Student name:\_\_\_\_\_\_\_\_\_\_

**MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.  
1)** A(n) \_\_\_\_\_\_\_\_ is a financial contract that provides its owner with the right, but not the obligation, to buy or sell a specified asset at an agreed-upon price on or before a given future date.

1) \_\_\_\_\_\_

A) option   
 B) futures  
 C) forward  
 D) swap  
 E) straddle

**2)** When an owner of an option buys or sells the underlying asset, as is his or her right, the action is called \_\_\_\_\_\_ the option.

2) \_\_\_\_\_\_

A) striking   
 B) exercising  
 C) opening  
 D) splitting  
 E) strangling

**3)** An option’s \_\_\_\_\_\_\_\_ is the fixed price at which the owner can buy or sell the underlying asset.

3) \_\_\_\_\_\_

A) opening price   
 B) intrinsic value  
 C) strike price  
 D) market price  
 E) time value

**4)** The \_\_\_\_\_\_\_\_ date is the last day on which an owner of an option can elect to exercise that option.

4) \_\_\_\_\_\_

A) ex-payment   
 B) ex-option  
 C) opening  
 D) expiration  
 E) intrinsic

**5)** A(n) \_\_\_\_\_\_\_\_ option may be exercised only on the expiration date.

5) \_\_\_\_\_\_

A) European   
 B) American  
 C) Bermudian  
 D) futures  
 E) Australian

**6)** Unlike a European option, an American option:

6) \_\_\_\_\_\_

A) has a fixed exercise price.   
 B) is an obligation to buy.  
 C) has an expiration date.  
 D) is written on 100 shares of the underlying security.  
 E) can be exercised at any time up to the expiration date.

**7)** A(n) \_\_\_\_\_\_\_\_ option may be exercised at any time up to and including its expiration date.

7) \_\_\_\_\_\_

A) futures   
 B) Asian  
 C) Bermudian  
 D) European  
 E) American

**8)** A call option that is \_\_\_\_\_\_\_\_ has a positive intrinsic value at expiration.

8) \_\_\_\_\_\_

A) funded   
 B) unfunded  
 C) at the money  
 D) in the money  
 E) out of the money

**9)** A \_\_\_\_\_ is a derivative security that gives the owner the right, but not the obligation, to buy an asset at a fixed price for a specified period of time.

9) \_\_\_\_\_\_

A) futures contract   
 B) call option  
 C) put option  
 D) swap  
 E) forward contract

**10)** An owner of a European call option:

10) \_\_\_\_\_\_

A) is obligated to buy the specified assets prior to the option's expiration.   
 B) has the right to sell the specified assets at the set price at any time up to and including on the expiration date.  
 C) has the right to buy the specified assets at the set price only on the expiration date.  
 D) is obligated to sell the specified assets at the set price if the option is exercised.  
 E) has the right to buy the specified assets at the set price at any time prior to the option's expiration.

**11)** Which of the following events will increase the value of a call option?  
 1.I. An increase in the market value of the underlying asset  
 2.II. An increase in the option's strike price  
 3.III. A decrease in the market value of the underlying asset  
 4.IV. A decrease in the option’s strike price

11) \_\_\_\_\_\_

A) I and II only   
 B) II only  
 C) II and III only  
 D) I and IV only  
 E) I only

**12)** An out-of-the-money call option is best defined as an option that:

12) \_\_\_\_\_\_

A) has an exercise price below the current market price of the underlying security.   
 B) should not be exercised at this time.  
 C) has an exercise price equal to the current market price of the underlying security.  
 D) has expired.  
 E) qualifies as an American option.

**13)** Tanaya owns a call option on Ulysses stock with a strike price of $17.50 per share. Currently, Ulysses is selling for $19.25 per share. Tanaya would like to profit on this option but is not permitted to exercise the option for another two weeks. She believes the stock will decline in value before the two weeks is up. What should she do?

13) \_\_\_\_\_\_

A) Sell her option today   
 B) Place an order to exercise her option on its expiration date  
 C) Purchase an additional call option on Ulysses today with a strike price of $17.50  
 D) Place an order to exercise her option as soon as she is permitted to do so  
 E) Convert her American option into a European option

**14)** The owner of a European put option has the:

14) \_\_\_\_\_\_

A) right, but not the obligation, to sell the underlying asset at the specified price only on the specified date.   
 B) right, but not the obligation, to sell the underlying asset at the specified price during a specified period of time.  
 C) obligation to sell the underlying asset on the specified date, but only if they can do so at the specified price.  
 D) obligation to buy the underlying asset sometime during the specified period at the specified price.  
 E) right, but not the obligation, to buy the underlying asset at the exercise price on the expiration date.

**15)** An option that grants the right, but not the obligation, to sell shares of the underlying asset during a particular time period at a specified price is called:

15) \_\_\_\_\_\_

A) either an American or a European option.   
 B) an American call option.  
 C) an American put option.  
 D) a European put option.  
 E) a European call option.

**16)** Which one of the following provides the right to sell a stock anytime during the option period at the strike price, even if the market price of the stock declines to zero?

16) \_\_\_\_\_\_

A) American call   
 B) European call  
 C) American put  
 D) European put  
 E) Should the underlying stock price decline to zero, all options are null and void.

**17)** Which of the following events will decrease the value of a put option?  
 1.I. An increase in the market value of the underlying asset  
 2.II. An increase in the option's strike price  
 3.III. A decrease in the market value of the underlying asset  
 4.IV. A decrease in the option's strike price

17) \_\_\_\_\_\_

A) I and II only   
 B) I and IV only  
 C) II and III only  
 D) III only  
 E) IV only

**18)** An in-the-money put option:

18) \_\_\_\_\_\_

A) has an exercise price greater than the underlying stock price.   
 B) has an exercise price less than the underlying stock price.  
 C) expires today.  
 D) should not be exercised at expiration.  
 E) should not be exercised at any time.

**19)** On the expiration day, the maximum price of a put option on a stock is the greater of the:

19) \_\_\_\_\_\_

A) stock price minus the exercise price, or 0.   
 B) the exercise price or 0.  
 C) exercise price minus the stock price, or 0.  
 D) stock price or 0.  
 E) exercise price or the stock price.

