Review Test Submission: Module 8 Self Check Quiz

User	IAN MICHAEL MCGROARTY
Course	EN.555.644.81.FA19 Introduction to Financial Derivatives
Test	Module 8 Self Check Quiz
Started	10/21/19 10:37 AM
Submitted	10/21/19 4:05 PM
Status	Completed
Attempt Score	0 out of 0 points
Time Elapsed	5 hours, 27 minutes
Results Displayed	All Answers, Submitted Answers, Correct Answers, Feedback, Incorrectly Answered Questions

Question 1

0 out of 0 points

Which of the following describes a call option?

Selected Answer: [None Given]

Answers:
- A. The right to buy an asset for a certain price.
- B. The obligation to buy an asset for a certain price.
- C. The right to sell an asset for a certain price.
- D. The obligation to sell an asset for a certain price.

Response Feedback: Incorrect. A call option is the right, but not the obligation to buy.

Question 2

0 out of 0 points

Which of the following is true?

Selected Answer: D. None of the above

Answers:
- A. A long call is the same as a short put.
- B. A short call is the same as a long put.
- C. A call on a stock plus a stock the same as a put.

D. None of the above

Response Feedback: Correct. None of the statements are true. Long calls, short calls, long puts, and short puts all have different payoffs as indicated by Figure 10.5. A put on a stock plus the stock provides a payoff that is similar to a call, as explained in Chapters 11 and 12. But a call on a stock plus a stock does not provide a similar payoff to a put.

Question 3

0 out of 0 points

An investor has exchange-traded put options to sell 100 shares for $20. There is a 2 for 1 stock split. Which of the following is the position of the investor after the stock split?

Selected Answer: C. Put options to sell 200 shares for $10

Answers:
A. Put options to sell 100 shares for $20
B. Put options to sell 100 shares for $10
C. Put options to sell 200 shares for $10
D. Put options to sell 200 shares for $20

Response Feedback: Correct. When there is a stock split the number of shares increases and the strike price decreases. In this case, because it is a 2 for 1 stock split, the number of shares doubles and the strike price halves.

Question 4

0 out of 0 points

An investor has exchange-traded put options to sell 100 shares for $20. There is 25% stock dividend. Which of the following is the position of the investor after the stock dividend?

Selected Answer: D. Put options to sell 125 shares for $16

Answers:
A. Put options to sell 100 shares for $20
B. Put options to sell 75 shares for $25
C. Put options to sell 125 shares for $15
D. Put options to sell 125 shares for $16

Response Feedback: Correct. The stock dividend is equivalent to a 5 for 4 stock split. The number of shares goes up by 25% and the strike price is reduced to 4/5 of its previous value.

Question 5

0 out of 0 points

An investor has exchange-traded put options to sell 100 shares for $20. There is a $1 cash dividend. Which of the following is then the position of the investor?

Selected Answer: A. The investor has put options to sell 100 shares for $20

Answers: A. The investor has put options to sell 100 shares for $20

B. The investor has put options to sell 100 shares for $19

C. The investor has put options to sell 105 shares for $19

D. The investor has put options to sell 105 shares for $19.05

Response Feedback: Correct. Cash dividends unless they are unusually large have no effect on the terms of an option.

Question 6

0 out of 0 points

Which of the following describes a short position in an option?

Selected Answer: D. A position where an option has been sold

Answers: A. A position in an option lasting less than one month

B. A position in an option lasting less than three months

C. A position in an option lasting less than six months

D. A position where an option has been sold

Response Feedback: Correct. A short position is a position where the option has been sold (the opposite to a long position).

Question 7

0 out of 0 points

Which of the following describes a difference between a warrant and an exchange-traded stock option?

Selected Answer: B. The number of warrants is fixed whereas the number of exchange-traded options in existence depends on trading

Answers: A. In a warrant issue, someone has guaranteed the performance of the option seller in the event that the option is exercised

B. The number of warrants is fixed whereas the number of exchange-traded options in existence depends on trading

C. Exchange-traded stock options have a strike price

D. Warrants cannot be traded after they have been purchased

Response Feedback: Correct. A warrant is a fixed number of options issued by a company. They often trade on an exchange after they have been issued.

Question 8

0 out of 0 points

Which of the following describes LEAPS?

