Financial Derivatives
Questions

Question 1

The buyer of a call option will benefit most if:

a. The stock price rises significantly.
b. The stock price falls significantly.
c. The stock price is unchanged.
d. It depends on whether the option is in- or out-of-the money.

Question 2

Which of the following is a characteristic of a forward contract?

a. Money changes hands at the initiation of the contract.
b. Forward contracts are traded on the exchange.
c. Both contract parties face illiquid and credit risk.
d. The contract is marked to market on a daily basis.

Question 3

Which of the following is a characteristic of futures contracts?

a. Similar to forward contracts, they are traded over-the-counter.
b. Contract terms are unique to the needs of both parties.
c. All counterparties to a futures trade must post margin.
d. Marking to market is an option both parties agree to.

Question 4

An arbitrage opportunity is best described as:

a. A moderate to high risk strategy to make a profit.
b. Available in both “efficient” and “inefficient” markets.
c. The ability to make a profit without requiring any net investment.
d. Exploitable when the price of any financial asset is rational.

Question 5

Which of the following is a characteristic of derivative markets?

a. Speculation and hedging within the derivative markets allow for the shifting of price risk.
b. It is harder to enter into short derivative positions than it is to enter short cash positions.
c. Short hedges are used to reduce the risk associated with possible price changes in assets that one is planning to acquire.
d. They offer trading efficiencies even though the costs of trading derivatives themselves are relatively high.

Question 6

A derivative instrument is defined as:

a. An instrument whose value depends on the price of some other underlying commodity, security or index.

b. A contract or agreement between counterparties which is used to increase the risk characteristics of an asset (s) (portfolios).
c. A riskless vehicle used primarily for hedging and speculative purposes.
d. A highly regulated investment vehicle with relatively low trading costs.

Question 7

The primary distinction between a speculator and a hedger in futures contracts is:
a. The speculator does not have sufficient cash on hand to purchase the underlying asset, the hedger does.
b. The speculator seeks to earn a profit on the position, the hedger does not.
c. A true hedge will only involve short future's positions.
d. A hedge position will benefit if prices fall but has no effect if prices rise, while speculation has a symmetrical payout.

Question 8

A futures strategy generally used when a market participant expects to acquire an asset in the future but is concerned that the asset's price might rise before the asset is received is called:
a. An arbitrage strategy.
b. A short hedge.
c. A speculation.
d. A long hedge.

Question 9

Which of the following statements correctly represents the positions of the parties to a derivatives contract?
a. A forward contract imposes an obligation on the seller but not the buyer.
b. A call option imposes an obligation on the buyer to buy the underlying security.
c. A put option provides the seller with the right to buy the underlying security if the put is exercised.
d. Both a put and a call writer have an obligation to honor the terms of the option.

Question 10

Briefly define the concept of time value of a call option, and explain why the time value of a call option is always greater than zero?

Question 11

An investor is considering stock options with three-month expiration. If she believes stock prices will not change for the next three months, to maximize profit she should:
a. Buy a call option.
b. Buy a call and sell a put option
c.. Sell a put and sell a call option
d. Buy a put option?

Question 12

An investor purchased 1,000 three months put options with a strike price equal to £65 at a premium of £3.75. The investor purchased 1,000 shares of the underlying stock at £67.8. The short-term risk-free interest rate is 4% annum.

a. Calculate the maximum profit and loss.

b. Determine the breakeven point.

Question 13

A nine-month call option on ABC Inc. stock (priced at $55) has a strike price of $51 and an option market price of $5.25. What is the intrinsic value of the call and time value of the call?

	Intrinsic Value	**Time Value**
a.	$4.00	$1.25
b.	$5.25	$4.00
c.	$1.25	$4.00
d.	$4.00	5.25

Question 14

An investor purchases a 3-month put option, which has a strike price of $30 and an option market price of $0.50, when the stock is initially priced at $31.50 per share. If the stock's price is $27 when the option expires, what is the expiration-day value of the put?

Question 15

Let c_0 and p_0 represent prices, respectively, for a European call and put with the same strike (X) and time to expiration (T_0) on the same underlying asset with price S_0. If r is the risk-free rate, which equation below represents put-call parity?

a. $S_0-C_0 = X/(1+r)^T-P_0$

b. $S_0+C_0-P_0= X/(1+r)^T$

c. $S_0- X/(1+r)^T= C_0+P_0$

d. $0 = S_0+C_0-P_0- X/(1+r)^T$

Question 16

A non-dividend paying stock is selling for $120 and the risk-free interest rate is 3%. A six-month European call option on the stock with a strike of $110 is trading at $13.90. A six-month European put with a strike of $110 is trading at $2.29. Are these securities properly priced?

a. No, the put should have a higher price.

b. Yes.

c. No, the call is priced too low.

d. No, both the call and the put should have a higher price.

Question 17

A non-dividend paying stock is selling for $3.95 and the risk-free interest rate is 1%. A three-month European call option with a strike price of $4.00 is selling for $0.35. A three-month European put option with a strike of $4.00 is trading at $0.50. What would an arbitrageur do?

a. Buy the stock and the put, sell the call and borrow $3.99 for three months.

b. Nothing, the securities are properly priced.
c. Sell the stock and the put, buy the call and a bond that pays $4.00 in three months.
d. Buy the put and the call, sell the stock and lend $3.99 for three-months.

