1. A company can invest funds for five years at LIBOR minus 30 basis points. The five-year swap rate is 3%. What fixed rate of interest can the company earn by using the swap?
   A. 2.4%
   B. 2.7%
   C. 3.0%
   D. 3.3%

   Answer: B

   When the company invests at LIBOR minus 0.3% and then enters into a swap where it pays LIBOR and receives 3% it earns 2.7% per annum. Note that it is the bid rate that will apply to the swap.

2. Which of the following is true?
   A. Principals are not usually exchanged in a currency swap
   B. The principal amounts usually flow in the opposite direction to interest payments at the beginning of a currency swap and in the same direction as interest payments at the end of the swap.
   C. The principal amounts usually flow in the same direction as interest payments at the beginning of a currency swap and in the opposite direction to interest payments at the end of the swap.
   D. Principals are not usually specified in a currency swap

   Answer: B

   The correct answer is B. There are two principals in a currency swap, one for each currency. They flow in the opposite direction to the corresponding interest payments at the beginning of the life of the swap and in the same direction as the corresponding interest payments at the end of the life of the swap.

3. Company X and Company Y have been offered the following rates

	Fixed Rate	Floating Rate
Company X	3.5%	3-month LIBOR plus 10bp
Company Y	4.5%	3-month LIBOR plus 30 bp

   Suppose that Company X borrows fixed and company Y borrows floating. If they enter into a swap with each other where the apparent benefits are shared equally, what is company X's effective borrowing rate?

A. 3-month LIBOR−30bp
B. 3.1%
C. 3-month LIBOR−10bp
D. 3.3%

Answer: A

The interest rate differential between the fixed rates is 100 basis points. The interest rate differential between the floating rates is 20 basis points. The difference between the interest rates differentials is 100 – 20 = 80 basis points. This is the total apparent gain from the swap to the two sides. Since the benefits are shared equally company X should be able to borrow at 40 bp less than it is currently offered in the floating rate market, i.e., at LIBOR minus 30 bp.

4. Which of the following describes the five-year swap rate?
    A. The fixed rate of interest which a swap market maker is prepared to pay in exchange for LIBOR on a 5-year swap
    B. The fixed rate of interest which a swap market maker is prepared to receive in exchange for LIBOR on a 5-year swap
    C. The average of A and B
    D. The higher of A and B

    Answer: C

The swap rate is the average of the bid swap rate (i.e. A) and the offer swap rate (i.e. B)

5. Which of the following is a use of a currency swap?
    A. To exchange an investment in one currency for an investment in another currency
    B. To exchange borrowing in one currency for borrowings in another currency
    C. To take advantage situations where the tax rates in two countries are different
    D. All of the above

    Answer: D

A currency swap can be used for any of A, B, and C.

6. The reference entity in a credit default swap is
    A. The buyer of protection
    B. The seller of protection
    C. The company or country whose default is being insured against
    D. None of the above

    Answer: C

In a credit default swap the buyer of protection pays a CDS spread to the seller of protection and the protection seller has to make a payoff if there is a default by the reference entity.

7. Which of the following describes an interest rate swap?
    A. The exchange of a fixed rate bond for a floating rate bond
    B. A portfolio of forward rate agreements
    C. An agreement to exchange interest at a fixed rate for interest at a floating rate
    D. All of the above

    Answer: D

    The answer is D because all of A, B, and C are true for an interest rate swap.

8. Which of the following is true for an interest rate swap?
    A. A swap is usually worth close to zero when it is first negotiated
    B. Each forward rate agreement underlying a swap is worth close to zero when the swap is first entered into
    C. Comparative advantage is a valid reason for entering into the swap
    D. None of the above

    Answer: A

    A swap is worth close to zero at the beginning of its life. (It may not be worth exactly zero because of the impact of the market maker's bid-offer spread.) It is not true that each of the forward contracts underlying the swap are worth zero. (The sum of the value of the forward contracts is zero, but this does not mean that each one is worth zero.) The remaining floating payments on a swap are worth the notional principal immediately after a swap payment date, but this is not necessarily true for the remaining fixed payments.