**20)** Anish owns an American put option on 100 shares of Handle stock. The option has a strike price of $32.50 and a September expiration date. The stock has recently been declining in value, currently sells for $27.65 per share, and is expected to continue declining in value. Ignore all costs and taxes. If today is Wednesday, August 14, he:

20) \_\_\_\_\_\_

A) cannot exercise his option even though he would like to do so.   
 B) should hold his option until September.  
 C) can exercise his option and earn a profit.  
 D) should exercise his option today and then sell the shares of stock on the September expiration date.  
 E) should let his option expire unless the stock price increases above $32.50 per share.

**21)** A put option on Ancestor stock with an exercise price of $35 expires today. The current price of Ancestor stock is $36. The put is:

21) \_\_\_\_\_\_

A) funded.   
 B) unfunded.  
 C) at the money.  
 D) in the money.  
 E) out of the money.

**22)** Which one of the following statements concerning call option writers is true?

22) \_\_\_\_\_\_

A) Call option writers promise to purchase shares if the call option is exercised.   
 B) The call option writer has the option, but not the obligation, to purchase shares if the option is exercised.  
 C) The call option writer is betting that the market price of the underlying asset will increase.  
 D) The call option writer receives a cash payment when the option is written.  
 E) The call option writer earns a profit when an in-the-money option is exercised.

**23)** Cole has an option position on McCarthy stock that results in a zero dollar payoff when the stock price is equal to or greater than the option strike price. What did he do to obtain this position?

23) \_\_\_\_\_\_

A) Purchased a call option   
 B) Purchased a put option  
 C) Wrote a call option  
 D) Wrote a put option  
 E) No option position would have this result.

**24)** Assume you are reviewing a table that lists the current stock option contracts and quotes. Which one of these statements would correctly apply to that table?

24) \_\_\_\_\_\_

A) If you write a contract you will pay the bid price per share listed in the table.   
 B) If you write a contract you will receive the difference between the bid and ask prices per share.  
 C) The bid price on a specific contract will be higher than the ask price on that same contract.  
 D) To purchase one contract you must pay 1,000 times the quoted bid price shown in the table.  
 E) To purchase one contract you must pay 100 times the quoted ask price shown in the table.

**25)** Assume you are reviewing a table that lists the current stock option contracts and quotes. On a specific contract the table shows an option interest value of 43 and volume of 8. This means that:

25) \_\_\_\_\_\_

A) 8 contracts were exercised on that day while 43 more were traded.   
 B) 43 contracts were traded on that day compared to only 8 traded on the previous day.  
 C) 8 contracts were traded on that day at a price of $.43 per share.  
 D) 43 contracts were traded on that day at the bid price and 8 were traded at the ask price.  
 E) 8 of the 43 outstanding contracts traded on that day.

**26)** The relationship between the price of the underlying stock, a call option, a put option, and a riskless asset is referred to as the \_\_\_\_\_ relationship.

26) \_\_\_\_\_\_

A) put-call parity   
 B) covered call  
 C) protective put  
 D) straddle  
 E) strangle

**27)** Given an exercise price, time to maturity, and European put-call parity, the present value of the strike price plus the price of the call option is equal to the:

27) \_\_\_\_\_\_

A) current market value of the stock.   
 B) present value of the stock minus the price of a put option.  
 C) price of a put option minus the market value of one share of stock.  
 D) value of a risk-free U.S. Treasury bill.  
 E) price of the stock plus the price of the put option.

**28)** Selling a covered call is equivalent to:

28) \_\_\_\_\_\_

A) buying a zero coupon bond and selling a put.   
 B) selling a put and buying an offsetting call.  
 C) buying the stock and selling the call.  
 D) selling a zero coupon bond and buying a put.  
 E) buying a zero coupon bond and buying a call.

**29)** An investor could realize the same value as that derived from stock ownership by:

29) \_\_\_\_\_\_

A) selling a put option and investing the proceeds at the risk-free rate of return.   
 B) buying a call option and writing a put option on a stock, and also borrowing funds at the risk-free rate.  
 C) selling a put, buying a call, and buying a zero-coupon bond.  
 D) lending out funds at the risk-free rate of return and selling a put option on the stock.  
 E) borrowing funds at the risk-free rate of return and investing the proceeds in equivalent amounts of put and call options.

**30)** Put-call parity can be used to show:

30) \_\_\_\_\_\_

A) how far in the money put options can be.   
 B) how far in the money call options can be.  
 C) the precise relationship between put and call prices given equal exercise prices and equal expiration dates.  
 D) that the value of a call option is always twice that of a put given equal exercise prices and equal expiration dates.  
 E) that the value of a call option is always half that of a put given equal exercise prices and equal expiration dates.

**31)** Which combination is referred to as a protective put? Assume all sales and purchases refer to a particular stock and its option contract.

31) \_\_\_\_\_\_

A) Buying 100 shares of stock and writing one put option contract   
 B) Selling a put option contract and buying an offsetting call option contract  
 C) Buying 300 shares of stock and selling three call option contracts  
 D) Buying a put option contract and buying 100 shares of stock  
 E) Buying a put option contract and selling a call option contract with the same strike price and expiration date

**32)** Assume you purchase one share of a stock and sell a call option on a single share of that same stock with an exercise price of $32. What is the maximum payoff you can realize on this combination?

32) \_\_\_\_\_\_

A) The exercise price of $32   
 B) An amount equal to the stock price on the option expiration date  
 C) An amount equal to $32 minus the stock price on the option expiration date  
 D) An amount equal to the stock price on the expiration date plus $32  
 E) Zero

**33)** Ramba announced a major discovery which caused both the price and volatility of its stock to increase. How will these two reactions affect the value of call options on this stock?

33) \_\_\_\_\_\_

A) Both reactions will decrease the value.   
 B) Both reactions increase the value.  
 C) Neither reaction will affect the value.  
 D) The reactions will have offsetting effects on the value.  
 E) The change in volatility will have no effect while the increased stock price will increase the value.

