

Derivatives

1)	Which of the following statements least accurately describes the characteristics of option contracts? A) Only the long side to an over-the-counter option is exposed to counterparty risk. B) A short put is a right to deliver the underlying asset and receive a predetermined price for it. C) A long put position implies a bearish outlook for the price of the underlying asset. D) A long call is a right to buy the underlying asset at a predetermined price.
	.
2)	Which of the following statements is false with respect to the term margin and how it's used in the securities market and the futures market? A) In the futures market, margin involves no borrowing whatsoever. B) In both the securities and the futures market, the term margin implies that the return to the investor will be more volatile than the return generated by the underlying asset. C) In the futures market, margin is expressed as a percentage of the cost of the underlying asset. D) In the securities market, margin implies that the investor has financed a part of the cost of acquiring an asset by borrowing.
	.
3)	Which of the following statements is (are) true with respect to option contracts? I. The buyer of a put must deliver the underlying asset if the buyer of the call decides to exercise. II. Both the call and put writers' positions may be deemed as contingent liabilities. III. If the call is out of the money, the American option may be worth less than its comparable European option. IV. A European option may only be exercised at the maturity date. A) II and IV only B) I, III and IV only C) I and IV only D) I and II only
	.
4)	Which of the following is not a feature of derivatives securities? A) Derivatives have a high degree of built-in leverage. B) They are almost always standardized in terms of maturity and notional principal. C) There is generally another security or asset from which the derivative derives its value. D) Not all forms of derivatives are regulated.
	.
5)	Which of the following statements least accurately describes the features of forward rate agreements (FRAs)? A) FRAs are always cash settled. B) FRAs are settled on the day the FRA expires and not on the day of the underlying deposit's maturity. C) The underlying asset for an FRA is the eurodollar time deposit. D) The long FRA position benefits if the LIBOR on the expiry date is higher than the rate specified in the contract.
	.

6)	Which of the following statements is false with respect to the differences between being long or short in a forward contract? A) The long position gains if the price of the underlying asset appreciates dramatically. B) Irrespective of being long or short, there is no exchange of money at the initiation of the forward contract. C) The short position is the one that is exposed to counterparty (or default) risk. D) Throughout the term of the contract, the settlement price is rarely changed.
7)	An investor had originally purchased shares of XYZ for \$27. Subsequently, she writes a call for a premium of \$1.50. If, during the expiry date, XYZ shares are trading at \$32 and the investor still manages to break even on her strategy, what must have been the exercise price on the calls involved? A) \$25.50 B) \$33.50 C) \$28.50 D) \$30.50
8)	Which of the following statements is false with respect to the minimum and maximum values for an option? A) Whether it be an American or European call, the value of the option will increase as the exercise price decreases. B) Whether it be an American or European call, the value of the option will increase as the time to maturity increases. C) Whether it be an American or European put, the value of the option will increase as the time to maturity increases. D) Whether it be an American or European put, the value of the option will increase as the exercise price increases.
9)	Which of the following statements is (are) true with respect to options trading? I. An at-the-money option will have a higher premium than an in-the-money option. II. American options have a longer expiry date than European options. III. Only options sellers must post margins. IV. A short put position may be closed out early by longing a call option with the exact same terms as the put option. A) III and IV only B) I, II and IV only C) III only D) II and IV only
10)	An investors buys an 1 x 4 forward rate agreement (FRA) with a fixed rate of 4.7%. The notional principal of the contract is \$10 million. If, in one month's time, the three-month LIBOR is 5.2% and the five-month LIBOR is 5.7%, which of the following transactions would take place in one month's time? A) The FRA buyer will pay \$25,000. B) The FRA buyer will receive \$12,500. C) The FRA buyer will receive \$25,000. D) The FRA buyer will receive \$12,340.

