**Chapter 20**

**Options Markets: Introduction**

**Multiple Choice Questions**

1. The price that the buyer of a call option pays to acquire the option is called the
A. strike price
B. exercise price
C. execution price
D. acquisition price
**E.** premium

The price that the buyer of a call option pays to acquire the option is called the premium.

 2. The price that the writer of a call option receives to sell the option is called the
A. strike price
B. exercise price
C. execution price
D. acquisition price
**E.** premium

The price that the writer of a call option receives to sell the option is called the premium.

 3. The price that the buyer of a put option pays to acquire the option is called the
A. strike price
B. exercise price
C. execution price
D. acquisition price
**E.** premium

The price that the buyer of a put option pays to acquire the option is called the premium.

 4. The price that the writer of a put option receives to sell the option is called the
**A.** premium
B. exercise price
C. execution price
D. acquisition price
E. strike price

The price that the writer of a put option receives to sell the option is called the premium.

 5. The price that the buyer of a call option pays for the underlying asset if she executes her option is called the
A. strike price
B. exercise price
C. execution price
D. strike price or execution price
**E.** strike price or exercise price

The price that the buyer of a call option pays for the underlying asset if she executes her option is strike price or exercise price.

 6. The price that the writer of a call option receives for the underlying asset if the buyer executes her option is called the
A. strike price
B. exercise price
C. execution price
**D.** strike price or exercise price
E. strike price or execution price

The price that the writer of a call option receives for the underlying asset if the buyer executes her option is called the strike price or exercise price.

 7. The price that the buyer of a put option receives for the underlying asset if she executes her option is called the
A. strike price
B. exercise price
C. execution price
D. strike price or execution price
**E.** strike price or exercise price

The price that the buyer of a put option receives for the underlying asset if she executes her option is called the strike price or exercise price.

 8. The price that the writer of a put option receives for the underlying asset if the option is exercised is called the
A. strike price
B. exercise price
C. execution price
D. strike price or exercise price
**E.** None of these is correct

The price that the writer of a put option receives for the underlying asset if the option is exercised depends on the market price at the time.

 9. An American call option allows the buyer to
A. sell the underlying asset at the exercise price on or before the expiration date.
B. buy the underlying asset at the exercise price on or before the expiration date.
C. sell the option in the open market prior to expiration.
D. sell the underlying asset at the exercise price on or before the expiration date and sell the option in the open market prior to expiration.
**E.** buy the underlying asset at the exercise price on or before the expiration date and sell the option in the open market prior to expiration.

An American call option may be exercised (allowing the holder to buy the underlying asset) on or before expiration; the option contract also may be sold prior to expiration.

 10. A European call option allows the buyer to
A. sell the underlying asset at the exercise price on the expiration date.
B. buy the underlying asset at the exercise price on or before the expiration date.
C. sell the option in the open market prior to expiration.
D. buy the underlying asset at the exercise price on the expiration date.
**E.** sell the option in the open market prior to expiration and buy the underlying asset at the exercise price on the expiration date.

A European call option may be exercised (allowing the holder to buy the underlying asset) on the expiration date; the option contract also may be sold prior to expiration.

 11. An American put option allows the holder to
A. buy the underlying asset at the striking price on or before the expiration date.
**B.** sell the underlying asset at the striking price on or before the expiration date.
C. potentially benefit from a stock price increase.
D. sell the underlying asset at the striking price on or before the expiration date and potentially benefit from a stock price increase.
E. buy the underlying asset at the striking price on or before the expiration date and potentially benefit from a stock price increase.

An American put option allows the buyer to sell the underlying asset at the striking price on or before the expiration date.

 12. A European put option allows the holder to
A. buy the underlying asset at the striking price on or before the expiration date.
B. sell the underlying asset at the striking price on or before the expiration date.
C. potentially benefit from a stock price increase.
**D.** sell the underlying asset at the striking price on the expiration date.
E. potentially benefit from a stock price increase and sell the underlying asset at the striking price on the expiration date.

A European put option allows the buyer to sell the underlying asset at the striking price only on the expiration date. The put option also allows the investor to benefit from an expected stock price decrease while risking only the amount invested in the contract.

13. An American put option can be exercised
**A.** any time on or before the expiration date.
B. only on the expiration date.
C. any time in the indefinite future.
D. only after dividends are paid.
E. None of these is correct.

American options can be exercised on or before expiration date.

 14. An American call option can be exercised
**A.** any time on or before the expiration date.
B. only on the expiration date.
C. any time in the indefinite future.
D. only after dividends are paid.
E. None of these is correct.

American options can be exercised on or before expiration date.

 15. A European call option can be exercised
A. any time in the future.
**B.** only on the expiration date.
C. if the price of the underlying asset declines below the exercise price.
D. immediately after dividends are paid.
E. None of these is correct.

European options can be exercised at expiration only.

 16. A European put option can be exercised
A. any time in the future.
**B.** only on the expiration date.
C. if the price of the underlying asset declines below the exercise price.
D. immediately after dividends are paid.
E. None of these is correct.

European options can be exercised at expiration only.