**34)** Flores Floral announces a major expansion which causes both the price of its stock and the volatility of the stock price to increase. How will these two reactions affect the value of put options on this stock?

34) \_\_\_\_\_\_

A) Both reactions will decrease the value.   
 B) Both reactions will increase the value.  
 C) Neither reaction will affect put option values.  
 D) The reactions will have offsetting effects on the value.  
 E) The change in volatility will have no effect while the increased stock price will decrease the value.

**35)** A trading opportunity that offers a riskless profit is called a(n):

35) \_\_\_\_\_\_

A) put option.   
 B) call option.  
 C) market equilibrium.  
 D) arbitrage.  
 E) cross-hedge.

**36)** The value of an option if it were to expire immediately, that is, its lower pricing bound, is called an option's \_\_\_\_\_ value.

36) \_\_\_\_\_\_

A) strike   
 B) market  
 C) volatility  
 D) time  
 E) intrinsic

**37)** The maximum value of a call option is equal to the:

37) \_\_\_\_\_\_

A) strike price minus the initial cost of the option.   
 B) exercise price plus the price of the underlying stock.  
 C) strike price.  
 D) price of the underlying stock.  
 E) purchase price.

**38)** The lower bound on a call’s value is defined as the:

38) \_\_\_\_\_\_

A) greater of the strike price or zero.   
 B) greater of the stock price minus the exercise price or zero.  
 C) lesser of the strike price or the stock price.  
 D) lesser of the strike price or zero.  
 E) lesser of the stock price minus the exercise price or zero.

**39)** The lower bound of a call option’s value:

39) \_\_\_\_\_\_

A) can be a negative value regardless of the stock or exercise prices.   
 B) can be a negative value but only when the exercise price exceeds the stock price.  
 C) can be a negative value but only when the stock price exceeds the exercise price.  
 D) must be greater than zero.  
 E) can be equal to zero.

**40)** The intrinsic value of a call equals the:

40) \_\_\_\_\_\_

A) exercise price minus the stock price.   
 B) upper bound of the call’s value.  
 C) market price of the call option.  
 D) lower bound of the call’s value.  
 E) premium paid to purchase the call.

**41)** The intrinsic value of a put is equal to the:

41) \_\_\_\_\_\_

A) lesser of the strike price or the stock price.   
 B) lesser of the stock price minus the exercise price or zero.  
 C) lesser of the stock price or zero.  
 D) greater of the strike price minus the stock price or zero.  
 E) greater of the stock price minus the exercise price or zero.

**42)** Which one of the following statements is correct concerning in-the-money option values?

42) \_\_\_\_\_\_

A) The value of a put decreases as the exercise price increases.   
 B) The value of a put increases as the price of the underlying stock increases.  
 C) The value of a call decreases as the exercise price increases.  
 D) An increase in the underlying stock price decreases both the value of a put and a call.  
 E) The value of a call decreases as the price of the underlying stock increases.

**43)** All else held constant, the value of a call decreases when the:

43) \_\_\_\_\_\_

A) time to expiration increases.   
 B) risk-free rate of return increases.  
 C) stock price increases.  
 D) exercise price increases.  
 E) volatility of the price of the underlying stock increases.

**44)** Which one of the following events will cause the value of a call to decrease?

44) \_\_\_\_\_\_

A) Lowering the exercise price   
 B) Increasing the time to expiration  
 C) Increasing the risk-free rate  
 D) Lowering the risk level of the underlying security  
 E) Increasing the stock price

**45)** Assume you own both a May 40 put and a May 40 call on Heartfelt stock. Which one of the following statements is correct concerning your option positions? Ignore taxes and transaction costs.

45) \_\_\_\_\_\_

A) An increase in the stock price will increase the value of your put and decrease the value of your call.   
 B) Both a May 45 put and a May 45 call will have higher values than your May 40 options.  
 C) The time premiums on both your put and call are less than the time premiums on equivalent June options.  
 D) A decrease in the stock price will decrease the value of both of your options.  
 E) You can never profit on your positions as your profits on one option will be offset by losses on the other option.

**46)** You own both a May 20 call and a May 20 put. If the call finishes in the money, then the put will:

46) \_\_\_\_\_\_

A) also finish in the money.   
 B) finish at the money.  
 C) finish out of the money.  
 D) either finish at the money or in the money.  
 E) either finish at the money or out of the money.

**47)** An increase in the \_\_\_\_\_\_\_\_ will decrease the value of a call option.

47) \_\_\_\_\_\_

A) interest rate   
 B) exercise price  
 C) time to expiration  
 D) stock volatility  
 E) underlying asset price

**48)** The option \_\_\_\_\_\_\_\_ is the effect on an option’s value caused by a small change in the value of the underlying asset.

48) \_\_\_\_\_\_

A) theta   
 B) vega  
 C) rho  
 D) delta  
 E) gamma

**49)** In the Black-Scholes option pricing formula, N(*d*1) is the probability that a standardized, normally distributed random variable is:

49) \_\_\_\_\_\_

A) less than or equal to N(*d*2).   
 B) less than one.  
 C) equal to one.  
 D) equal to *d*1.  
 E) less than or equal to *d*1.

**50)** The Black-Scholes option pricing model is dependent on which five parameters?

50) \_\_\_\_\_\_

A) Stock price, exercise price, risk-free rate, probability of occurrence, and time to expiration   
 B) Stock price, risk-free rate, probability of occurrence, time to maturity, and variance of the underlying asset  
 C) Stock price, risk-free rate, probability of occurrence, variance of the underlying asset, and exercise price  
 D) Stock price, exercise price, risk-free rate, variance of the underlying asset, and time to expiration  
 E) Exercise price, probability of occurrence, stock price, variance of the underlying asset, and time to expiration

**51)** The delta of a call measures the:

51) \_\_\_\_\_\_

A) time remaining to expiration compared to the option’s original maturity.   
 B) change between an option’s original value and its current value.  
 C) change in the price of the call relative to the change in the underlying stock price.  
 D) ratio of the change in the option price to the change in the time to expiration.  
 E) volatility of the underlying security.

