**DERIVATIVES**

1. What is a European option?

A. An option traded on European exchange.

B. An option written on the assets of a European company.

C. An option that may be exercised any time up to and including the expiration date.

D. An option that can only be exercised on its maturity date.

2. What is the payoff of a call?

1. The same as premium.
2. The profit from the option transaction minus strike price.
3. The positive difference between the spot and strike price.
4. The same as the exercise price.

3. What is the terminology used when the spot price exceeds the strike price for a put option.

A. Near the money

B. At the money

C. Out of the money

D. In the money.

4. In an options contract, the option lies with the:

1. Buyer
2. Seller
3. Both
4. Exchange

5. The Clearing house of an exchange is not responsible for:

1. Effecting timely settlement
2. Ensuring that the buyer and seller get the best price
3. Control of the evolution of open interest
4. Financial Clearing of the payment flow

6. When is the price of the asset in a forward transaction determined?

1. On the trade date.
2. On the settlement date.
3. When the counterparties agree it will be determined.
4. On the date indicated by the seller in the transaction.

7. What is a fundamental distinction between a futures contract and a forward contract?

A. Future contracts are written on crude oil and forward contracts are not.

B. Future contracts specify the price at which asset is traded, forward contracts don’t.

C. Future contracts are not standardized, forward contracts are standardized.

D. Future contracts are publicly traded on major exchanges; forward contracts are transacted over the counter.

8. What is actually bought or sold on the future exchanges?

A. The right to buy a futures contract.

B. The right to sell a futures contract.

C. Futures contract.

D. The underlying asset of any futures contract.

1. What happens to the coupon or dividend income between the trade and settlement dates of a forward transaction?
2. The forward contract buyer receives all coupon or dividend income.
3. The forward contract buyer receives any coupon income and the seller receives any dividend income.
4. The forward contract seller receives any coupon income and the buyer receives any dividend income.
5. The seller continues to receive any coupon or dividend income from the trade up until the settlement date.

Use the option information given in the following table to answer the questions 10-12 below. Ignore taxes and transaction costs. Each contract is equal to 1 unit.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Time to Maturity** | | | |
| **Stock** | **Current price** | **Exercise price** | **Call Premium** | | **Put Premium** | |
|  |  |  | 3 months | 6 months | 3 months | 6 months |
| A | 52 | 50 | 3 | 4 | 0.35 | 1.05 |
| B | 40 | 45 | 1 | 1.25 | 5.5 | 6.00 |
| C | 35 | 30 | 6 | 6.3 | 0.45 | 0.65 |

1. If you purchase one 3-month call contract on A, what profit or loss will you make at the maturity date if the price of A at that time is Rs.57?

A. Rs.2

B. Rs.4

C. -Rs.4.60

D. Rs.5

1. If B's price is Rs.35 at the maturity of the 6-month option, determine the value of five 6-month put contracts at their maturity date.

A. Rs.20

B. Rs.57

C. Rs.82

D. -Rs.40

1. Which of the following options are in the money?

A. A's 3-month call

B. B's 6-month put

C. C's 6-month put

D. A and B

1. What is the theoretical value of an option?

A. The sum of all potential payoffs for an option.

B. The sum of all potential probabilities for an option.

C. The product of the value of an option times its probability.

D. The sum of the product of each potential payoff times the probability of each payoff.

1. Which option has the greatest value?
   1. A one-year European call option with a strike price of Rs.95.00, a spot price of Rs.95.00, volatility of 10.00% and an interest rate of 5.00%.
   2. A two-year European call option with a strike price of Rs.95.00, a spot price of Rs.95.00, volatility of 10.00% and an interest rate of 5.00%
   3. A three-year European call option with a strike price of Rs.95.00, a spot price of Rs.95.00, volatility of 10.00% and an Interest ate of 5.00%
   4. All options are equal in value.
2. What is the difference in the theoretical value of a one-year European call option with a strike price of Rs.100.00 with a spot price of Rs. 110.00 and one with the same maturity, but with the strike and spot prices of Rs.100.00? assume both options have the same volatility and interest rate.
   1. The option written on the underlying asset with the lower spot price will be higher in value.
   2. The option written on the underlying asset with the higher spot price will be lower in value.
   3. The option written on he underlying asset with the higher spot price will be higher in value.
   4. There is no difference in theoretical value.
3. If two one-year European call options are offered on an asset with a spot price of Rs.98.00, and one has a strike price of Rs.98.00 and the other a strike price of Rs.103.00, which option has the greater value? Assume both options have the same volatility and interest rate.

A. The option with the strike price of Rs.98.00 is greater in value.

B. The option with the strike price of Rs.103.00 if greater in value.

C. Both options are equal in value.

D. There is not sufficient information to answer the question.

1. How does volatility affect the price movements of the underlying asset of an option?
   1. The underlying asset price moves more quickly over time.
   2. Larger price movements cause larger price dispersions thus larger potential payoffs.
   3. Larger price movements cause smaller price dispersions thus larger potential payoffs.
   4. Volatility has a negligible effect on the price movements of the underlying asset of an option.
2. How do interest rates affect the value of an option?
   1. They have no effect on the value of an option.
   2. They affect the forward pricing of the underlying asset.
   3. They affect the discounting of the theoretical value of the option.
   4. They affect the forward pricing of the underlying asset and the discounting of he theoretical value of the option.
3. What are the variables that affect the value of an option?

A. Maturity and volatility

B. Type of option and interest rates

C. Spot and strike prices

D. All of the above.

1. What is the intrinsic value of an option?

A. The difference between the premium and strike price.

B. The payoff if an option is exercised immediately.

C. The payoff of any at-the-money option.

D. The payoff of any out-of-money option.

1. How is the time value of an option calculated?

A. Total option value minus intrinsic value.

B. Intrinsic value minus total option value.

C. Total option value minus time remaining to maturity.

D. Intrinsic value minus time remaining to maturity.

1. Why does the value of an option decay over time, all things held constant?

A. Spot prices increases over time.

B. The strike price stays the same over time.

C. There is less time for the spot price to change.

D. The intrinsic value of an option increases over time.

1. What is the value of an option at maturity?

A. Rs.0.00

B. Its strike price.

C. Its intrinsic value

D. Its time value.