17. To adjust for stock splits
**A.** the exercise price of the option is reduced by the factor of the split and the number of options held is increased by that factor.
B. the exercise price of the option is increased by the factor of the split and the number of options held is reduced by that factor.
C. the exercise price of the option is reduced by the factor of the split and the number of options held is reduced by that factor.
D. the exercise price of the option is increased by the factor of the split and the number of options held is increased by that factor.
E. None of these is correct

To adjust for stock splits the exercise price of the option is reduced by the factor of the split and the number of options held is increased by that factor.

 18. All else equal, call option values are lower
A. in the month of May.
B. for low dividend payout policies.
**C.** for high dividend payout policies.
D. in the month of May and for low dividend payout policies.
E. in the month of May and for high dividend payout policies.

All else equal, call option values are lower for high dividend payout policies.

 19. All else equal, call option values are higher
A. in the month of May.
**B.** for low dividend payout policies.
C. for high dividend payout policies.
D. in the month of May and for low dividend payout policies.
E. in the month of May and for high dividend payout policies.

All else equal, call option values are higher for low dividend payout policies.

 20. The current market price of a share of AT&T stock is $50. If a call option on this stock has a strike price of $45, the call
A. is out of the money.
B. is in the money.
C. sells for a higher price than if the market price of AT&T stock is $40.
D. is out of the money and sells for a higher price than if the market price of AT&T stock is $40.
**E.** is in the money and sells for a higher price than if the market price of AT&T stock is $40.

If the striking price on a call option is less than the market price, the option is in the money and sells for more than an out of the money option.

 21. The current market price of a share of Boeing stock is $75. If a call option on this stock has a strike price of $70, the call
A. is out of the money.
B. is in the money.
C. sells for a higher price than if the market price of Boeing stock is $70.
D. is out of the money and sells for a higher price than if the market price of Boeing stock is $70.
**E.** is in the money and sells for a higher price than if the market price of Boeing stock is $70.

If the striking price on a call option is less than the market price, the option is in the money and sells for more than an at the money option.

22. The current market price of a share of CSCO stock is $22. If a call option on this stock has a strike price of $20, the call
A. is out of the money.
B. is in the money.
C. sells for a higher price than if the market price of CSCO stock is $21.
D. is out of the money and sells for a higher price than if the market price of CSCO stock is $21.
**E.** is in the money and sells for a higher price than if the market price of CSCO stock is $21.

If the striking price on a call option is less than the market price, the option is in the money and sells for more than a less in the money option.

 23. The current market price of a share of Disney stock is $30. If a call option on this stock has a strike price of $35, the call
**A.** is out of the money.
B. is in the money.
C. can be exercised profitably.
D. is out of the money and can be exercised profitably.
E. is in the money and can be exercised profitably.

If the striking price on a call option is more than the market price, the option is out of the money and cannot be exercised profitably.

 24. The current market price of a share of CAT stock is $76. If a call option on this stock has a strike price of $76, the call
A. is out of the money.
B. is in the money.
**C.** is at the money.
D. is out of the money and is at the money.
E. is in the money and is at the money.

If the striking price on a call option is equal to the market price, the option is at the money.

 25. The current market price of a share of MOT stock is $24. If a call option on this stock has a strike price of $24, the call
A. is out of the money.
B. is in the money.
**C.** is at the money.
D. is out of the money and is at the money.
E. is in the money and is at the money.

If the striking price on a call option is equal to the market price, the option is at the money.

26. The current market price of a share of IBM stock is $80. If a call option on this stock has a strike price of $80, the call
A. is out of the money.
B. is in the money.
**C.** is at the money.
D. is out of the money and is at the money.
E. is in the money and is at the money.

If the striking price on a call option is equal to the market price, the option is at the money.

 27. A put option on a stock is said to be out of the money if
A. the exercise price is higher than the stock price.
**B.** the exercise price is less than the stock price.
C. the exercise price is equal to the stock price.
D. the price of the put is higher than the price of the call.
E. the price of the call is higher than the price of the put.

An out of the money put option gives the owner the right to sell the shares for less than market price.

 28. A put option on a stock is said to be in the money if
**A.** the exercise price is higher than the stock price.
B. the exercise price is less than the stock price.
C. the exercise price is equal to the stock price.
D. the price of the put is higher than the price of the call.
E. the price of the call is higher than the price of the put.

An in the money put option gives the owner the right to sell the shares for more than market price.

29. A put option on a stock is said to be at the money if
A. the exercise price is higher than the stock price.
B. the exercise price is less than the stock price.
**C.** the exercise price is equal to the stock price.
D. the price of the put is higher than the price of the call.
E. the price of the call is higher than the price of the put.

A put option on a stock is said to be at the money if the exercise price is equal to the stock price.

30. A call option on a stock is said to be out of the money if
**A.** the exercise price is higher than the stock price.
B. the exercise price is less than the stock price.
C. the exercise price is equal to the stock price.
D. the price of the put is higher than the price of the call.
E. the price of the call is higher than the price of the put.

An out of the money call option gives the owner the right to buy the shares for more than market price.

