensations for assuming the issuer's credit risk. Which type of trade would the investor *most likely* use to exploit this difference?

- ☐ Curve trade.
- ☐ Synthetic CDS.
- ☒ Basis trade.

#### Rationale

##### **Curve trade.**

A basis trade tries to exploit a price difference between the bond market and the CDS market. For example, if the yield on a bond reflects a credit spread of 200 basis points, and the corresponding CDS is priced at a 175 bps credit spread, the basis trade would buy the bond and buy protection with the CDS. Effectively, the yield on the bond is too high and the spread on the CDS is too low. When they correct, the bond yield will fall and/or the CDS spread will widen.

#### Rationale

##### **Synthetic CDS.**

A basis trade tries to exploit a price difference between the bond market and the CDS market. For example, if the yield on a bond reflects a credit spread of 200 basis points, and the corresponding CDS is priced at a 175 bps credit spread, the basis trade would buy the bond and buy protection with the CDS. Effectively, the yield on the bond is too high and the spread on the CDS is too low. When they correct, the bond yield will fall and/or the CDS spread will widen.

#### Rationale

##### **Basis trade.**

A basis trade tries to exploit a price difference between the bond market and the CDS market. For example, if the yield on a bond reflects a credit spread of 200 basis points, and the corresponding CDS is priced at a 175 bps credit spread, the basis trade would buy the bond and buy protection with the CDS. Effectively, the yield on the bond is too high and the spread on the CDS is too low. When they correct, the bond yield will fall and/or the CDS spread will widen.

### Question 39

L2R52TB-AC018-1512

LOS: LOS-10280

Lesson Reference: Lesson 2: Basics of Valuation and Pricing

Difficulty: medium

Which of the following *does not* constitute pricing a credit default swap?

- ☐ Determining the CDS spread.
- ☒ Setting the annual coupon rate.
- ☐ Computing the upfront premium.

#### Rationale

##### **Determining the CDS spread.**

Pricing a CDS involves determining the CDS spread. The upfront premium is the difference between the present values of the CDS spread and the standard coupons. The annual coupons are standard rates, 1% for investment grade and 5% for high-yield, which are applied to most CDS.

#### Rationale

##### **Setting the annual coupon rate.**

Pricing a CDS involves determining the CDS spread. The upfront premium is the difference between the present values of the CDS spread and the standard coupons. The annual coupons are standard rates, 1% for investment grade and 5% for high-yield, which are applied to most CDS.

#### Rationale

##### **Computing the upfront premium.**

Pricing a CDS involves determining the CDS spread. The upfront premium is the difference between the present values of the CDS spread and the standard coupons. The annual coupons are standard rates, 1% for investment grade and 5% for high-yield, which are applied to most CDS.

#### Question 40

L2DR-TB0019-1412

LOS: LOS-10270

Lesson Reference: Lesson 1: Basic Definitions and Concepts

Difficulty: medium

Which of the following scenarios is *most likely* to be classified as a succession event for a reference obligation underlying a CDS contract?

- ☐ The company that has issued the reference obligation establishes a legal procedure that forces creditors to defer their claims.
- ☐ The issuer of the reference obligation enters into an involuntary agreement whereby the seniority of the obligation is changed.
- ☒ There is a change in the corporate structure of the reference entity such that the ultimate responsibility for the debt in question becomes unclear.

#### Rationale

✓ **This Answer is Correct**

Answer A describes a bankruptcy event, while answer B describes a restructuring event.