9. Which of the following is true for the party paying fixed in a newly negotiated interest rate swap when the yield curve is upward sloping?
    A. The early forward contracts underlying the swap have a positive value and the later ones have a negative value
    B. The early forward contracts underlying the swap have a negative value and the later ones have a positive value
    C. The swap is designed so that all forward rates have zero value
    D. Sometimes A is true and sometimes B is true

    Answer: B

    The forward contracts are contracts where fixed is paid and floating is received. They can be valued assuming that forward rates are realized.

Forward rates increase with maturity. This means that the value of the forward contracts increase with maturity. The total value of the forward contracts is zero. This means that the value of the early contracts is negative and the value of the later contracts is positive.

10. A bank enters into a 3-year swap with company X where it pays LIBOR and receives 3.00%. It enters into an offsetting swap with company Y where is receives LIBOR and pays 2.95%. Which of the following is true:
    A. If company X defaults, the swap with company Y is null and void
    B. If company X defaults, the bank will be able to replace company X at no cost
    C. If company X defaults, the swap with company Y continues
    D. The bank's bid-offer spread is 0.5 basis points
    Answer: C

The bank`s bid-offer spread is 5 basis points not 0.5 basis points. The bank has quite separate transactions with X and Y. If one defaults, it still has to honor the swap with the other.

11. When LIBOR is used as the discount rate:
    A. The value of a swap is worth zero immediately after a payment date
    B. The value of a swap is worth zero immediately before a payment date
    C. The value of the floating rate bond underlying a swap is worth par immediately after a payment date
    D. The value of the floating rate bond underlying a swap is worth par immediately before a payment date

    Answer: C

The value of the floating rate bond underlying an interest rate swap is worth par immediately after a swap payment date. This result is used when the swap is valued as the difference between two bonds.

12. A company enters into an interest rate swap where it is paying fixed and receiving LIBOR. When interest rates increase, which of the following is true?
    A. The value of the swap to the company increases
    B. The value of the swap to the company decreases
    C. The value of the swap can either increase or decrease
    D. The value of the swap does not change providing the swap rate remains the same

    Answer: A

It is receiving the floating rate. When interest rates increase the floating rate can be expected to be higher and so the swap becomes more valuable. The answer is therefore A.

13. A floating for floating currency swap is equivalent to
    A. Two interest rate swaps, one in each currency
    B. A fixed-for-fixed currency swap and one interest rate swap
    C. A fixed-for-fixed currency swap and two interest rate swaps, one in each currency
    D. None of the above

    Answer: C

    A floating-for-floating currency swap where the currency paid is X and the currency received is Y is equivalent to (a) a fixed-for-fixed currency swap where, say, 5% in currency X is paid and say, say, 4% in currency Y is received, (b) a regular interest rate swap where 5% in currency X is received and floating in currency X is paid and (c) a regular interest rate swap where 4% in currency Y is paid and floating in currency Y is received.

14. A floating-for-fixed currency swap is equivalent to
    A. Two interest rate swaps, one in each currency
    B. A fixed-for-fixed currency swap and one interest rate swap
    C. A fixed-for-fixed currency swap and two interest rate swaps, one in each currency
    D. None of the above

    Answer: B

    A floating-for-fixed currency swap where the floating rate is paid in currency X and the fixed rate is received in currency Y is equivalent to (a) a fixed-for-fixed currency swap where, say, 5% in currency X is paid and the fixed rate in currency Y is received, (b) a regular interest rate swap where 5% in currency X is received and floating in currency X is paid.