Selected Answer: ✔ C. Exchange-traded stock options with longer lives than regular exchange-traded stock options

Answers:
A. Options which are partly American and partly European

B. Options where the strike price changes through time

✔ C. Exchange-traded stock options with longer lives than regular exchange-traded stock options

D. Options on the average stock price during a period of time

Response Feedback: Correct. LEAPS are long-term equity anticipation securities. They are exchange-traded options with relatively long maturities.

Question 9

0 out of 0 points

Which of the following is an example of an option class?

Selected Answer: ✘ D. All calls with a particular time to maturity and strike price on a certain stock

Answers:
✔ A. All calls on a certain stock

B. All calls with a particular strike price on a certain stock

C. All calls with a particular time to maturity on a certain stock

D. All calls with a particular time to maturity and strike price on a certain stock

Response Feedback: Incorrect. An option class is all calls on a certain stock or all puts on a certain stock.

Question 10

0 out of 0 points

Which of the following is an example of an option series?

Selected Answer: ✘ B. All calls with a particular strike price on a certain stock

Answers:
A. All calls on a certain stock

B. All calls with a particular strike price on a certain stock

C. All calls with a particular time to maturity on a certain stock

✔ D.

All calls with a particular time to maturity and strike price on a certain stock

Response Feedback: Incorrect. All options on a certain stock of a certain type (calls or put) with a certain strike price and time to maturity are referred to as an option series.

Question 11

0 out of 0 points

Which of the following must post margin?

Selected Answer: A. The seller of an option

Answers: A. The seller of an option

B. The buyer of an option

C. The seller and the buyer of an option

D. Neither the seller nor the buyer of an option

Response Feedback: Correct. The seller of the option must post margin as a guarantee that the payoff on the option (if there is one) will be made. The buyer of the option usually pays for the option upfront and so no margin is required.

Question 12

0 out of 0 points

Which of the following describes a long position in an option?

Selected Answer: C. A position where an option has been purchased.

Answers: A. A position where there is more than one year to maturity.

B. A position where there is more than five years to maturity.

C. A position where an option has been purchased.

D. A position that has been held for a long time.

Response Feedback: Correct. A long position is a position where an option has been purchased. It can be contrasted with a short position which is a position where an option has been sold.

Question 13

0 out of 0 points

Which of the following is NOT traded by the CBOE?

Selected Answer: B. Monthly

Answers: A. Weekly

B. Monthly

C. Binary options

D. DOOM options

Response Feedback: Correct. Monthlys are not a CBOE product. The others are.

Question 14

0 out of 0 points

When a six-month option is purchased

Selected Answer: C. Up to 50% of the option price can be borrowed using a margin account

Answers: A. The price must be paid in full

B. Up to 25% of the option price can be borrowed using a margin account

C. Up to 50% of the option price can be borrowed using a margin account

D. Up to 75% of the option price can be borrowed using a margin account

Response Feedback: Incorrect. Only options lasting more than 9 months can be bought on margin.

Question 15

0 out of 0 points

Which of the following are true for CBOE stock options?

Selected Answer: B. The initial margin and maintenance margin are determined by formulas and are equal

Answers: A. There are no margin requirements

B. The initial margin and maintenance margin are determined by formulas and are equal

C. The initial margin and maintenance margin are determined by formulas and are different

D. The maintenance margin is usually about 75% of the initial margin

Response Feedback: Correct. Margin accounts for options must be brought up to the initial/maintenance margin level every day.

Question 16

0 out of 0 points

The price of a stock is $67. A trader sells 5 put option contracts on the stock with a strike price of $70 when the option price is $4. The options are exercised when the stock price is $69. What is the trader's net profit or loss?

Selected Answer: C. Gain of $1,500

Answers:
A. Loss of $1,500
B. Loss of $500
C. Gain of $1,500
D. Loss of $1,000

Response Feedback: Correct. The option payoff is 70−69 = $1. The amount received for the option is $4. The gain is $3 per option. In total 5×100 = 500 options are sold. The total gain is therefore $3 × 500 = $1,500.

Question 17

0 out of 0 points

A trader buys a call and sells a put with the same strike price and maturity date. What is the position equivalent to?