**52)** A firm has a pure discount loan with face value of $75,000 that is due in six months. The assets of the firm are currently worth $96,000. The stockholders in this firm basically own \_\_\_\_\_ options on the assets of the firm with a strike price of \_\_\_\_\_\_.

52) \_\_\_\_\_\_

A) put; $96,000   
 B) put; $75,000  
 C) warrant; $96,000  
 D) call; $96,000  
 E) call; $75,000

**53)** If the equity of a firm can be considered to be an option on the firm’s assets, then the act of paying off debt is comparable to \_\_\_\_\_ on the assets of the firm.

53) \_\_\_\_\_\_

A) purchasing a put option   
 B) purchasing a call option  
 C) exercising an in-the-money put option  
 D) exercising an in-the-money call option  
 E) selling a call option

**54)** When a firm implements a positive net present value project, the equity in the firm will experience the greatest possible increase if the delta of the call option on the firm’s assets is:

54) \_\_\_\_\_\_

A) equal to one.   
 B) between zero and one.  
 C) equal to zero.  
 D) between zero and minus one.  
 E) equal to minus one.

**55)** Assume a risky firm has both bondholders and stockholders. If the firm obtains a government loan guarantee on its existing debt, who will gain from this guarantee?

55) \_\_\_\_\_\_

A) Existing stockholders only   
 B) Both existing bondholders and stockholders in proportion to the firm’s debt-equity ratio  
 C) Existing bondholders and stockholders on an equal basis  
 D) Existing bondholders only  
 E) Future stockholders only

**56)** If you consider bondholders to be the owners of a firm, then those bondholders:

56) \_\_\_\_\_\_

A) own a call option on the firm with an exercise price equal to the firm’s total equity.   
 B) own a put option on the firm with an exercise price equal to the firm’s total debt.  
 C) have written a put option on the firm with an exercise price equal to the firm’s total equity.  
 D) have written a call option on the firm with an exercise price equal to the firm’s total debt.  
 E) own a put option on the firm with an exercise price equal to the firm’s total assets.

**57)** If you consider stockholders to be the owners of a firm, then those stockholders:

57) \_\_\_\_\_\_

A) own a call option on the firm with an exercise price equal to the firm's total equity.   
 B) own a put option on the firm with an exercise price equal to the firm's total debt.  
 C) have written a put option on the firm with an exercise price equal to the firm's total equity.  
 D) have written a call option on the firm with an exercise price equal to the firm's total debt.  
 E) own a put option on the firm with an exercise price equal to the firm’s total assets.

**58)** A purely financial merger:

58) \_\_\_\_\_\_

A) increases shareholder value but does not affect bondholders.   
 B) decreases both bondholder and shareholder values.  
 C) transfers bondholder value to shareholders.  
 D) increases bondholder value but does not affect shareholder value.  
 E) reduces shareholder value while increasing bondholder value.

**59)** Shareholders in a levered firm might wish to accept a negative net present value project if it:

59) \_\_\_\_\_\_

A) increases the standard deviation of the returns on the firm’s assets.   
 B) lowers the variance of the returns on the firm’s assets.  
 C) lowers the firm’s volatility.  
 D) diversifies the cash flows of the firm.  
 E) decreases the risk that a firm will default on its debt.

**60)** Alicia is considering purchasing a small building with the intent of opening a craft and sewing center. The cost of the building is $49,000 and the cost to open the center is an additional $150,000. If the center is opened and no other competition is nearby the project will provide a hefty return. However, should the vacant building down the street be used for a competitive type entity, then the center could be a losing proposition. Assume the building is purchased but the opening of the center is delayed. This situation would best be described as \_\_\_\_\_ on a craft and sewing center.

60) \_\_\_\_\_\_

A) purchasing a call option   
 B) writing a call option  
 C) purchasing a put option  
 D) writing a put option  
 E) exercising a call on the land and writing a put

**61)** You purchased six Framingham, Incorporated, call option contracts with a strike price of $42.25 when the option quote was $.62. The option expires today when the value of Framingham stock is $39.20. Ignoring trading costs and taxes, what is your total profit on your investment?

61) \_\_\_\_\_\_

A) $0   
 B) −$372  
 C) −$677  
 D) $305  
 E) −$305

**62)** You purchased eight Pangolin Corporation call options with a strike price of $30.00 at a quoted price of $.29. What is your total profit on this investment if the price of Pangolin is $32.40 on the option expiration date?

62) \_\_\_\_\_\_

A) −$232   
 B) $1,688  
 C) $1,920  
 D) $2,152  
 E) $232

**63)** You own two call option contracts on Jenieve Events stock with a strike price of $28. When you purchased the contracts the option price was $1.15 and the stock price was $28.20. What is the total intrinsic value of these options if Jenieve stock is currently selling for $27.80 per share?

63) \_\_\_\_\_\_

A) $40   
 B) $80  
 C) −$80  
 D) $0  
 E) −$30

**64)** Last week, you purchased one call option contract on Blakely stock with a strike price of $18.22 and an option price of $1.14. What is the intrinsic value per share of stock if Blakely is currently priced at $19.80?

64) \_\_\_\_\_\_

A) $1.58   
 B) $.44  
 C) $2.02  
 D) $2.46  
 E) $0

**65)** You purchased four SpeakerPro call option contracts with a strike price of $62 when the option was quoted at $2.98. The option expires today when the value of SpeakerPro stock is $64.60. Ignoring trading costs and taxes, what is your total profit on your investment?

65) \_\_\_\_\_\_

A) $0   
 B) −$1,192  
 C) $1,040  
 D) $1,192  
 E) −$152

**66)** You purchased three TranSport 16 call option contracts at a quoted price of $.11. What is your total profit on this investment if the price of TranSport is $15.75 on the option expiration date?

66) \_\_\_\_\_\_

A) −$33   
 B) −$108  
 C) −$75  
 D) $33  
 E) $75

**67)** Three weeks ago, you purchased a July put option with a strike price of $56.00 on CloudMaker stock at an option price of $2.90. The market price of CloudMaker stock three weeks ago was $52.60. Today, the stock is selling at $55.10 per share and the July 45 put is priced at $.78. What is the intrinsic value of your put contract?