31. A call option on a stock is said to be in the money if
A. the exercise price is higher than the stock price.
**B.** the exercise price is less than the stock price.
C. the exercise price is equal to the stock price.
D. the price of the put is higher than the price of the call.
E. the price of the call is higher than the price of the put.

An in the money call option gives the owner the right to buy the shares for less than market price.

 32. A call option on a stock is said to be at the money if
A. the exercise price is higher than the stock price.
B. the exercise price is less than the stock price.
**C.** the exercise price is equal to the stock price.
D. the price of the put is higher than the price of the call.
E. the price of the call is higher than the price of the put.

A call option on a stock is said to be at the money if the exercise price is equal to the stock price.

 33. The current market price of a share of JNJ stock is $60. If a put option on this stock has a strike price of $55, the put
A. is in the money.
B. is out of the money.
C. sells for a lower price than if the market price of JNJ stock is $50.
D. is in the money and sells for a lower price than if the market price of JNJ stock is $50.
**E.** is out of the money and sells for a lower price than if the market price of JNJ stock is $50.

If the striking price on a put option is less than the market price, the option is out of the money and sells for less than an in the money option.

 34. The current market price of a share of a stock is $80. If a put option on this stock has a strike price of $75, the put
A. is in the money.
B. is out of the money.
C. sells for a lower price than if the market price of the stock is $75.
D. is in the money and sells for a lower price than if the market price of the stock is $75.
**E.** is out of the money and sells for a lower price than if the market price of the stock is $75.

If the striking price on a put option is less than the market price, the option is out of the money and sells for less than an at the money option.

35. The current market price of a share of a stock is $20. If a put option on this stock has a strike price of $18, the put
**A.** is out of the money.
B. is in the money.
C. sells for a higher price than if the strike price of the put option was $23.
D. is out of the money and sells for a higher price than if the strike price of the put option was $23.
E. is in the money and sells for a higher price than if the strike price of the put option was $23.

If the striking price on a put option is less than the market price, the option is out of the money and sells for less than an in the money option.

 36. The current market price of a share of MOT stock is $15. If a put option on this stock has a strike price of $20, the put
A. is out of the money.
B. is in the money.
C. can be exercised profitably.
D. is out of the money and can be exercised profitably.
**E.** is in the money and can be exercised profitably.

If the striking price on a put option is more than the market price, the option is in the money.

 37. The current market price of a share of PALM stock is $75. If a put option on this stock has a strike price of $79, the put
A. is out of the money.
B. is in the money.
C. can be exercised profitably.
D. is out of the money and can be exercised profitably.
**E.** is in the money and can be exercised profitably.

If the striking price on a put option is more than the market price, the option is in the money and can be profitably exercised.

 38. The current market price of a share of AT&T stock is $50. If a put option on this stock has a strike price of $45, the put
A. is out of the money.
B. is in the money.
C. sells for a lower price than if the market price of AT&T stock is $40.
**D.** is out of the money and sells for a lower price than if the market price of AT&T stock is $40.
E. is in the money and sells for a lower price than if the market price of AT&T stock is $40.

If the striking price on a put option is less than the market price, the option is out of the money and sells for less than an in the money option.

39. The current market price of a share of Boeing stock is $75. If a put option on this stock has a strike price of $70, the put
**A.** is out of the money.
B. is in the money.
C. sells for a higher price than if the market price of Boeing stock is $70.
D. is out of the money and sells for a higher price than if the market price of Boeing stock is $70.
E. is in the money and sells for a higher price than if the market price of Boeing stock is $70.

If the striking price on a put option is less than the market price, the option is out of the money and sells for less than an at the money option.

 40. The current market price of a share of CSCO stock is $22. If a put option on this stock has a strike price of $20, the put
**A.** is out of the money.
B. is in the money.
C. sells for a higher price than if the strike price of the put option was $25.
D. is out of the money and sells for a higher price than if the strike price of the put option was $25.
E. is in the money and sells for a higher price than if the strike price of the put option was $25.

If the striking price on a put option is less than the market price, the option is out of the money and sells for less than an in the money option.

 41. The current market price of a share of Disney stock is $30. If a put option on this stock has a strike price of $35, the put
A. is out of the money.
B. is in the money.
C. can be exercised profitably.
D. is out of the money and can be exercised profitably.
**E.** is in the money and can be exercised profitably.

If the striking price on a put option is more than the market price, the option is in the money and can be exercise profitably.

 42. The current market price of a share of CAT stock is $76. If a put option on this stock has a strike price of $80, the put
A. is out of the money.
B. is in the money.
C. can be exercised profitably.
D. is out of the money and can be exercised profitably.
**E.** is in the money and can be exercised profitably.

If the striking price on a put option is less than the market price, the option is in the money and can be profitably exercised.

43. Lookback options have payoffs that
**A.** depend in part on the minimum or maximum price of the underlying asset during the life of the option.
B. only depend on the minimum price of the underlying asset during the life of the option.
C. only depend on the maximum price of the underlying asset during the life of the option.
D. are known in advance.
E. None of these is correct.

Lookback options have payoffs that have payoffs that depend in part on the minimum or maximum price of the underlying asset during the life of the option.