Selected Answer: C. Buying the asset

Answers:
A. A long forward
B. A short forward
C. Buying the asset
D. None of the above

Response Feedback: Incorrect. From adding up the two payoffs we see that A is true: $\max(S_T-K,0)-\max(K-S_T,0)= S_T-K$

Question 18

0 out of 0 points

The price of a stock is $64. A trader buys 1 put option contract on the stock with a strike price of $60 when the option price is $10. When does the trader make a profit?

Selected Answer: D. When the stock price is below $50

Answers:
A. When the stock price is below $60
B. When the stock price is below $64
C. When the stock price is below $54
D. When the stock price is below $50

Response Feedback: Correct. The payoff must be more than the $10 paid for the option. The stock price must therefore be below $50.

Question 19

0 out of 0 points

Consider a put option and a call option with the same strike price and time to maturity. Which of the following is true?

Selected Answer: D. One of the options must be either in the money or at the money

Answers:
A. It is possible for both options to be in the money
B. It is possible for both options to be out of the money
C. One of the options must be in the money
D. One of the options must be either in the money or at the money

Response Feedback: Correct. If the stock price is greater than the strike price the call is in the money and the put is out of the money. If the stock price is less than the strike price the call is out of the money and the put is in the money. If the stock price is equal to the strike price both options are at the money.

Question 20

0 out of 0 points

In which of the following cases is an asset NOT considered constructively sold?

Selected Answer: B. The owner buys an in-the-money put option on the asset

Answers:
A. The owner shorts the asset
B. The owner buys an in-the-money put option on the asset
C. The owner shorts a forward contract on the asset
D. The owner shorts a futures contract on the stock

Response Feedback: Correct. Profits on the asset have to be recognized in A, C, and D. The holder of the asset cannot defer recognition of profits with the trades indicated. In the case of B the asset is not considered constructively sold. Buying a deep-in-the-money put option is a way of almost certainly locking in a profit on an asset without triggering an immediate tax liability.

Question 21

0 out of 0 points

When the stock price increases with all else remaining the same, which of the following is true?

Selected Answer: C. Calls increase in value while puts decrease in value

Answers:
A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Response

Feedback: Correct. Stock price increases cause the values of calls to increase and the values of puts to decline.

Question 22

0 out of 0 points

When the strike price increases with all else remaining the same, which of the following is true?

Selected Answer: D. Puts increase in value while calls decrease in value

Answers:
A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Response Feedback: Correct. Strike price increases cause the values of puts to increase and the values of calls to decline.

Question 23

0 out of 0 points

When volatility increases with all else remaining the same, which of the following is true?

Selected Answer: A. Both calls and puts increase in value

Answers:
A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Response Feedback: Correct. Volatility increases the likelihood of a high payoff from either a call or a put option. The payoff can never be negative. It follows that as volatility increases the value of all options increase.

Question 24

0 out of 0 points

When dividends increase with all else remaining the same, which of the following is true?

Selected Answer: D. Puts increase in value while calls decrease in value

Answers:
A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Response Feedback: Correct. Dividends during the life of an option reduce the final stock price. As a result dividend increases cause puts to increase in value and calls to decrease in value.

Question 25

0 out of 0 points

When interest rates increase with all else remaining the same, which of the following is true?

Selected Answer: C. Calls increase in value while puts decrease in value

Answers:
A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Response Feedback: Correct. Calls increase and puts decrease in value. As explained in the text an increase in interest rates causes the growth rate of the stock price to increase and the discount rate to increase. An increase in interest rates therefore reduces the value of puts because puts are hurt by both a discount rate increase and a growth rate increase. For calls it turns out that the growth rate increase is more important than the discount rate increase so that their values increase when interest rates increase. (Note that we are assuming all else equal and so the asset price does not change.)

Question 26

0 out of 0 points

When the time to maturity increases with all else remaining the same, which of the following is true?

Selected Answer: D. European options are liable to increase or decrease in value

Answers:
A. European options always increase in value
B. The value of European options either stays the same or increases
C. There is no effect on European option values
D. European options are liable to increase or decrease in value

Response Feedback: Correct. When the time to maturity increases from X to Y, European options usually increase in value. But they can decrease in value if a big dividend expected between X and Y.