11)	Which of the following statements is (are) true with respect to valuing option contracts? I. The time value of both a call and a put will decrease as the contracts near expiration. II. For a call to be at the money, its intrinsic value must be greater than zero. III. Due to the efficiency of the options markets, the actual price of the option is usually equal to its intrinsic value. IV. For a put contract to be out of the money, the actual price of the underlying asset must be greater than the strike price of the option. A) III only B) I, II and III only C) II, III and IV only D) I and IV only
	.
12)	Your research department has just made a sound presentation arguing that the equity markets are due for a severe correction in the short term. Which of the following strategies would be most suitable for safeguarding the portfolio that you manage? A) Long futures contracts on an equity index B) Construct a bull-call spread C) Buy call options on an equity index D) Buy put options on an equity index
	.
13)	Which of the following are not features of a futures contract? A) Initial margin deposit is required irrespective of whether you long or short a contract. B) A long position may be offset by shorting the exact same contract. C) Daily settlement D) Only the contract size and the futures price is set by the market participants
	.
14)	Which of the following statements are true with respect to the treatment of nonrecurring items and discontinued operations? I. Unlike U.S. GAAP, IAS GAAP does not require the separate reporting of regular earnings, earnings from discontinued operations and extraordinary items. II. Both IAS GAAP and U.S. GAAP have the same requirements for classifying a transaction as an extraordinary item. III. Losses from discontinued operations must be reported under U.S. GAAP when it can be reasonably estimated, whereas IAS GAAP requires that these losses be reported only when they are realized. IV. According to IAS GAAP, the correction of an error may only be accounted for by restating prior period statements. A) I and III only B) III and IV only C) I and IV only D) II, III and IV only
	.
15)	ABC Company just entered into an interest rate swap agreement with another company. ABC has agreed to make semi-annual payments at a fixed rate of 7.6% per year. The counterparty, on the other hand, has agreed to make variable payments at a rate of LIBOR + 1. With a notional principal of \$15 million, which of the following statements would hold true for the first payment in six months if LIBOR were 6.1% today and 6.9% in six months? A) ABC would receive a net payment of \$37,500. B) ABC would receive a net payment of \$22,500. C) ABC would have to make a net payment of \$22,500. D) ABC would have to make a net payment of \$37,500
	.

16)	Which of the following statements is false with respect to derivative securities that involve a contingent claim? (a) Sellers of options do not have any control with respect to the exercise of the option. (b) When selling a call, any claim is contingent upon the buyer exercising the call. (c) When buying a call, an investor must pay the premium. (d) Buying a put exposes the investor to a contingent claim.
17)	Which of the following events will lead to an increase in the value of a call option? (a) A declining time to maturity (b) Declining price of the underlying asset (c) An increase in the discount rate (d) An increase in the exercise price
18)	Which of the following statements least accurately describes the features of the eurodollar time deposit market? (a) A dollar-denominated time deposit with a bank in Japan is considered as a eurodollar deposit. (b) With eurodollar time deposits, all the interest is accumulated and paid one time at the maturity date of the deposit. (c) EURIBOR is the rate quoted on euro-denominated deposits. (d) LIBOR is the rate that a London bank is willing to pay on deposited funds.
19)	Which of the following statements is (are) true with respect to the mechanisms involved in futures trading? I. A daily price limit is the amount by which the futures price is allowed to move from the opening of the trading session to the close of trading in the same day. II. When the futures contract is said to be locked limit, it is an indication that trading has ceased. III. Scalpers usually generate a higher frequency of futures trading than would day traders. IV. If a delivery option is chosen, the invoice price for the underlying asset will always be equal to the agreed upon futures price times the contract size. (a) I and IV only (b) II and III only (c) I and II only (d) I, III and IV only
20)	) Two parties enter into a three-year interest rate swap, which involves the exchange of LIBOR+1 for a fixed rate of 12% on a \$100 million notional amount. The LIBOR rate today is 11%, but is expected to increase to 15% in one year and fall back down to 8% in the following year. Which of the following statements accurately depicts the flow of net cash flows between the two counter-parties? (a) The fixed rate payer would receive a payment of \$4 million at the end of year two, while the variable rate payer would receive \$3 million at the end of year three. (b) The fixed rate payer will have to pay \$4 million at the end of the second year and \$3 million at the end of the third year. (c) The fixed rate payer will have to pay \$1 million at the end of the first year. (d) The variable rate payer would receive a payment of \$4 million at the end of year two, while the fixed rate payer would receive \$3 million at the end of year three.