 44. Barrier Options have payoffs that
A. have payoffs that only depend on the minimum price of the underlying asset during the life of the option.
**B.** depend both on the asset's price at expiration and on whether the underlying asset's price has crossed through some barrier.
C. are known in advance.
D. have payoffs that only depend on the maximum price of the underlying asset during the life of the option.
E. None of these is correct.

Barrier Options have payoffs that depend both on the asset's price at expiration and on whether the underlying asset's price has crossed through some barrier.

 45. Currency-Translated Options have
A. only asset prices denoted in a foreign currency.
B. only exercise prices denoted in a foreign currency.
C. have payoffs that only depend on the maximum price of the underlying asset during the life of the option.
**D.** either asset or exercise prices denoted in a foreign currency.
E. None of these is correct.

Currency-Translated Options have either asset or exercise prices denoted in a foreign currency.

 46. Binary Options
A. are based on two possible outcomes—yes or no.
B. may make a payoff of a fixed amount if a specified event happens.
C. may make a payoff of a fixed amount if a specified event does not happen.
D. are based on two possible outcomes—yes or no and may make a payoff of a fixed amount if a specified event happens.
**E.** Options are based on two possible outcomes—yes or no, may make a payoff of a fixed amount if a specified event happens, and may make a payoff of a fixed amount if a specified event does not happen**.**

Binary Options are based on two possible outcomes—yes or no, may make a payoff of a fixed amount if a specified event happens, and may make a payoff of a fixed amount if a specified event does not happen.

47. The maximum loss a buyer of a stock call option can suffer is equal to
A. the striking price minus the stock price.
B. the stock price minus the value of the call.
**C.** the call premium.
D. the stock price.
E. None of these is correct.

If an option expires worthless all the buyer has lost is the price of the contract (premium).

 48. The maximum loss a buyer of a stock put option can suffer is equal to
A. the striking price minus the stock price.
B. the stock price minus the value of the call.
**C.** the put premium.
D. the stock price.
E. None of these is correct.

If an option expires worthless all the buyer has lost is the price of the contract (premium).

 49. The lower bound on the market price of a convertible bond is
A. its straight bond value.
B. its crooked bond value.
C. its conversion value.
**D.** its straight bond value and its conversion value.
E. None of these is correct

The lower bound on the market price of a convertible bond is its straight bond value or its conversion value.

 50. The potential loss for a writer of a naked call option on a stock is
A. limited.
**B.** unlimited.
C. larger the lower the stock price.
D. equal to the call premium.
E. None of these is correct.

If the buyer of the option elects to exercise the option and buy the stock at the exercise price, the seller of the option must go into the open market and buy the stock (in order to sell the stock to the buyer of the contract) at the current market price. Theoretically, the market price of a stock is unlimited; thus the writer's potential loss is unlimited.

51. You write one JNJ February 70 put for a premium of $5. Ignoring transactions costs, what is the breakeven price of this position?
**A.** $65
B. $75
C. $5
D. $70
E. None of these is correct

+$70 − $5 = $65.

52. You purchase one JNJ 75 call option for a premium of $3. Ignoring transaction costs, the break-even price of the position is
A. $75
B. $72
C. $3
**D.** $78
E. None of these is correct

+75 + $3 = $78.

 53. You write one AT&T February 50 put for a premium of $5. Ignoring transactions costs, what is the breakeven price of this position?
A. $50
B. $55
**C.** $45
D. $40
E. None of these is correct

+$50 − $5 = $45.

 54. You purchase one IBM 70 call option for a premium of $6. Ignoring transaction costs, the break-even price of the position is
A. $98
B. $64
**C.** $76
D. $70
E. None of these is correct

+70 + $6 = $76.

 55. Call options on IBM listed stock options are
A. issued by IBM Corporation.
B. created by investors.
C. traded on various exchanges.
D. issued by IBM Corporation and traded on various exchanges.
**E.** created by investors and traded on various exchanges.

Options are merely contracts between buyer and seller and sold on various organized exchanges and the OTC market.

 56. Buyers of call options \_\_\_\_\_\_\_\_\_\_ required to post margin deposits and sellers of put options \_\_\_\_\_\_\_\_\_\_ required to post margin deposits.
A. are; are not
B. are; are
**C.** are not; are
D. are not; are not
E. are always; are sometimes

Buyers of call options pose no risk as they have no commitment. If the option expires worthless, the buyer merely loses the option premium. If the option is in the money at expiration and the buyer lacks funds, there is no requirement to exercise. The seller of a put option is committed to selling the stock at the exercise price. If the seller of the option does not own the underlying stock the seller must go into the open market and buy the stock in order to be able to sell the stock to the buyer of the contract.

 57. Buyers of put options anticipate the value of the underlying asset will \_\_\_\_\_\_\_\_\_\_ and sellers of call options anticipate the value of the underlying asset will \_\_\_\_\_\_\_.
A. increase; increase
B. decrease; increase
C. increase; decrease
**D.** decrease; decrease
E. cannot tell without further information

The buyer of the put option hopes the price will fall in order to exercise the option and sell the stock at a price higher than the market price. Likewise, the seller of the call option hopes the price will decrease so the option will expire worthless.