Question 27

0 out of 0 points

The price of a stock, which pays no dividends, is $30 and the strike price of a one year European call option on the stock is $25. The risk-free rate is 4% (continuously compounded). Which of

the following is a lower bound for the option such that there are arbitrage opportunities if the price is below the lower bound and no arbitrage opportunities if it is above the lower bound?

Selected Answer: B. $5.98

Answers:
A. $5.00
B. $5.98
C. $4.98
D. $3.98

Response Feedback: Correct. The lower bound in $S_0 - Ke^{-rT}$. In this case it is $30 - 25e^{-0.04\times1} = \$5.98$.

Question 28

0 out of 0 points

A stock price (which pays no dividends) is $50 and the strike price of a two year European put option is $54. The risk-free rate is 3% (continuously compounded). Which of the following is a lower bound for the option such that there are arbitrage opportunities if the price is below the lower bound and no arbitrage opportunities if it is above the lower bound?

Selected Answer: D. $0.86

Answers:
A. $4.00
B. $3.86
C. $2.86
D. $0.86

Response Feedback: Correct. The lower bound in $Ke^{-rT} - S_0$ In this case it is $54e^{-0.03\times2} - 50 = \$0.86$.

Question 29

0 out of 0 points

Which of the following is NOT true? (Present values are calculated from the end of the life of the option to the beginning.)

Selected Answer: B.
A European put option is always worth less than the present value of the strike price

Answers:
A.
An American put option is always worth less than the present value of the strike price

B.
A European put option is always worth less than the present value of the strike price

C. A European call option is always worth less than the stock price

D. An American call option is always worth less than the stock price

Response Feedback: Incorrect. If it is optimal to exercise an American option today and the stock price is very low the option will be worth more than the present value of the strike price

Question 30

0 out of 0 points

Which of the following best describes the intrinsic value of an option?

Selected Answer: A. The value it would have if the owner had to exercise it immediately or not at all

Answers:
A. The value it would have if the owner had to exercise it immediately or not at all

B. The Black-Scholes-Merton price of the option

C. The lower bound for the option's price

D. The amount paid for the option

Response Feedback: Correct. The intrinsic value of an option is the value it would have if it were about the expire which is the same as the value in A.

Question 31

0 out of 0 points

Which of the following describes a situation where an American put option on a stock becomes more likely to be exercised early?

Selected Answer: A. Expected dividends increase

Answers:
A. Expected dividends increase

B. Interest rates decrease

C. The stock price volatility decreases

D. All of the above

Response Feedback: Incorrect. As the volatility of the option decreases the time value declines and the option becomes more likely to be exercised early. In the case of A and B, time value increases and the option is less likely to be exercised early.

Question 32

0 out of 0 points

Which of the following is true?

Selected Answer: B.
An American call option on a stock should never be exercised early when no dividends are expected

Answers: A. An American call option on a stock should never be exercised early

B.
An American call option on a stock should never be exercised early when no dividends are expected

C.
There is always some chance that an American call option on a stock will be exercised early

D.
There is always some chance that an American call option on a stock will be exercised early when no dividends are expected

Response Feedback: Correct. An American call option should never be exercised early when the underlying stock does not pay dividends. There are two reasons. First, it is best to delay paying the strike price. Second the insurance provided by the option (that the stock price will fall below the strike price) is lost.

Question 33

0 out of 0 points

Which of the following is the put-call parity result for a non-dividend-paying stock?

Selected Answer: D.
The European put price plus the stock price must equal the European call price plus the present value of the strike price

Answers: A.
The European put price plus the European call price must equal the stock price plus the present value of the strike price

B.
The European put price plus the present value of the strike price must equal the European call price plus the stock price

C.
The European put price plus the stock price must equal the European call price plus the strike price

D.
The European put price plus the stock price must equal the European call price plus the present value of the strike price

Response Feedback: Correct. The put-call parity result is $c+Ke^{-rT}=p+S_0$.

Question 34

0 out of 0 points

Which of the following is true when dividends are expected?

Selected Answer: ✗ C.
The basic put-call parity formula can be adjusted by adding the present value of expected dividends to the stock price

Answers:
A. Put-call parity does not hold

✓ B.
The basic put-call parity formula can be adjusted by subtracting the present value of expected dividends from the stock price

C.
The basic put-call parity formula can be adjusted by adding the present value of expected dividends to the stock price

D.
The basic put-call parity formula can be adjusted by subtracting the dividend yield from the interest rate

Response Feedback: Incorrect. Put call parity still holds for European options providing the present value of the dividends is subtracted from the stock price.