Derivatives

1)	A	B	C	D	11)	A	B	C	D
2)	A	B	C	D	12)	A	B	C	D
3)	A	B	C	D	13)	A	B	C	D
4)	A	B	C	D	14)	A	B	C	D
5)	A	B	C	D	15)	A	B	C	D
6)	A	B	C	D	16)	A	B	C	D
7)	A	B	C	D	17)	A	B	C	D
8)	A	B	C	D	18)	A	B	C	D
9)	A	B	C	D	19)	A	B	C	D
10)	A	B	C	D	20)	A	B	C	D

Answers

1) B	11) D
2) C	12) D
3) A	13) D
4) B	14) A
5) C	15) D
6) C	16) D
7) A	17) C
8) C	18) D
9) C	19) A
10) D	20) B

Explanations

1)	The Right Answer is B . Explanation: A long put is a right to deliver the underlying asset and receive a predetermined price for it. A short position in any option, call or put, carries no rights, only a contingent obligation.
2)	The Right Answer is C . Explanation: In the futures market, margin is expressed as the amount of dollars per contract.
3)	The Right Answer is A . Explanation: Choice I is incorrect because the buyer of the put has a right, not an obligation, to deliver the underlying asset in return for some pre-determined price to be paid by the seller of the put. The call buyer has nothing to do with the put buyer or seller. III is incorrect because an American option will always be worth as much as a European option. This is strictly due to the fact that an American option may be exercised at any time before maturity, whereas a European option may only be exercised at the maturity date.
4)	The Right Answer is B . Explanation: Derivatives may be classified as exchange traded, which are standardized. They are also traded over-the-counter, in which case the contracts are unique for each case. In reality, the over-the-counter market is even bigger than the exchange-traded market.
5)	The Right Answer is C . Explanation: The underlying asset for an FRA is the rate on the eurodollar time deposit that exists when the FRA expires.
6)	The Right Answer is C . Explanation: Default risk is faced by the party for whom the forward contract is more valuable at any given point in time. Then the risk becomes the other party's inability to meet its side of the obligation.
7)	The Right Answer is A . Explanation:

	Cost of acquiring the shares \$27/share Less: Proceeds from call premium 1.5/share Net Cost 25.50/share Therefore, to breakeven on the expiry date, the investor must receive an amount equal to what she paid (net) for each share. Thus, the amount received, which in this case is the strike price, is \$25.50.
	.
8)	The Right Answer is C. Explanation: For a European put, the value will not always increase as the term of the contract becomes longer. That's because even if the underlying asset becomes worthless, the put-holder cannot collect the exercise price until expiry. Therefore, the longer he or she has to wait, the less valuable the contract may become. Note that all option choices are referring to the option positions in general. Very in- or out-of-the-money options are not considered.
	.
9)	The Right Answer is C. Explanation: Choice I is incorrect because an at-the-money option will have a lower intrinsic value than an in-the-money option. Consequently, the premium of an at-the-money option will be worth less. II is also incorrect; the only difference between the two kinds of options is that an American option may be exercised at any time before maturity, whereas a European option may only be exercised on the maturity date. IV is incorrect because a short put position may only be closed out early by buying a put option with the exact same terms as the original put option. You can't close out a put with a call, and you can't close out a call with a put.
	.
10)	The Right Answer is D. Explanation: Notes: 1. The relevant LIBOR rate in 1 months time is the 3-month rate. (The 4 in 1 x 4 refers to the total length of this set up). 2. Since the 3-month LIBOR rate was higher than the pre-set rate of 4.7%, the buyer of the FRA will receive a payment. Calculations: 1. The payment received in 4 months time: = (Notional Amount) x (Actual Rate - Preset Rate) x (Term ÷ 360) = (10,000,000) x (0.052 - 0.047) x (90 ÷ 360) = 12,500 2. Payment may be settled at the expiring date of the FRA (in one month) by finding the present value of the payment expected in 4 months. (Note: use the Actual LIBOR rate as the discount rate). Payment in 1 month = $12,500 \div [1 + (0.052)(90 \div 360)] = 12,340$
	.
11)	The Right Answer is D. Explanation: Choice II is incorrect because for a call to be at the money, its intrinsic value must also be equal to zero. III is incorrect because even though the option markets are extremely efficient, the actual price of the option contracts is equal to the sum of the option's intrinsic value and its time value. Only on the expiration date will the actual price of the option be equal to its intrinsic value
	.

Therefore, to breakeven on the expiry date, the investor must receive an amount equal to what she paid (net) for each share.

Thus, the amount received, which in this case is the strike price, is \$25.50.

8)	The Right Answer is C.
----	------------------------

Explanation: For a European put, the value will not always increase as the term of the contract becomes longer. That's because even if the underlying asset becomes worthless, the put-holder cannot collect the exercise price until expiry. Therefore, the longer he or she has to wait, the less valuable the contract may become.

Note that all option choices are referring to the option positions in general. Very in- or out-of-the-money options are not considered.