67) \_\_\_\_\_\_

A) $0   
 B) $340  
 C) $90  
 D) $200  
 E) $250

**68)** You own ten put option contracts on RainTree stock with an exercise price of $25. What is the total intrinsic value of these contracts if RainTree stock is currently selling for $24.50 per share?

68) \_\_\_\_\_\_

A) −$500   
 B) −$50  
 C) $0  
 D) $50  
 E) $500

**69)** Three months ago, you purchased three put option contracts on Weatherwell stock with a strike price of $60 and an option price of $.60. The option expires today when the value of the stock is $48.10. Ignoring trading costs and taxes, what is your total profit on your investment?

69) \_\_\_\_\_\_

A) $180   
 B) $3,390  
 C) $60  
 D) $1,130  
 E) $1,090

**70)** Three months ago, you purchased a put option contract on ConnerCo stock with a strike price of $61 and an option price of $.60. The option expires today when the value of the stock is $63.50. Ignoring trading costs and taxes, what is your total profit on your investment?

70) \_\_\_\_\_\_

A) $310   
 B) −$60  
 C) $0  
 D) $60  
 E) −$190

**71)** You sold ten put option contracts on Preston Road stock with an exercise price of $31.20 and an option price of $1.20. Today, the option expires and the underlying stock is selling for $33 per share. Ignoring trading costs and taxes, what is your total profit on this investment?

71) \_\_\_\_\_\_

A) −$3,300   
 B) −$1,200  
 C) $120  
 D) $1,200  
 E) $3,300

**72)** You sold a put contract on De La Cruz stock at an option price of $.50 and an exercise price of $21. Today, the stock is selling for $20 per share and your option position was closed out. Ignoring transaction costs and taxes, what is your total profit?

72) \_\_\_\_\_\_

A) $50   
 B) $60  
 C) −$50  
 D) −$60  
 E) $0

**73)** You wrote ten call option contracts on Santiago stock with a strike price of $41 and an option price of $.60. What is your total profit on this investment if the price of the stock is $46.05 on the option expiration date?

73) \_\_\_\_\_\_

A) −$5,050   
 B) −$4,450  
 C) $4,100  
 D) $4,450  
 E) $5,050

**74)** You wrote ten put option contracts on Sun & Sand stock with a strike price of $40 and an option price of $.40. What is your total profit on this investment if the price of the stock is $41.05 on the option expiration date?

74) \_\_\_\_\_\_

A) $6,450   
 B) $5,650  
 C) $400  
 D) −$5,650  
 E) −$6,450

**75)** You sold ten put option contracts on SkyBoard stock with an exercise price of $32.50 and an option price of $1.10. Today, the option expires when the underlying stock is selling for $34.30 per share. Ignoring trading costs and taxes, what is your total profit on this investment?

75) \_\_\_\_\_\_

A) $2,900   
 B) −$1,100  
 C) $700  
 D) $1,100  
 E) −$2,900

**76)** You sold a put contract on Brusewitz, Incorporated, stock at an option price of $.25 and an exercise price of $22.50. The option expires today when the stock is selling for $21.70 per share. Ignoring transaction costs and taxes, what is your total profit on this investment?

76) \_\_\_\_\_\_

A) $105   
 B) −$55  
 C) −$25  
 D) $55  
 E) $0

**77)** What is the cost of four October 40 put option contracts on a stock given the following price quotes?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stock price $40.86** |  |  |  |  |  |
| **Expiration:** | **Strike** | **Call bid** | **Call ask** | **Put bid** | **Put ask** |
| **July** | 35 | 6.03 | 6.12 | 0 | 0 |
| **October** | 35 | 6.17 | 6.26 | 0 | 0 |
| **July** | 40 | 1.06 | 1.14 | .05 | .08 |
| **October** | 40 | 1.23 | 1.31 | .22 | .26 |
| **July** | 45 | 0 | 0 | 5.13 | 5.25 |
| **October** | 45 | 0 | 0 | 5.46 | 5.50 |

77) \_\_\_\_\_\_

A) $22   
 B) $26  
 C) $240  
 D) $88  
 E) $104

**78)** What is the value of one August 25 call option contract?

|  |  |  |  |
| --- | --- | --- | --- |
| **KNJ (KNJ)** | **Underlying stock price: 30.86** | | |
|  | **Call** | **Put** |
| **Expiration** | Strike | Last | Last |
| **August** | 25 | 6.15 | .05 |
| **November** | 25 | 6.60 | .10 |
| **August** | 35 | .10 | 4.60 |
| **November** | 35 | .70 | 5.10 |

78) \_\_\_\_\_\_

A) $4.60   
 B) $.10  
 C) $615  
 D) $10  
 E) $6.15

**79)** The market price of Pokkula Healthcare stock has been very volatile and you think this volatility will continue for several weeks. Thus, you decide to purchase one two-month call option contract on the stock with a strike price of $25 and an option price of $1.30. You also purchase one two-month put option on the stock with a strike price of $25 and an option price of $.50. What will be your total profit on these positions if the stock price is $25.60 on the day the options expire?

79) \_\_\_\_\_\_

A) −$180   
 B) −$120  
 C) $100  
 D) $120  
 E) $180

**80)** Several rumors concerning Cadence stock have started circulating. These rumors are causing the market price of the stock to become increasingly volatile. Given this situation, you decide to buy both a one-month put and a one-month call option on this stock with an exercise price of $15. You purchased the call at a quoted price of $.20 and the put at a price of $2.10. What will be your total profit on these option positions if the stock price is $6 on the day the options expire?

80) \_\_\_\_\_\_

A) $30   
 B) $670  
 C) $690  
 D) $710  
 E) $1,110

**81)** Universal Fence stock is selling for $41 per share. A 6-month call on the stock with a strike price of $45 is priced at $1.60. Risk-free assets are currently returning .15 percent per month. What is the price of a 6-month put on the stock with a strike price of $45?