 58. The Option Clearing Corporation is owned by
A. the Federal Reserve System.
**B.** the exchanges on which stock options are traded.
C. the major U. S. banks.
D. the Federal Deposit Insurance Corporation.
E. None of these is correct.

The exchanges on which options are traded jointly own the Option Clearing Corporation in order to facilitate option trading.

 59. A covered call position is
A. the simultaneous purchase of the call and the underlying asset.
B. the purchase of a share of stock with a simultaneous sale of a put on that stock.
C. the short sale of a share of stock with a simultaneous sale of a call on that stock.
**D.** the purchase of a share of stock with a simultaneous sale of a call on that stock.
E. the simultaneous purchase of a call and sale of a put on the same stock.

Writing a covered call is a very safe strategy, as the writer owns the underlying stock. The only risk to the writer is that the stock will be called away, thus limiting the upside potential.

 60. According to the put-call parity theorem, the value of a European put option on a non-dividend paying stock is equal to:
A. the call value plus the present value of the exercise price plus the stock price.
**B.** the call value plus the present value of the exercise price minus the stock price.
C. the present value of the stock price minus the exercise price minus the call price.
D. the present value of the stock price plus the exercise price minus the call price.
E. None of these is correct.

P = C − SO + PV(X) + PV(dividends), where SO = the market price of the stock, and X = the exercise price.

61. A protective put strategy is
**A.** a long put plus a long position in the underlying asset.
B. a long put plus a long call on the same underlying asset.
C. a long call plus a short put on the same underlying asset.
D. a long put plus a short call on the same underlying asset.
E. None of these is correct.

If you invest in a stock and purchase a put option on the stock you are guaranteed a payoff equal to the exercise price; thus the protection of the put.

 62. Suppose the price of a share of Google stock is $500. An April call option on Google stock has a premium of $5 and an exercise price of $500. Ignoring commissions, the holder of the call option will earn a profit if the price of the share
A. increases to $504.
B. decreases to $490.
**C.** increases to $506.
D. decreases to $496.
E. None of these is correct.

$500 + $5 = $505 (Breakeven). The price of the stock must increase to above $505 for the option holder to earn a profit.

 63. Suppose the price of a share of IBM stock is $100. An April call option on IBM stock has a premium of $5 and an exercise price of $100. Ignoring commissions, the holder of the call option will earn a profit if the price of the share
A. increases to $104.
B. decreases to $90.
**C.** increases to $106.
D. decreases to $96.
E. None of these is correct.

$100 + $5 = $105 (Breakeven). The price of the stock must increase to above $105 for the option holder to earn a profit.

 64. You purchased one AT&T March 50 call and sold one AT&T March 55 call. Your strategy is known as
A. a long straddle.
B. a horizontal spread.
**C.** a money spread.
D. a short straddle.
E. None of these is correct.

A money spread involves the purchase one option and the simultaneous sale of another with a different exercise price and same expiration date.

 65. You purchased one AT&T March 50 put and sold one AT&T April 50 put. Your strategy is known as
A. a vertical spread.
B. a straddle.
**C.** a time spread.
D. a collar.
E. None of these is correct.

A time spread involves the simultaneous purchase and sale of options with different expiration dates, same exercise price.

66. Before expiration, the time value of a call option is equal to
A. zero.
**B.** the actual call price minus the intrinsic value of the call.
C. the intrinsic value of the call.
D. the actual call price plus the intrinsic value of the call.
E. None of these is correct.

The difference between the actual call price and the intrinsic value is the time value of the option, which should not be confused with the time value of money. The option's time value is the difference between the option's price and the value of the option were the option expiring immediately.

 67. Which of the following factors affect the price of a stock option
A. the risk-free rate.
B. the riskiness of the stock.
C. the time to expiration.
D. the expected rate of return on the stock.
**E.** the risk-free rate, the riskiness of the stock, and the time to expiration.

The risk-free rate, the riskiness of the stock, and the time to expiration are directly related to the price of the option; the expected rate of return on the stock does not affect the price of the option.

 68. All of the following factors affect the price of a stock option **except**
A. the risk-free rate.
B. the riskiness of the stock.
C. the time to expiration.
**D.** the expected rate of return on the stock.
E. None of these is correct.

The risk-free rate, the riskiness of the stock, and the time to expiration are directly related to the price of the option; the expected rate of return on the stock does not affect the price of the option.

69. The value of a stock put option is positively related to the following factors **except**
A. the time to expiration.
B. the striking price.
**C.** the stock price.
D. All of these are correct.
E. None of these is correct.

The time to expiration and striking price are positively related to the value of a put option; the stock price is inversely related to the value of the option.

70. The value of a stock put option is positively related to
A. the time to expiration.
B. the striking price.
C. the stock price.
D. all listed answers.
**E.** the time to expiration and the striking price.

The time to expiration and striking price are positively related to the value of a put option; the stock price is inversely related to the value of the option.