9)	The Right Answer is C.
----	------------------------

Explanation: Choice I is incorrect because an at-the-money option will have a lower intrinsic value than an in-the-money option. Consequently, the premium of an at-the-money option will be worth less. II is also incorrect; the only difference between the two kinds of options is that an American option may be exercised at any time before maturity, whereas a European option may only be exercised on the maturity date. IV is incorrect because a short put position may only be closed out early by buying a put option with the exact same terms as the original put option. You can't close out a put with a call, and you can't close out a call with a put.

10)	The Right Answer is D .
-----	--------------------------------

Explanation: Notes:

1. The relevant LIBOR rate in 1 months time is the 3-month rate. (The 4 in 1 x 4 refers to the total length of this set up).
2. Since the 3-month LIBOR rate was higher than the pre-set rate of 4.7%, the buyer of the FRA will receive a payment.

Calculations:

1. The payment received in 4 months time:
= (Notional Amount) x (Actual Rate - Preset Rate) x (Term ÷ 360)
= (10,000,000) x (0.052 - 0.047) x (90 ÷ 360)
= 12,500

2. Payment may be settled at the expiring date of the FRA (in one month) by finding the present value of the payment expected in 4 months. (Note: use the Actual LIBOR rate as the discount rate).

$$\text{Payment in 1 month} = 12,500 \div [1 + (0.052)(90 \div 360)] = 12,340$$

11)	The Right Answer is D .
-----	--------------------------------

Explanation: Choice II is incorrect because for a call to be at the money, its intrinsic value must also be equal to zero. III is incorrect because even though the option markets are extremely efficient, the actual price of the option contracts is equal to the sum of the option's intrinsic value and its time value. Only on the expiration date will the actual price of the option be equal to its intrinsic value.

19)	The Right Answer is A. Explanation: Choice I is false because the daily price limit is the amount by which the futures price is allowed to move from the close of the previous trading session to the close of trading of the current day. Remember that the opening price of the current day is not always the same as the closing price of the previous day. IV is not always true. For some contracts, the "invoice price" for taking delivery of the underlying asset will be based on the futures price, but it may not be the actual futures price itself. For instance, the invoice price might be equal to the futures price times a factor.																		
20)	The Right Answer is B. <table border="0"> <tr> <td>End of Yr1: Fixed pays (\$100 million * 12%):</td> <td>\$12 million</td> </tr> <tr> <td>Variable pays (100 million * 12%):</td> <td>\$12 million</td> </tr> <tr> <td>= Net cash flow received by fixed payer:</td> <td><u>NIL</u></td> </tr> <tr> <td>End of Yr2: Fixed pays (\$100 million * 12%):</td> <td>\$12 million</td> </tr> <tr> <td>Variable pays (\$100 million * 16%):</td> <td>\$16 million</td> </tr> <tr> <td>= Net cash flow received by fixed payer:</td> <td><u>\$4 million</u></td> </tr> <tr> <td>End of Yr3: Fixed pays (\$100 million * 12%):</td> <td>\$12 million</td> </tr> <tr> <td>Variable pays (\$100 million * 9%):</td> <td>\$9 million</td> </tr> <tr> <td>= Net cash flow paid by fixed payer:</td> <td><u>\$3 million</u></td> </tr> </table>	End of Yr1: Fixed pays (\$100 million * 12%):	\$12 million	Variable pays (100 million * 12%):	\$12 million	= Net cash flow received by fixed payer:	<u>NIL</u>	End of Yr2: Fixed pays (\$100 million * 12%):	\$12 million	Variable pays (\$100 million * 16%):	\$16 million	= Net cash flow received by fixed payer:	<u>\$4 million</u>	End of Yr3: Fixed pays (\$100 million * 12%):	\$12 million	Variable pays (\$100 million * 9%):	\$9 million	= Net cash flow paid by fixed payer:	<u>\$3 million</u>
End of Yr1: Fixed pays (\$100 million * 12%):	\$12 million																		
Variable pays (100 million * 12%):	\$12 million																		
= Net cash flow received by fixed payer:	<u>NIL</u>																		
End of Yr2: Fixed pays (\$100 million * 12%):	\$12 million																		
Variable pays (\$100 million * 16%):	\$16 million																		
= Net cash flow received by fixed payer:	<u>\$4 million</u>																		
End of Yr3: Fixed pays (\$100 million * 12%):	\$12 million																		
Variable pays (\$100 million * 9%):	\$9 million																		
= Net cash flow paid by fixed payer:	<u>\$3 million</u>																		