76 OPTION REPLICATION USING PUT–CALL PARITY

1. A synthetic European call option includes a short position in:
   (A) the underlying asset.
   (B) a risk-free bond.
   (C) a European put option.

2. An investor calculates that the premium of a European put option is less than its value based on put-call parity. In exploiting this arbitrage opportunity, the investor is most likely to:
   (A) invest the present value of the exercise price at the risk-free rate.
   (B) sell the call option.
   (C) sell the underlying short.

3. A fiduciary call is a portfolio that is made up of:
   (A) a call option and a bond that pays the exercise price of the call at option expiration.
   (B) a call option and a share of stock.
   (C) a call that is synthetically created from other instruments.

4. Using put-call parity, it can be shown that a synthetic European put can be created by a portfolio that is:
   (A) short the stock, long the call, and long a pure discount bond that pays the exercise price at option expiration.
   (B) short the stock, long the call, and short a pure discount bond that pays the exercise price at option expiration.
   (C) long the stock, short the call, and short a pure discount bond that pays the exercise price at option expiration.

5. Using put-call parity, it can be shown that a synthetic European call can be created by a portfolio that is:
   (A) long the stock, short the put, and short a pure discount bond that pays the exercise price at option expiration.
   (B) long the stock, long the put, and long a pure discount bond that pays the exercise price at option expiration.
   (C) long the stock, long the put, and short a pure discount bond that pays the exercise price at option expiration.

6. Consider a European call option and put option that have the same exercise price, and a forward contract to buy the same underlying asset as the two options. An investor buys a risk-free bond that will pay, on the expiration date of the options and the forward contract the difference between the exercise price and the forward price. According to the put-callforward parity relationship, this bond can be replicated by:
   (A) writing the call option and buying the put option.
   (B) buying the call option and writing the put option.
   (C) writing the call option and writing the put option.

7. A synthetic European put option includes a short position in:
   (A) the underlying asset.
   (B) a risk-free bond.
   (C) a European call option.

8. Which of the following portfolios has the same future cash flows as a protective put?
   (A) Long call option, long risk-free bond, short the underlying asset.
   (B) Long call option, long risk-free bond.
   (C) Short call option, long risk-free bond.

9. Which of the following instruments is a component of the put-call-forward parity relationship?
   (A) The spot price of the underlying asset.
   (B) The present value of the forward price of the underlying asset.
   (C) The future value of the forward price of the underlying asset.

10. The relationship referred to as put-call-forward parity states that at time = 0, if there is no arbitrage opportunity, the value of a call at X on an asset that has no holding costs or benefits plus the present value of X is equal to:

(A) the asset price minus the value of a put option at X.

(B) the value of a put option at X plus the present value of the forward contract price.

(C) the forward contract price plus the value of a put option at X.