81) \_\_\_\_\_\_

A) $5.53   
 B) $4.27  
 C) $5.20  
 D) $4.82  
 E) $4.90

**82)** Wayward Tours stock is selling for $32.60 per share. A 4-month call on the stock with a strike price of $35 is priced at $.55. Risk-free assets are currently returning .2 percent per month. What is the price of a 4-month put on the stock with a strike price of $35?

82) \_\_\_\_\_\_

A) $2.12   
 B) $2.32  
 C) $2.87  
 D) $2.73  
 E) $2.67

**83)** Sarwar Company stock has a current market price of $47.60 per share. The one-year call on this stock with a strike price of $45 is priced at $3.20 while the one-year put with a strike price of $45 is priced at $.15. What is the risk-free rate of return?

83) \_\_\_\_\_\_

A) 2.71%   
 B) 1.76%  
 C) 1.01%  
 D) 2.04%  
 E) 2.87%

**84)** The market price of Musa stock has been very volatile and you think this volatility will continue for a few weeks. Thus, you decide to purchase a one-month call option contract on this stock with a strike price of $25 and an option price of $1.50. You also purchase a one-month put option on this stock with a strike price of $25 and an option price of $.70. What will be your total profit on these option positions if the stock price is $24.60 on the day the options expire?

84) \_\_\_\_\_\_

A) −$180   
 B) −$140  
 C) −$100  
 D) $220  
 E) $140

**85)** Due to technological and market developments, the price of Atubo stock has become quite volatile. Given this, you decide to buy two one-month put option contracts and two one-month call option contracts on this stock with an exercise price of $15. You purchased the calls at a quoted price of $.40 and the puts at a price of $2.30. What will be your total profit on these positions if the stock price is $29 on the day the options expire?

85) \_\_\_\_\_\_

A) $1,890   
 B) $2,720  
 C) $2,260  
 D) $1,130  
 E) $1,360

**86)** You own a call option on Jasper Company stock that expires in one year. The exercise price is $35. The current price of the stock is $48 and the risk-free rate of return is 4.5 percent. Assume the option will finish in the money. What is the current value of the call option per share?

86) \_\_\_\_\_\_

A) $13.00   
 B) $13.59  
 C) $13.97  
 D) $14.51  
 E) $15.46

**87)** You currently own a one-year call option on Kang Company stock with a strike price of $20. The current stock price is $22.10 and the risk-free rate of return is 3.75 percent. If you assume the option finishes in the money, what is the current value of your call option per share?

87) \_\_\_\_\_\_

A) $2.02   
 B) $2.18  
 C) $1.76  
 D) $3.13  
 E) $2.82

**88)** The common stock of Climate Systems is selling for $28.97 per share while one-year U.S. Treasury securities are currently yielding 2.8 percent. What is the current value per share of a one-year call option on Climate Systems stock if the exercise price is $22.50 and you assume the option will finish in the money?

88) \_\_\_\_\_\_

A) $6.29   
 B) $6.40  
 C) $6.65  
 D) $7.67  
 E) $7.08

**89)** The common stock of Teak Design is currently priced at $52.50 per share. One year from now, the stock price is expected to be either $54 or $60 per share. The risk-free rate of return is 4 percent. What is the per share value of one call option on Teak stock with an exercise price of $55?

89) \_\_\_\_\_\_

A) $.39   
 B) $.41  
 C) $.45  
 D) $.48  
 E) $.51

**90)** You own one call option with an exercise price of $30 on Hable stock. This stock is currently selling for $27.80 per share but is expected to increase to either $28 or $34 per share over the next year. The risk-free rate of return is 5 percent. What is the current per share value of your option if it expires in one year?

90) \_\_\_\_\_\_

A) $.76   
 B) $.79  
 C) $.89  
 D) $.92  
 E) $.95

**91)** The assets of Concrete Value are currently worth $2,100. These assets are expected to be worth either $1,800 or $2,300 one year from now. The company has a pure discount bond outstanding with a $2,000 face value and a maturity date of one year. The risk-free rate is 5 percent. What is the value of the equity in this firm?

91) \_\_\_\_\_\_

A) $166.67   
 B) $231.43  
 C) $385.71  
 D) $405.00  
 E) $714.29

**92)** Vozza Development has a pure discount bond that comes due in one year and has a face value of $1,000. The risk-free rate of return is 4 percent. The assets of Vozza are expected to be worth either $800 or $1,300 in one year. Currently, these assets are worth $1,140. What is the current value of Vozza’s debt?

92) \_\_\_\_\_\_

A) $222.46   
 B) $370.77  
 C) $514.28  
 D) $769.23  
 E) $917.54

**93)** Baskar Consulting has total assets of $1,810. These assets are expected to increase in value to either $1,900 or $2,400 by next year. The company has a pure discount bond outstanding with a face value of $2,000. This bond matures in one year. Currently, U.S. Treasury bills are yielding 5.5 percent. What is the value of the equity in this firm?

93) \_\_\_\_\_\_

A) $6.98   
 B) $7.24  
 C) $6.67  
 D) $7.08  
 E) $7.89

**94)** What is the value of *d*2 given the following information?

|  |  |
| --- | --- |
| **Stock price** | $ 59 |
| **Exercise price** | $ 60 |
| **Time of expiration** | .50 |
| **Risk-free rate** | 4.5% |
| **Standard deviation** | 18% |
| ***d*1** | .108367 |

94) \_\_\_\_\_\_

A) .0133   
 B) −.0189  
 C) −.0460  
 D) .0867  
 E) −.0019

**95)** Given the following information, what is the value of *d*2 as it is used in the Black-Scholes model?

|  |  |
| --- | --- |
| **Stock price** | $ 36 |
| **Exercise price** | $ 40 |
| **Time of expiration** | .25 |
| **Risk-free rate** | 3.75% |
| **Standard deviation** | 26% |
| ***d*1** | −.673350 |

95) \_\_\_\_\_\_

A) .0216   
 B) −.8034  
 C) .1756  
 D) −.20021  
 E) .0251

**96)** What is the value of a call given the Black-Scholes model and the following information? Stock price = $44, Exercise price = $40, Time to expiration = .75, Risk-free rate = 4.5%, Standard deviation = 25%, N(*d*1) = .759395, and N(*d*2) = .687172.