Question 18

What is the lower bound for the price of a six-month American call option with a strike of $50 on a non-dividend paying stock? Assume the current stock price is $55 and the risk-free interest rate is 3% per year.
a. $6.46
b. $5.73
c. $5.00
d. $0.00

Question 19

Assuming the current stock price is$29.75 and the risk-free interest rate is 8% per year, what is the lower bound for the price of a nine-month out-of-the-money European call option with a strike price of $30 on a non-dividend paying stock?
a. $1.97
b. $1.43
c. $0.00
d. -$0.25

Question 20

Consider two European put options on an underlying asset. The options are identical except that one has a longer time to expiration than the other. Which of the following statements best describes the value of the longer put versus the shorter put?
a. The longer put is always worth more than the shorter put.
b. The longer put is never worth less than the shorter put.
c. The longer put may be worth less than the shorter put.
d. The shorter put is never worth less than the longer put.

Question 21

What is the lower bound for the price of a six-month European put option with a strike-price of $43 on a non-dividend paying stock? Assume the current stock price is $40 and the risk-free interest rate is 5% per year.
a. $0.95
b. $1.96
c. $2.47
d. $3.00

Question 22

Assuming that the current stock price is $100 and the risk-free interest rate is 3% per year, what is the lower bound for the price of a six-month American put option with a strike of $100 on a non-dividend paying stock?
a. -$10.00

b. $0.00
c. $8.38
d. $11.47

Question 23

Suppose you own a long-dated, at-the-money call option on a stock and interest rates rise sharply. Assume the stock price is unaffected by the increase in interest rates. What happens to the value of your call option?
a. It decreases.
b. It does not change.
c. It increases.
d. It moves in tandem with the put option.

Question 24

A bond portfolio manager is worried about a sharp rise in interest rates. Using Treasury bonds as the underlying, to hedge the portfolio she should:
a. Buy call options.
b. Buy put options.
c. Sell call options.
d. Sell put options.

Question 25

An investor is considering stock options with three-month expiration. If she believes stock prices will not change for the next three months, to maximize profit she should:
a. Buy a call option.
b. Buy a call and sell a put option.
c. Sell a put and sell a call option.
d. Buy a put option.

Question 26

To create a covered call position, an investor would:
a. Buy a call option and sell (short) the underlying stock.
b. Buy a call and sell a put option.
c. Sell a call option and buy the underlying stock.
d. Sell a call option, buy a put option, and buy the underlying stock.

Question 27

A portfolio insurance strategy can be created if an investor owns the underlying stock and:
a. Sells a call option on the stock.
b. Buys a call option on the stock.
c. Sells a put option on the stock.
d. Buys a put option on the stock.

Question 28

An investor implements a portfolio insurance strategy on 1,000 shares of stock using the following price information.

Stock Price $40.00

Put Price $ 1.50	Strike Price $41.00
Call Price $ 0.75	Strike Price $41.00

The price of the stock moves to $35 by the time the options expire. Compute the portfolio gain or loss.

a. $1,000
b. $750
c. $0
d. $(500)

Question 29

An investor buys a put option on stock that she owns. Which of the following best describes the total return of her position as compared to the return from the stock alone if the stock price stays the same?

a. Significantly higher return.
b. Slightly higher return.
c. Slightly lower return.
d. Significantly lower return.

Question 30

An investor considering index stock options with two-month expirations. If she thinks the stock index will decline sharply in the next two months, to maximize profit she would:

a. Sell an index call option.
b. Sell an index put and buy an index call.
c. Buy an index put and buy an index call.
d. Buy an index put option.

Question 31

Assume Paul buys 100 shares of a non-dividend paying stock at $53 per share and writes a call with a strike price of $50. Paul receives a premium of $5.50 for the call. If the stock is selling at $45 at the expiration date of the call, what is the gain or loss of the covered call strategy?

a. A loss of $800
b. A loss of $1,350
c. A gain of $550
d. A loss of $250

Question 32

The current price of a stock is $17.50. The breakeven price of the buyer of a call option with a strike price of $20 and an option premium of $2.50 is:

a. $15.00
b. $17.50
c. $20.00

d. $22.50

Question 33

A portfolio hedging (insurance) strategy outperforms a stock strategy when:
a. The stock price declines more than the price of the put.
b. The stock price declines less than the price of the put.
c. The stock price rises more than the price of the put.
d. The stock price rises less than the price of the put.

Question 34

ABC Corp. stock is currently trading at $65. Assuming an investor buys a call option on 100 shares of ABC Corp. stock, which includes a call premium of $2.50 per share and a strike price of $68, what is the profit or loss on the expiration day of the call if the stock closes at $72?
a. $450
b. $400
c. $150
d. $(250)

Question 35

Paul owns 500 shares of IBM stock currently priced at $80 per share resulting in a holding value $40,000. If Paul sells five six-month call options (trading at $10 with an exercise price of $76) against his current stock holdings, what is the profit or loss on this covered call strategy if the stock declines to $72 on the option expiration date?
a. $2,000 profit
b. $1,000 loss
c. $1,000 profit
d. $4,000 loss

Question 36

Paul buys the following call option and sells the following put option on a stock priced at $24:

	Call	Put
Initial Option Price	$2.75	$0.49
Strike Price	$22.00	$24.00

What is the total profit or loss on his initial investment at expiration if the stock trades at $25.00?
a. 21.7%
b. 26.9%
c. 32.7%
d. 44.2%