 71. You purchase one September 50 put contract for a put premium of $2. What is the maximum profit that you could gain from this strategy?
**A.** $4,800
B. $200
C. $5,000
D. $5,200
E. None of these is correct

−$200 + $5,000 = $4,800 (if the stock falls to zero.)

 72. You purchase one June 70 put contract for a put premium of $4. What is the maximum profit that you could gain from this strategy?
A. $7,000
B. $400
C. $7,400
**D.** $6,600
E. None of these is correct

−$400 + $7,000 = $6,600 (if the stock falls to zero.)

 73. You purchase one IBM March 100 put contract for a put premium of $6. What is the maximum profit that you could gain from this strategy?
A. $10,000
B. $10,600
**C.** $9,400
D. $9,000
E. None of these is correct

−$600 + $10,000 = $9,400 (if the stock falls to zero.)

74. The following price quotations were taken from the Wall Street Journal.
 
The premium on one February 90 call contract is
A. $3.1250
B. $318.00
**C.** $312.50
D. $58.00
E. None of these is correct

3 1/8 = $3.125 X 100 = $312.50. Price quotations are per share; however, option contracts are standardized for 100 shares of the underlying stock; thus, the quoted premiums must be multiplied by 100.

 75. The following price quotations on IBM were taken from the Wall Street Journal.
 
The premium on one IBM February 90 call contract is
A. $4.1250
B. $418.00
**C.** $412.50
D. $158.00
E. None of these is correct

4 1/8 = $4.125 X 100 = $412.50. Price quotations are per share; however, option contracts are standardized for 100 shares of the underlying stock; thus, the quoted premiums must be multiplied by 100.

76. The following price quotations on IBM were taken from the Wall Street Journal.
 
The premium on one IBM February 85 call contract is
A. $8.875
**B.** $887.50
C. $412.50
D. $158.00
E. None of these is correct

8 7/8 = $8.875 X 100 = $887.50. Price quotations are per share; however, option contracts are standardized for 100 shares of the underlying stock; thus, the quoted premiums must be multiplied by 100.

 Suppose you purchase one IBM May 100 call contract at $5 and write one IBM May 105 call contract at $2.

77. The maximum potential profit of your strategy is \_\_\_\_\_\_\_\_ if both options are exercised.
A. $600.
B. $500.
**C.** $200.
D. $300.
E. $100

−$100 − $5 = −$105; + $2 + $105 = $107; $2 × 100 = $200.

 78. If, at expiration, the price of a share of IBM stock is $103, your profit would be
A. $500.
B. $300.
**C.** zero.
D. $200.
E. None of these is correct.

$103 − $100 = $3 − ($5 − $2) =0; $0 × 100 = $0.

 79. The maximum loss you could suffer from your strategy is
A. $200.
**B.** $300.
C. zero.
D. $500.
E. None of these is correct.

−$5 + $2 = −$3 × 100 = −$300.

 80. What is the lowest stock price at which you can break even?
A. $101.
B. $102.
**C.** $103.
D. $104.
E. None of these is correct.

x = $100 + $5 − $2; x = $103.

  You buy one Xerox June 60 call contract and one June 60 put contract. The call premium is $5 and the put premium is $3.

81. Your strategy is called
A. a short straddle.
**B.** a long straddle.
C. a horizontal straddle.
D. a covered call.
E. None of these is correct.

Buying both a put and a call, each with the same expiration date and exercise price is a long straddle.

 82. Your maximum loss from this position could be
A. $500.
B. $300.
**C.** $800.
D. $200.
E. None of these is correct.

−$5 + (−$3) = −$8 × 100 = $800.

 83. At expiration, you break even if the stock price is equal to
A. $52.
B. $60.
C. $68.
**D.** $52 and $68.
E. None of these is correct.

Call: −$60 + (−$5) + $3 = $68 (Break even); Put: −$3 + $60 + (−$5) = $52 (Break even); thus, if price increases above $68 or decreases below $52, a profit is realized.

 84. The put-call parity theorem
A. represents the proper relationship between put and call prices.
B. allows for arbitrage opportunities if violated.
C. may be violated by small amounts, but not enough to earn arbitrage profits, once transaction costs are considered.
**D.** All of these are correct.
E. None of these is correct.

The put-call parity relationship states the relationship between put and call prices, which, if violated, allows for arbitrage profits; however, these profits may disappear once transaction costs are considered.

 85. Some more "traditional" assets have option-like features; some of these instruments include
A. callable bonds.
B. convertible bonds.
C. warrants.
D. callable bonds and convertible bonds.
**E.** callable bonds, convertible bonds, and warrants.

All of the mentioned instruments have option-like features.

86. Financial engineering
A. is the custom designing of securities or portfolios with desired patterns of exposure to the price of the underlying security.
B. primarily takes place for institutional investor.
C. primarily takes places for the individual investor.
**D.** is the custom designing of securities or portfolios with desired patterns of exposure to the price of the underlying security and primarily takes place for institutional investor.
E. is the custom designing of securities or portfolios with desired patterns of exposure to the price of the underlying security and primarily takes places for the individual investor.

Financial engineering is the customization of new securities, primarily for institutional investors.