96) \_\_\_\_\_\_

A) $2.03   
 B) $4.86  
 C) $6.84  
 D) $8.81  
 E) $9.27

**97)** Assume the delta of a call option on a firm’s assets is .608. This means a project valued at $65,000 will increase the value of the firm’s equity by:

97) \_\_\_\_\_\_

A) $27,902.   
 B) $39,520.  
 C) $43,820.  
 D) $63,131.  
 E) $89,600.

**98)** The current market value of the assets of Bui Partners is $91 million, with a standard deviation of 19 percent per year. The firm has zero coupon bonds outstanding with a total face value of $45 million. These bonds mature in 2 years. The risk-free rate is 4 percent per year compounded continuously. What is the value of *d*1?

98) \_\_\_\_\_\_

A) 3.05   
 B) 3.62  
 C) 2.48  
 D) 2.71  
 E) 3.46

**99)** The current market value of the assets of Williams & King is $86.28 million. The call option value on the firm’s assets is $53.09 million. What is the market value of the firm’s debt?

99) \_\_\_\_\_\_

A) $74.49 million   
 B) $31.36 million  
 C) $33.19 million  
 D) $44.08 million  
 E) $139.37 million

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.  
100)** Suppose your wealthy Aunt Destiny has asked you to manage her large stock portfolio. You would like to use options to increase her total return and also reduce her risks. Describe the types of options you would buy or sell, as well as your rationale, given the following circumstances:  
 a.Aunt Destiny owns 10,000 shares of a large oil company common stock. You believe the stock is overpriced, but she won't let you sell any shares because her late husband told her to never, ever sell any. How do you protect her from what you believe is an impending price decline?  
   
 b.Your analysis suggests that a technology stock is poised for a large price increase within the next year. Aunt Destiny won’t agree to spend the dollars required to obtain shares but has consented to allow you to spend some money on options but only because she trusts you. You don’t want to disappoint her. What should you do?

**101)** Suppose you look in the newspaper and see ABC trading at $50 per share. Calls on ABC with one month to expiration and an exercise price of $45 are trading at $6.50 each. Puts on ABC with one month to expiration and an exercise price of $55 are trading at $3.50 each. Are these prices reasonable? Explain. (Ignore transactions costs.)

**102)** Suppose XYZ is priced at $125 per share. The 150 call has six months to expiration and is quoted at $.05. Why do you suppose investors would be willing to purchase a call that is so far out of the money?

**103)** What are the upper and lower bounds of an American call option? Explain what would happen in each case if the bound was violated.

**104)** Explain the rationale behind the statement that equity is a call option on the firm’s assets. When would a shareholder allow the call to expire?

**105)** How do options apply to capital budgeting? Explain and provide an example.

**Answer Key**Test name: Chapter 22

1) A

2) B

3) C

4) D

5) A

6) E

7) E

8) D

9) B

10) C

11) D

12) B

13) A

14) A

15) C

16) C

17) B

18) A

19) C

20) C

21) E

22) D

23) D

24) E

25) E

26) A

27) E

28) A

29) C

30) C

31) D

32) A

33) B

34) D

35) D

36) E

37) D

38) B

39) E

40) D

41) D

42) C

43) D

44) D

45) C

46) C

47) B

48) D

49) E

50) D

51) C

52) E

53) D

54) A

55) D

56) D

57) B

58) E

59) A

60) A

61) B

You will not exercise the call option because the strike price is greater than the stock price. Why pay more than market price to purchase shares? Thus, your loss is equal to the amount paid to purchase the option contracts:  
   
 Total profit = 6(100)[−$.62 + MAX($39.20 − 42.25, 0)]  
 Total profit = −$372

62) B

Total profit = 8(100)[−$.29 + MAX($32.40 − 30, 0)]  
 Total profit = $1,688

63) D

Intrinsic value = Max($27.80 − 28, 0)  
 Intrinsic value = $0

64) A

Intrinsic value = Max($19.80 − 18.22, 0)  
 Intrinsic value = $1.58  
   
 The call is in the money.

65) E

Total profit = 4(100)[−$2.98 + MAX($64.60 − 62, 0)]  
 Total profit = −$152

66) A

Total profit = 3(100)[−$.11 + MAX($15.75 − 16, 0)]  
 Total profit = −$33  
   
 The option expires out of the money.

67) C

Contract intrinsic value = 1(100)[Max($56 − 55.10, 0)]  
 Contract intrinsic value = $90

68) E

Intrinsic value of contracts = 10(100)[Max($25 − 24.50, 0)]  
 Intrinsic value of contracts = $500

69) B

Total profit = 3(100)[−$.60 + MAX($60 − 48.10,0)]  
 Total profit = $3,390

70) B

Total profit = 1(100)[−$.60 + MAX($61 − 63.50,0)]  
 Total profit = −$60

71) D

Total profit = 10(100)[$1.20 + MIN($33 − 31.20, 0)]  
 Total profit = $1,200

72) C

Total profit = 1(100)[$.50 + MIN($20 − 21, 0)]  
 Total profit = −$50

73) B

Total profit = 10(100)[$.60 + MIN($41 − 46.05, 0)]  
 Total profit = −$4,450

74) C

The buyer of the put contracts will not exercise the options since the market price exceeds the strike price. Thus, your total profit equals the option premium you received as the option writer.  
   
 Total profit = 10(100)[$.40 + MIN($41.05 − 40.00, 0)]  
 Total profit = $400

75) D

Total profit = 10(100)[$1.10 + MIN($34.30 − 32.50,0)]  
 Total profit = $1,100

76) B

Total profit = 1(100)[$.25 + MIN($21.70 − 22.50,0)]  
 Total profit = −$55  
   
 When the put was exercised, you had to buy at $22.50 and could only resell at $21.70.

