

## Credit Derivatives Sample Exam Questions

1. A bank wishes to transfer both market risk and default risk on a bond it holds. The bank should:
  - A. Buy protection on the bond via a Credit Default Swap
  - B. Sell protection on the bond via a Credit Default Swap
  - C. Enter a Total Return Swap on the bond as the total-return-payer
  - D. Enter a Total Return Swap on the bond as the total-return-receiver
  
2. The maturity of the reference obligation in a Total Return Swap is exactly 5 years. The maturity of the Total Return Swap on that reference obligation must be:
  - A. Less than or equal to 5 years
  - B. Exactly 5 years
  - C. Greater than or equal to 5 years
  - D. None of the above
  
3. In a Total Return Swap, \_\_\_\_\_ profit(s) in the event that the value of the reference obligation appreciates between the inception of the Total Return Swap and its maturity.
  - A. The total-return-payer
  - B. The total-return-receiver
  - C. Both the total-return-payer and the total-return-receiver
  - D. Neither the total-return-payer nor the total-return-receiver
  
4. In a physically-settled Total Return Swap, if the reference obligation defaults, the total-return-receiver pays the total-return-payer \_\_\_\_\_ in exchange for receiving \_\_\_\_\_.
  - A. The total return on the reference asset; Libor + x bps, where x is defined in the inception of the contract
  - B. The market value of the reference obligation at default; The par value of the reference obligation
  - C. The market value of the reference obligation at default; The defaulted instrument
  - D. The par value of the reference obligation; The defaulted instrument

5. Bank A has a funding cost of  $L + 10$  basis points, where  $L$  is Libor, Bank B has a funding cost of  $L + 80$  basis points. There is a reference obligation currently yielding  $L + 140$  basis points. In a "Funding Cost Arbitrage", bank \_\_\_\_\_ buys the reference obligation,. Then, bank A and bank B enter a Total Return Swap, in which bank \_\_\_\_\_ is the total-return-payer and bank \_\_\_\_\_ is the total-return-receiver.

- A. A;A;B
- B. A;B;A
- C. B;A;B
- D. B;B;A

6. Bank A has a funding cost of  $L + 10$  basis points, where  $L$  is Libor. Bank B has funding cost of  $L + 80$  basis points. There is a reference obligation currently yielding  $L + 140$  basis points. In a "Funding Cost Arbitrage", bank A pays B the total return on the reference obligation in exchange for a payment of  $L + x$  basis points by bank B, when:

- A. The value of  $x$  must lie between 10 and 60
- B. The value of  $x$  must lie between 10 and 80
- C. The value of  $x$  must lie between 60 and 140
- D. The value of  $x$  must lie between 80 and 140

7. Bank X has a funding cost of  $L + 60$  basis points, where  $L$  is Libor. Bank X is interested in buying a reference obligation currently yielding  $L + 150$  basis points. Bank X is considering two alternatives:

- (I) Buy the reference obligation outright
- (II) Enter a Total Return Swap with bank Y, in which bank Y buys the asset and pays bank X the total return on the reference obligation in exchange for payment of  $L + 40$  basis points.

Bank X should choose the \_\_\_\_\_ alternative, as it provides Savings of \_\_\_\_\_ over the other alternative.

- A. First, 20 bps
- B. First, 40 bps
- C. Second, 20 bps
- D. Second, 40 bps

8. A bank wishes to transfer the default risk on a bond it holds, while retaining the market risk. The bank should
- A. Buy protection on the bond via a Credit Default Swap
  - B. Sell protection on the bond via a Credit Default Swap
  - C. Enter a Total Return Swap on the bond as the total-return-payer
  - D. Enter a Total Return Swap on the bond as the total-return-receiver
9. In a physically settled Credit Default Swap written on a reference bond, upon a credit event, the protection \_\_\_\_\_ must deliver to the protection \_\_\_\_\_ a bond that has the same issuer as the reference bond and that \_\_\_\_\_
- A. Seller, buyer, ranks pari passu with the reference bond
  - B. Seller, buyer, has the same maturity as the reference bond
  - C. Buyer, seller, ranks pari passu with the reference bond
  - D. Buyer, seller, has the same maturity as the reference bond
10. The debt of a firm includes the following bonds:
- (I) a junior bond that matures 5 years from today
  - (II) a junior bond that matures 10 years from today
  - (III) a senior bond that matures 20 years from today

The maturity of a Credit Default Swap written today with Bond (I) as the reference obligated must be

