

1. A two-year zero-coupon bond issued by corporate XYZ is currently rated A. One year from now XYZ is expected to remain at A with 85% probability, upgraded to AA with 5% probability, and downgraded to BBB with 10% probability. The risk free rate is flat at 4%. The credit spreads are flat at 40, 80, and 150 basis points for AA, A, and BBB rated issuers, respectively. All rates are compounded annually. Estimate the expected value of the zero-coupon bond one year from now (for USD 100 face amount).
 - a. USD 92.59
 - b. USD 95.33
 - c. USD 95.37
 - d. USD 95.42

2. Given the following:(Assume continuous compounding)
 - Current spot CHF/USD rate: 1.3680 (1.3680CHF = 1USD)
 - 3-month USD interest rates: 1.05%
 - 3-month Swiss interest rates: 0.35%

A currency trader notices that the 3-month forward price is USD 0.7350. In order to arbitrage, the trader should:

 - a. Borrow CHF, buy USD spot, go long Swiss franc forward
 - b. Borrow CHF, sell Swiss franc spot, go short Swiss franc forward
 - c. Borrow USD, buy Swiss francs spot, go short Swiss franc forward
 - d. Borrow USD, sell USD spot, go long Swiss franc forwards

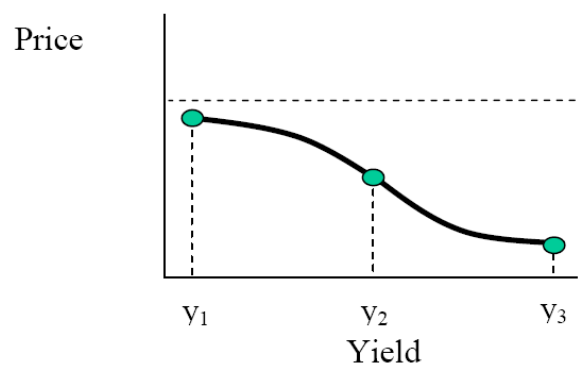
3. Which of the following is **NOT** an assumption of the Black-Scholes options pricing model?
 - a. The price of the underlying moves in a continuous fashion
 - b. The interest rate changes randomly over time
 - c. The instantaneous variance of the return of the underlying is constant
 - d. Markets are perfect, i.e. short sales are allowed, there are no transaction costs or taxes, and markets operate continuously

4. An important step in structuring a securitization is determining an adequate level of credit support or enhancement. Which of the following is **NOT** one of common credit enhancement forms for securitization transactions?
 - a. Subordinated tranches of securitization debt
 - b. Excess Spread account
 - c. Cash reserve account
 - d. Sinking fund account

5. Which of the following statements regarding liquidity risk is **CORRECT**?
 - a. Asset liquidity risk arises when a financial institution cannot meet payment obligations
 - b. Flight to quality is usually reflected in a decrease in the yield spread between corporate and government issues

- c. Yield spread between on-the-run and off-the-run securities mainly captures the liquidity premium, and not the market and credit risk premium
 - d. Funding liquidity risk can be managed by setting limits on certain markets or products and by means of diversification
6. Which of the following fixed-income securities most likely has negative effective duration?
 - a. A range accrual note
 - b. A floating rate note
 - c. An interest-only tranche of a CMO
 - d. A principal-only tranche of a CMO
 7. With all other things being equal, a risk monitoring system that assumes constant volatility for equity returns will understate the implied volatility for which of the following positions by the largest amount:
 - a. Short position in an at-the-money call
 - b. Long position in an at-the-money call
 - c. Short position in a deep in-the-money call
 - d. Long position in a deep in-the-money call
 8. A portfolio management firm manages the fixed-rate corporate bond portfolio owned by a defined-benefit pension fund. The duration of the bond portfolio is 5 years; the duration of the pension fund's liabilities is 7 years. Assume that the fund sponsor strongly believes that rates will decline over the next six months and is concerned about the duration mismatch between portfolio assets and pension liabilities. Which of the following strategies would be the best way to eliminate the duration mismatch?
 - a. Enter into a swap transaction in which the firm pays fixed and receives floating.
 - b. Enter into a swap transaction in which the firm receives fixed and pays floating.
 - c. Purchase an interest rate cap expiring in six months.
 - d. Sell Eurodollar futures contracts.
 9. Which of the following options is strongly path-dependent?
 - a. An Asian option
 - b. A binary option
 - c. An American option
 - d. A European call option
 10. Which of the following option strategies can give the buyer an unlimited profit?
 - a. An American digital option