77) E

Cost = 4(100)($.26)  
 Cost = $104

78) C

Contract value = 1(100)($6.15)  
 Contract value = $615

79) B

Total profit = 1(100)(−$1.30 − 25 + 25.60) + 1(100)(−$.50)  
 Total profit = −$120

80) B

Total profit = 1(100)(−$.20) + 1(100)(−$2.10 − 6.00 + 15.00]  
 Total profit = $670

81) C

Using put-call parity:  
   
 *S* + *P* = *C* + PV(*E*)  
 *P* = $1.60 + ($45/1.00156) − $41  
 *P* = $5.20

82) E

Using put-call parity:  
   
 *S* + *P* = *C* + PV(*E*)  
 *P* = $.55 + ($35/1.0024) − $32.60  
 *P* = $2.67

83) C

*S* + *P* = *C* + PV(*E*)  
 $47.60 + .15 = $3.20 + $45/(1 + *r*)  
 *r* = .0101, or 1.01%

84) A

Total profit = 1(100)(−$1.50) + 1(100)(−$.70 + 25.00 − 24.60)  
 Total profit = −$180

85) C

Total profit = 2(100)(−$.40 − 15 + 29) + 2(100)(−$2.30)  
 Total profit = $2,260

86) D

*C*0 = $48 − $35/1.045  
 *C*0 = $14.51

87) E

*C*0 = $22.10 - $20/1.0375  
 *C*0 = $2.82

88) E

*C*0 = $28.97 − $22.50/1.028  
 *C*0 = $7.08

89) D

Delta = ($5 − 0)/($60 − 54)  
 Delta = .8333  
   
 Value of call = $52.50(.8333) − .8333($54/1.04)  
 Value of call = $.48

90) A

Delta = ($4 − 0)/($34 − 28)  
 Delta = .6667  
   
 Value of call = $27.80(.6667) − (.6667)($28/1.05)  
 Value of call = $.76

91) B

Delta = ($300 − 0)/($2,300 − 1,800)  
 Delta = .60  
   
 Equity is a call option on a firm’s assets, so:  
   
 Value of call = $2,100(.60) − (.60)($1,800/1.05)  
 Value of call = $231.43

92) E

Delta = ($300 − 0)/($1,300 − 800)  
 Delta = .60  
   
 Equity is a call option on a firm’s assets, so:  
   
 Value of call = $1,140(.60) − (.60)($800/1.04)  
 Value of call = $222.46  
   
 Value of debt = $1,140 − 222.46  
 Value of debt = $917.54

93) B

Delta = ($400 − 0)/($2,400 − 1,900)  
 Delta = .80  
   
 Equity is a call option on a firm's assets, so:  
   
 Value of call = $1,810(.80) − (.80)($1,900/1.055)  
 Value of call = $7.24

94) B

*d*2 = .108367 − (.18)(.5.5)  
 *d*2 = −.0189

95) B

*d*2= −.673350 − (.26)(.25.5)  
 *d*2= −.8034

96) C

Call price = ($44)(.759395) − ($40)(e−.045(.75))(.687172)  
 Call price = $6.84

97) B

Increase in equity value = $65,000(.608)  
 Increase in equity value = $39,520

98) A

*d*1 = {ln($91 million/$45 million) + [.04 + (.192/2)](2)}/[.19(2.5)]  
 *d*1 = 3.05

99) C

Market value of debt = $86.28 million − 53.09 million  
 Market value of debt = $33.19 million

100) a.Since you expect the stock to decline in value, you need a means of offsetting this potential loss. Assuming the market has not already priced in your expectation, you could buy puts now and then sell the puts prior to expiration. If your prediction is correct, you will earn a profit on the puts which will help offset the loss of value in the shares. If your prediction is incorrect and the stock increases in value, then you lose the option premium which will offset some of the gains in the stock value. You most likely would not want to write covered calls as you would risk the option being called if your prediction was incorrect and the stock rose in value.  
   
 b.In this case, you would probably buy calls and hope to sell them at a higher price later. You could also write puts, but you would risk being forced to buy shares at the exercise price and sell them at a lower market price. In the latter case, Aunt Destiny would not be happy with you.

101) The calls are okay since the intrinsic value of each is $5 and the calls are trading at a price greater than this. However, the intrinsic value of the puts is $5, but the put is trading at $3.50. Thus, you could engage in arbitrage by buying puts for $3.50 each, exercising and selling the shares at the exercise price of $55, and purchasing shares to cover the sale in the market at $50 each, netting a profit of $150 per option contract.

102) Options have both an intrinsic value and a time value. With six months left to maturity, there is a chance that the option could be in the money at some point during that time period. However, with the option premium only being $.05, investors aren’t overly confident the stock price will exceed $150 within the next six months.

103) The upper bound on a call is the stock price. If the call price exceeded the stock price, you would be paying more for the option to buy an asset than the asset itself costs. The lower bound: *C* = 0 if *S* − *E* < 0 and *C* = (*S* − *E*) if (*S* − *E*) > 0. In the first case, if the call exercise price exceeds the stock price, the call is out of the money and it will either be worthless or have a time premium. In the second case, if the call is in the money, the call must be worth at least the difference between the asset’s value and the exercise price. If the call was worth less than this value, rational investors would purchase calls, immediately exercise them, and then sell the stock at the current market price, completing an arbitrage. If the stock price equals the exercise price, then the call is at the money and will have a value of zero or an amount equal to the time premium.

104) The analogy only applies to levered firms. At maturity of the firm’s debt, the stockholders have the option to either 1) pay the debtholders the par value of their debt or 2) turn the firm’s assets over to the debtholders. If the firm’s assets are worth less than the par value of the debt, the stockholders will not exercise their call, that is, they will let the debtholders have the assets.

105) There are many ways options apply in capital budgeting. One example goes back to the value of the firm and the leverage in the capital structure. For a highly levered firm, equityholders could prefer a lower NPV, or even a negative NPV project to a higher NPV project due to the low level of equity interest in the firm as a whole. Options apply in capital budgeting in many other ways such as delaying a project or a portion thereof, abandoning the project if it appears to be unsuccessful, or expanding the project if it is successful. While these particular options may not have been discussed in the chapter, you should realize that any option that provides flexibility increases the value of the project to the stockholders.