- A. 5 years or 10 years
  - B. 5 years, 10 years, or 20 years
  - C. Less than or equal to 5 years
  - D. Less than or equal to 10 years
11. The CDS spread is \_\_\_\_\_ the yield spread (i.e., spread over the risk-free rate) of the underlying bond
- A. Always the same as
  - B. Closely related to
  - C. Always higher than
  - D. Not at all related to

12. Which of the following is likely to cause an increase in the CDS spread of a firm:

- (I) Market views regarding the credit worthiness of a firm become more positive
- (II) Market views regarding the credit worthiness of a firm become more negative
- (III) The firm issues convertible bonds, and many investors use a strategy in which they buy the convertibles and buy CDS to hedge against the default of the firm

- A. (I)
- B. (II)
- C. (I) and (III)
- D. (II) and (III)

13. In a typical Credit Linked Note structure, a special-purpose vehicle (SPV) issues notes tied to the credit performance of a reference obligation. Buyers of these notes are \_\_\_\_\_ protection on the reference obligation and are \_\_\_\_\_ the risk of the SPV mismanaging the collateral

- A. Buying, Taking on
- B. Buying; Not taking on
- C. Selling; Taking on
- D. Selling; Not taking on

14. In a typical Credit Linked Note structure, a special-purpose vehicle issues notes tied to the credit performance of a reference obligation, while simultaneously selling protection via CDS to counterparty. If the reference obligation defaults, \_\_\_\_\_ delivers the reference obligation to \_\_\_\_\_ in exchange for the par value of the reference obligation.

- A. The SPV; The investors in the notes issued by the SPV
- B. The investors in the notes issued by the SPV; The SPV
- C. The CDS counterparty; The SPV
- D. The SPV; The CDS counterparty

15. A first-to-default (FTD) basket pays off when the first default occurs in the given basket of "names". The spread on a first-to-default basket is:

- A. At least the narrowest credit spread of all the names in the basket and at most the widest credit spread of all the names in the basket.
- B. Equal to the average credit spread across all the names in the basket.
- C. At least the widest credit spread of all the names in the basket and at most the sum of the credit spreads across all the names in the basket.

D. Equal to the widest credit spread of all the names in the basket.

16. Compare the following alternatives:

(a) Buying protection on a first-to-default basket

(b) Buying protection via a Credit Default Swap on the riskiest name in the basket (that is, the name with the widest CDS spread)

The cost of alternative (a) is \_\_\_\_\_ the cost of alternatives (b)

- a. Less than or equal to
- b. The same as
- c. Greater than or equal to
- d. Which alternative is more expensive depends on the correlations among the names in the basket

17. Today, investor A buys protection on a first-to-default basket., while investor B buys protection via Credit Default Swaps on each individual name in that basket. All contracts have the same maturity.

Suppose that at maturity, it turns out that no name has defaulted, then,

- A. Both investors lost money on their strategy, but investor A lost at least as much as B
- B. Both investors lost money on their strategy, but investor B lost at least as much as A
- C. Both investors made money on their strategy, but investor A gained at least as much as B
- D. Both investors made money on their strategy, but investor B gained at least as much as A

18. Today, investor A buys protection on a first-to-default basket, while investor B buys protection via Credit Default Swaps on each individual name in that basket. All contracts have the same maturity.

Suppose that at maturity, it turns out that only one name out of the basket has defaulted then,

- A. Investor A's strategy has been at least as profitable as that of investor B
- B. Investor B's strategy has been at least as profitable as that of investor A
- C. Both strategies have been equally profitable
- D. The answer depends on the spread of the defaulted name

19. Suppose that an investor has purchased \$250 million of protection on the iTraxx Europe which is an equally-weighted index composed of 125 European investment-grade names. If one of the names in the index were to default, the protection seller compensates the buyer for the loss-given-default on that name on a notional of \_\_\_\_\_, the index continue to trade on \_\_\_\_\_ names; and all subsequent premium payments are based on a notional of \_\_\_\_\_

- A. 1 million; 125; 250 million
- B. 2 million; 125; 248 million
- C. 2 million; 124; 250 million
- D. 2 million; 124; 248 million