15. An interest rate swap has three years of remaining life. Payments are exchanged annually. Interest at 3% is paid and 12-month LIBOR is received. A exchange of payments has just taken place. The one-year, two-year and three-year LIBOR/swap zero rates are 2%, 3% and 4%. All rates an annually compounded. What is the value of the swap as a percentage of the principal when LIBOR discounting is used.
    A. 0.00
    B. 2.66
    C. 2.06
    D. 1.06

    Answer: B

    Suppose the principal 100. The value of the floating rate bond underlying the swap is 100. The value of the fixed rate bond is $3/1.02+3/(1.03)^2+103/(1.04)^3=97.34$. The value of the swap is therefore $100-97.34 = 2.66$ or 2.66% of the principal

16. A semi-annual pay interest rate swap where the fixed rate is 5.00% (with semi-annual compounding) has a remaining life of nine months. The six-month LIBOR rate observed three months ago was 4.85% with semi-annual compounding. Today's three and nine month LIBOR rates are 5.3% and 5.8% (continuously compounded) respectively. From this it can be calculated that the forward LIBOR rate for the period between three- and nine-months is 6.14% with semi-annual compounding. If the swap has a principal value of $15,000,000, what is the value of the swap to the party receiving a fixed rate of interest?
    A. $74,250
    B. −$70,760
    C. −$11,250
    D. $103,790

    Answer: B

    The forward rates for the floating payment at time 9 months is 6.14%. The swap can be valued assuming that the fixed payments are 2.5% of principal at 3 months and 9 months and that the floating payments are 2.425% and 3.07% of the principal at 3 months and 9 months. The value of the swap to the party receiving fixed is therefore
    $1,000,000(0.025-0.02425)e^{-0.053\times0.25}+1,000,000(0.025-0.0307)e^{-0.058\times0.75} = -$70,760

17. Which of the following describes the way a LIBOR-in-arrears swap differs from a plain vanilla interest rate swap?
    A. Interest is paid at the beginning of the accrual period in a LIBOR-in-arrears swap
    B. Interest is paid at the end of the accrual period in a LIBOR-in-arrears swap
    C. No floating interest is paid until the end of the life of the swap in a LIBOR-in-arrears swap, but fixed payments are made throughout the life of the swap
    D. Neither floating nor fixed payments are made until the end of the life of the swap

    Answer: A

    In a LIBOR-in-arrears swap interest is observed for an accrual period and paid at the beginning of that accrual period (not at the end of the accrual period which is normal)

18. In a fixed-for-fixed currency swap, 3% on a US dollar principal of $150 million is received and 4% on a British pound principal of 100 million pounds is paid. The current exchange rate is 1.55 dollar per pound. Interest rates in both countries for all maturities are currently 5% (continuously compounded). Payments are exchanged every year. The swap has 2.5 years left in its life. What is the value of the swap?

A. −$7.15
B. −$8.15
C. −$9.15
D. −$10.15

Answer: C

The value of the British pound bond underlying the swap is in millions of pounds
$4e^{-0.05\times0.5}+4e^{-0.05\times1.5}+104e^{-0.05\times2.5} = 99.39$
The value of the U.S. dollar bond is in millions of dollars
$4.5e^{-0.05\times0.5}+4.5e^{-0.05\times1.5}+154.5e^{-0.05\times2.5} = 144.91$
The value of the swap is 144.91 – 99.39×1.55 = –9.15

19. Which of the following is a typical bid-offer spread on the swap rate for a plain vanilla interest rate swap?
    A. 3 basis points
    B. 8 basis points
    C. 13 basis points
    D. 18 basis points

Answer: A

3 basis points is a typical spread between the bid and the offer on a plain vanilla interest rate swap.

20. Which of the following describes the five-year swap rate?
    A. The rate on a five-year loan to a AA-rated company
    B. The rate on a five-year loan to an A-rated company
    C. The rate that can be earned over five years from a series of short-term loans to AA-rated companies
    D. The rate that can be earned over five years from a series of short-term loans to A-rated companies

Answer: C

By considering the effect of making a series of LIBOR loans to AA-rated companies and entering into a swap we see that the swap rate corresponds to the risk in a series of short-term loans.