Question 35

0 out of 0 points

The price of a European call option on a non-dividend-paying stock with a strike price of $50 is $6. The stock price is $51, the continuously compounded risk-free rate (all maturities) is 6% and the time to maturity is one year. What is the price of a one-year European put option on the stock with a strike price of $50?

Selected Answer: ✗ A. $9.91

Answers:
A. $9.91

B. $7.00

C. $6.00

✓ D. $2.09

Response Feedback: Incorrect. Put-call parity is $c+Ke^{-rT}=p+S_0$. In this case K=50, S_0=51, r=0.06, T=1, and c=6. It follows that $p=6+50e^{-0.06\times1}-51 = 2.09$.

Question 36

0 out of 0 points

The price of a European call option on a stock with a strike price of $50 is $6. The stock price is $51, the continuously compounded risk-free rate (all maturities) is 6% and the time to maturity is one year. A dividend of $1 is expected in six months. What is the price of a one-year European put option on the stock with a strike price of $50?

Selected Answer: ✗ A. $8.97

Answers:
A. $8.97

B. $6.97

C. $3.06

D. $1.12

Response Feedback: Incorrect. Put-call parity is $c+Ke^{-rT}=p+S_0$. In this case K=50, S_0=51, r=0.06, T=1, and c=6. The present value of the dividend is $1\times e^{-0.06\times 0.5} = 0.97$. It follows that $p=6+50e^{-0.06\times 1}-(51-0.97) = 3.06$.

Question 37

0 out of 0 points

A European call and a European put on a stock have the same strike price and time to maturity. At 10:00am on a certain day, the price of the call is $3 and the price of the put is $4. At 10:01am news reaches the market that has no effect on the stock price or interest rates, but increases volatilities. As a result the price of the call changes to $4.50. Which of the following is correct?

Selected Answer: C. The put price increases to $5.50

Answers:

A. The put price increases to $6.00

B. The put price decreases to $2.00

C. The put price increases to $5.50

D. It is possible that there is no effect on the put price

Response Feedback: Correct. The price of the call has increased by $1.50. From put-call parity the price of the put must increase by the same amount. Hence the put price will become 4.00 +1.50 = $5.50.

Question 38

0 out of 0 points

Interest rates are zero. A European call with a strike price of $50 and a maturity of one year is worth $6. A European put with a strike price of $50 and a maturity of one year is worth $7. The current stock price is $49. Which of the following is true?

Selected Answer: A. The call price is high relative to the put price

Answers:

A. The call price is high relative to the put price

B. The put price is high relative to the call price

C. Both the call and put must be mispriced

D. None of the above

Response Feedback: Incorrect. In this case because interest rates are zero $c+K=p+S_0$. The left side of this equation is 50+6=56. The right side is 49+7=56. There is no mispricing.

Question 39

0 out of 0 points

Which of the following is true for American options?

Selected Answer: A.
Put-call parity provides an upper and lower bound for the difference between call and put prices

Answers: A.
Put-call parity provides an upper and lower bound for the difference between call and put prices

B.
Put call parity provides an upper bound but no lower bound for the difference between call and put prices

C.
Put call parity provides an lower bound but no upper bound for the difference between call and put prices

D. There are no put-call parity results

Response Feedback: Correct. Put call parity provides both an upper and lower bound for the difference between call and put prices. See equation (11.11).

Question 40

0 out of 0 points

Which of the following can be used to create a long position in a European put option on a stock?

Selected Answer: C. Sell a call option on the stock and buy the stock

Answers: A. Buy a call option on the stock and buy the stock

B. Buy a call on the stock and short the stock

C. Sell a call option on the stock and buy the stock

D. Sell a call option on the stock and sell the stock

Response Feedback: Incorrect. As payoff diagrams show a call on a stock combined with a short position in the stock gives a payoff similar to a put option. Alternatively we can use put-call parity, which shows that a call minus the stock equals the put minus the present value of the strike price.

Wednesday, November 27, 2019 7:31:56 PM EST

← OK