 87. A collar with a net outlay of approximately zero is an options strategy that
A. combines a put and a call to lock in a price range for a security.
B. uses the gains from sale of a call to purchase a put.
C. uses the gains from sale of a put to purchase a call.
**D.** combines a put and a call to lock in a price range for a security and uses the gains from sale of a call to purchase a put.
E. combines a put and a call to lock in a price range for a security and uses the gains from sale of a put to purchase a call.

The collar brackets the value of a portfolio between two bounds.

 88. Top Flight Stock currently sells for $53. A one-year call option with strike price of $58 sells for $10, and the risk free interest rate is 5.5%. What is the price of a one-year put with strike price of $58?
A. $10.00
B. $12.12
C. $16.00
**D.** $11.97
E. $14.13

P = 10 − 53 + 58/(1.055); P = 11.97

 89. HighFlyer Stock currently sells for $48. A one-year call option with strike price of $55 sells for $9, and the risk free interest rate is 6%. What is the price of a one-year put with strike price of $55?
A. $9.00
**B.** $12.89
C. $16.00
D. $18.72
E. $15.60

P = 9 − 48 + 55/(1.06); P = 12.89

90. ING Stock currently sells for $38. A one-year call option with strike price of $45 sells for $9, and the risk free interest rate is 4%. What is the price of a one-year put with strike price of $45?
A. $9.00
B. $12.89
C. $16.00
D. $18.72
**E.** $14.26

P = 9 − 38 + 45/(1.04); P = 14.26

 91. A callable bond should be priced the same as
A. a convertible bond.
B. a straight bond plus a put option.
**C.** a straight bond plus a call option.
D. a straight bond plus warrants.
E. a straight bond.

A callable bond is the equivalent of a straight bond sale by the corporation and the concurrent issue of a call option by the bond buyer.

 92. Asian options differ from American and European options in that
A. they are only sold in Asian financial markets.
B. they never expire.
**C.** their payoff is based on the average price of the underlying asset.
D. they are only sold in Asian financial markets and they never expire.
E. they are only sold in Asian financial markets and their payoff is based on the average price of the underlying asset.

Asian options have payoffs that depend on the average price of the underlying asset during some period of time.

 93. Trading in "exotic options" takes place primarily
A. on the New York Stock Exchange.
**B.** in the over-the-counter market.
C. on the American Stock Exchange.
D. in the primary marketplace.
E. None of these is correct.

There is an active over-the-counter market for exotic options.

94. Consider a one-year maturity call option and a one-year put option on the same stock, both with striking price $45. If the risk-free rate is 4%, the stock price is $48, and the put sells for $1.50, what should be the price of the call?
A. $4.38
B. $5.60
**C.** $6.23
D. $12.26
E. None of these is correct.

C = 48 − [45/(1.04)] + 1.50; C = $6.23.

95. Consider a one-year maturity call option and a one-year put option on the same stock, both with striking price $100. If the risk-free rate is 5%, the stock price is $103, and the put sells for $7.50, what should be the price of the call?
A. $17.50
**B.** $15.26
C. $10.36
D. $12.26
E. None of these is correct.

C = 103 − [100/(1.05)] + 7.50; C = $15.26.

 96. Derivative securities are also called contingent claims because
A. their owners may choose whether or not to exercise them.
B. a large contingent of investors holds them.
C. the writers may choose whether or not to exercise them.
**D.** their payoffs depend on the prices of other assets.
E. contingency management is used in adding them to portfolios.

The values of derivatives depend on the values of the underlying stock, commodity, index, etc.

 97. You purchased a call option for $3.45 seventeen days ago. The call has a strike price of $45 and the stock is now trading for $51. If you exercise the call today, what will be your holding period return? If you do not exercise the call today and it expires, what will be your holding period return?
A. 173.9%, -100%
**B.** 73.9%, -100%
C. 57.5%, -173.9%
D. 73.9%, -57.5%
E. 100%, -100%

If the call is exercised the gross profit is $51 − 45=$6. The net profit is $6 − 3.45=$2.55. The holding period return is $2.55/$3.45=.739 (73.9%). If the call is not exercised, there is no gross profit and the investor loses the full amount of the premium. The return is ($0 − 3.45)/$3.45= −1.00 (−100%).

 98. An option with an exercise price equal to the underlying asset's price is
A. worthless.
B. in the money.
**C.** at the money.
D. out of the money.
E. theoretically impossible.

This is the definition of "at the money". The option has a market value and may increase in value if there are favorable price movements in the underlying asset before the expiration date.

99. To the option holder, put options are worth \_\_\_\_\_\_ when the exercise price is higher; call options are worth \_\_\_\_\_\_ when the exercise price is higher.
A. more; more
**B.** more; less
C. less; more
D. less; less
E. It doesn't matter - they are too risky to be included in a reasonable person's portfolio.

The holder of the put would prefer to sell the asset to the writer at a higher exercise price. The holder of the call would prefer to buy the asset from the writer at a lower exercise price.

 100. What happens to an option if the underlying stock has a 2-for-1 split?
A. There is no change in either the exercise price or in the number of options held.
B. The exercise price will adjust through normal market movements; the number of options will remain the same.
**C.** The exercise price would become half of what it was and the number of options held would double.
D. The exercise price would double and the number of options held would double.
E. There is no standard rule - each corporation has its own policy.