## Sample Exam Question Answer Sheet

1. A total return swap transfers all risk, both market risk and credit risk, from the total return payer to the total return receiver. **Answer = C**
2. The maturity of the Total Return Swap need not match the maturity of the underlying reference obligation. Naturally, since the Total Return Swap is a derivative on the reference obligation, it cannot have a maturity greater than that of the reference obligation.  
**Answer = A**
3. The total-return-payer transfers cashflows from the reference obligation (e.g. coupons) and the change of value of the reference obligation to the total-return-receiver. If the value of the reference obligation appreciates, the total-return-receiver profits. **Answer = B**
4. In a physically-settled total return swap, if the reference obligation defaults, the total return receiver pays the total return payer the par value of the reference obligation in exchange for receiving the defaulted instrument. In other words, upon default, the total return receiver takes the loss-given-default on the reference obligation. **Answer = D**
5. In a Funding Cost Arbitrage, the "higher quality" bank (the bank with the lower funding costs) purchases the reference obligation and enters into a Total Return Swap with the "lower quality" bank, in which the "high quality" bank is the total return payer. **Answer = A**
6. Since the funding costs of bank A is  $L+10$ , bank A will be willing to enter a Total Return Swap only if it receives more than  $L+10$ . So  $x$  must be greater than 10. Since bank B has funding costs of  $L+80$ , it would be willing to enter the Total Return Swap only if it pays less than  $L+80$ , otherwise bank B would buy the asset outright. So  $x$  must also be less than 80. **Answer = B**
7. Buying the reference obligation outright, the funding costs of Bank X are  $L+60$ . If bank X enters a Total Return Swap as the total-return-receiver, it will only have to pay  $L+40$ , leading to savings of 20 bps. **Answer = C**
8. In a CDS contract, the protection buyer makes a periodic payment to the protection seller in exchange for a contingent payment following a credit event. Thus, the CDS contract transfers the credit risk (but not the market risk) from the protection buyer to the protection seller. **Answer = A**

9. In a physically-settled Credit Default Swap written on a reference bond, upon a credit event, the protection buyer delivers to the protection seller any bond issued by the same issuer as the reference bond and that ranks *pari passu* with the reference bond. **Answer = C**
10. The maturity of a credit default swap is anything less than or equal to the maturity of the reference obligation. In this question, the reference obligation has a maturity of 5 years, and therefore the maturity of the CDS should be less than or equal to 5 years. **Answer = C.**
11. Selling protection via a CDS is akin to holding a fully financed position in the underlying bond. If there is no default on the underlying, the bond holder (or the protection seller) continues to receive cash flows. If a default occurs, the bond holder (or the protection seller) incurs the loss in the bond value on account of default. Thus, there is a close relationship between the CDS premium and the yield spread on the underlying bond. However, there are several factors such as liquidity that prevent that relationship from being exact. **Answer = B**
12. As the probability of default of a firm increases, the protection seller is more likely to incur a loss and so demands a higher compensation. Thus, as market views regarding the credit worthiness of a firm become more negative, the CDS spread increases. In addition, since buying protection is easier than shorting a bond, an increase in the demand to hedge against the default of the firm leads to an increase in the CDS premium (see the Fiat example in the lecture notes). **Answer = D**
13. In a typical credit-linked note structure, the protection buyer issues notes tied to the credit performance of a reference obligation via a special-purpose vehicle (SPV). The investors in those notes are effectively selling protection: if there is a default on the reference obligation, the collateral is liquidated and the claims of the protection buyers are satisfied before the investors receive anything. This means the investors in the CLN notes are taking on the risk of the SPV mismanaging the collateral. **Answer = C**
14. In a typical credit-linked note structure, a special-purpose vehicle issues notes tied to the credit performance of a reference obligation, while simultaneously selling protection via CDS to the counterparty. If the reference obligation defaults, the CDS counterparty delivers the obligation to the SPV in return for par. **Answer = C**

15. The premium of the FTD basket must be lower than the sum of the premia on the individual names and must be higher than the premium on each and every name in the basket (including the one with the highest premium). **Answer = C**
16. See question 16. **Answer = C**
17. Note that investor B paid more than investor A to purchase protection (see question 16). Since no name had defaulted, both investors did not receive any payment from the protection seller, so both investors lost money on their strategies. **Answer = B**
18. Since only a single name had defaulted, both investors received the same compensation for the default of that name – investor A received it because that name was the first to default, and investor B received it because she purchased protection on all names. Still, investor B paid more than investor A to purchase protection (see question 16). **Answer = A**
19. In case of default, the protection seller compensates the buyer for a  $\frac{1}{125}$  of the notional value (as this is an equally-weighted index). After the default, 124 names are left in the index, and all subsequent premium payments are reduced proportionately from 250 million to 248 million to reflect the altered portfolio. **Answer = D**