This is similar to what happens to the underlying stock.

 101. What happens to an option if the underlying stock has a 3-for-1 split?
A. There is no change in either the exercise price or in the number of options held.
B. The exercise price will adjust through normal market movements; the number of options will remain the same.
**C.** The exercise price would become one third of what it was and the number of options held would triple.
D. The exercise price would triple and the number of options held would triple.
E. There is no standard rule - each corporation has its own policy.

This is similar to what happens to the underlying stock.

 102. Suppose that you purchased a call option on the S&P 100 index. The option has an exercise price of 680 and the index is now at 720. What will happen when you exercise the option?
A. You will have to pay $680.
B. You will receive $720.
C. You will receive $680.
**D.** You will receive $4,000.
E. You will have to pay $4,000.

When an index option is exercised the writer of the option pays cash to the option holder. The amount of cash equals the difference between the exercise price of the option and the value of the index. In this case, you will receive 720 – 680 = 40 times the $100 multiplier, or $4,000. In other words, you are implicitly buying the index for 680 and selling it to the call writer for 720.

103. Suppose that you purchased a call option on the S&P 100 index. The option has an exercise price of 700 and the index is now at 760. What will happen when you exercise the option?
A. You will have to pay $6,000.
**B.** You will receive $6,000.
C. You will receive $700.
D. You will receive $760.
E. You will have to pay $7,000.

When an index option is exercised the writer of the option pays cash to the option holder. The amount of cash equals the difference between the exercise price of the option and the value of the index. In this case, you will receive 760 – 700 = 60 times the $100 multiplier, or $6,000. In other words, you are implicitly buying the index for 700 and selling it to the call writer for 760.

**Short Answer Questions**

104. What is the Option Clearing Corporation (OCC) and how does this organization facilitate option trading?

The OCC is the other side of every option transaction. As a result, the buyers and sellers do not have to be matched with each other. In addition, the OCC guarantees their side of the transaction.

Feedback: The purpose of this question is to ascertain whether the student understands how the options market differs from the markets previously studied in terms of the existence of the "middleperson" in the options market.

 105. Describe the protective put. What are the advantages of such a strategy?

A protective put consists of investing in stock and simultaneously purchasing a put option on the stock. Regardless of what happens to the price of the stock, you are guaranteed a payoff equal to the put option exercise price.

Feedback: The purpose of this question is to determine if the student understands the mechanism of one the more common and less complex option strategies.

 106. Discuss the differences in writing covered and naked calls. Are risks involved in the two strategies similar or different? Explain.

Writing a covered call is selling a call on stock the investor owns. Thus, this strategy is very conservative; the investor receives the premium income from writing the call. If the call is exercised, the stock is called away from the investor; thus the investor has limited his or her upside potential.
Writing a naked call is a very risky strategy. The investor sells a call on a stock the investor does not own. If the price of the stock increases, the option will be exercised and the investor must go into the open market and buy the stock at the prevailing market price.
Theoretically, the price to which the stock can increase is unlimited; thus, the investor's potential loss in unlimited.

Feedback: The purpose of this question is to be sure that the student differentiates between the very common and conservative strategy of writing covered calls and the risky strategy of writing naked calls.

 107. Draw a graph that shows the payoff and profit to the holder of a call option at expiration. Draw another graph that shows the payoff to the holder of a put option at expiration. Draw a third graph that shows the payoff of a long straddle at expiration. Be sure to label the axes and all other relevant features of the graphs.

The first graph should look like Figure 20.2. The second graph should look like Figure 20.4. The third graph should look like panel C in Figure 20.9. The labels on the graph should include Stock Price on the horizontal axis, Value of the Option on the vertical axis, profit, exercise price, and price of the option, as shown in the textbook figures.

Feedback: This question allows the student to demonstrate his or her understanding of the options concepts in a visual way. The third graph measures the student's comprehension of the straddle approach.

 108. List three types of exotic options and describe their characteristics.

There are five exotic options mentioned in the textbook:
• Asian Options have payoffs that depend on the average price of the underlying asset during at least some portion of the life of the option.
• Barrier Options have payoffs that depend both on the asset's price at expiration and on whether the underlying asset's price has crossed through some barrier. If the asset's price crosses the barrier the option might automatically expire. Or if the asset's price does not cross the barrier the option may not pay.
• Lookback Options have payoffs linked to the maximum or minimum price during the life of the option. The option would "look back" to see what the relevant price was and the payoff would be based on that rather than on the price at the expiration date.
• Currency-Translated Options have either asset or exercise prices denoted in a foreign currency. For example, an exchange rate may be specified as the rate at which a foreign currency can be converted into dollars.
• Binary Options are based on two possible outcomes—yes or no. If a specified event happens, the option may make a payoff of a fixed amount. If the event does not happen, there may be no payoff. The opposite arrangement is also possible.

Feedback: This question gives the student an opportunity to explore some of the results of financial engineering. It verifies the student's understanding of items that go beyond the basic options.