- b. A European lookback call option
 - c. A European butterfly spread
 - d. An up-and-out with rebate barrier option
11. How does the credit exposure of a long OTC put option on XYZ stock change when the stock price decreases?
- a. Increases
 - b. Decreases
 - c. Doesn't vary with underlying stock price
 - d. There is no credit exposure on long options
12. An equity options trader is short a call option of a stock with strike at \$104. The maturity of the option is within half an hour and the current price is \$103.75. Which of the following Greeks poses the highest risk to his position?
- a. Delta
 - b. Gamma
 - c. Rho
 - d. Theta
13. What bond type does the following price-yield curve represent and at which yield level is convexity equal to zero?



- a. Puttable bond with convexity close to zero at y_2 .
 - b. Puttable bond with convexity close to zero at y_1 and y_3 .
 - c. Callable bond with convexity close to zero at y_2 .
 - d. Callable bond with convexity close to zero at y_1 and y_3 .
14. The credit exposure of an interest rate swap differs from that of a bond in that:
- I. The swap can be terminated by novation.

- II. The principal amount of the swap is not at risk
 - III. Swaps benefit from higher recovery rates
 - IV. The full coupon amounts in the swap are not at risk
 - a. I and III
 - b. II and IV
 - c. II, III and IV
 - d. I, II, III and IV
15. The potential future credit exposure profile peaks at maturity for which of the following instruments:
- I. FX forwards
 - II. Interest rate swaps
 - III. Cross currency swaps with final exchange
 - a. I only
 - b. II only
 - c. I and III
 - d. I, II and III
16. If the current USD/AUD rate is 0.6650 (1 AUD=0.6650USD) and the risk-free rates for the USD and AUD are 1.0% and 4.5% respectively, what is the lower bound of a 5-month European put option on the AUD with a strike price of 0.6880?
- a. 0.0135
 - b. 0.0245
 - c. 0.0325
 - d. 0.0455
17. Which of the following regarding option strategies is/are **NOT** correct?
- I. A long strangle involves buying a call and a put with equal strike prices
 - II. A short bull spread involves selling a call at lower strike price and buying another call at higher strike price
 - III. Vertical spreads are formed by options with different maturities
 - IV. A long butterfly spread is formed by buying two options at two different strike prices and selling another two options at the same strike price
 - a. I only
 - b. I and III only
 - c. I and II only
 - d. III and IV only
18. An interest rate collar can be structured by:

- a. Buying an interest rate cap and selling an interest rate floor
 - b. Buying an interest rate cap and buying an interest rate floor
 - c. Selling an interest rate cap and selling an interest rate floor
 - d. Selling an interest rate cap and buying an interest rate floor
19. A European put option on a non-dividend paying stock has a remaining life of 6 months with a strike of USD 50 and the risk-free rate of 1%, after 3 months which of the following stock prices has the highest time-value of the option (in % of stock price)?
- a. USD 10
 - b. USD 40
 - c. USD 50
 - d. USD 60
20. Vega measures the sensitivity of an option's price with respect to changes in the volatility of the underlying asset. Consider a graph where vega is on the Y axis, the underlying asset price is on the X axis, and the strike price is in the middle of the X axis. Which of the following best describes the graphical representation of vega for calls and puts?
- a. Call: graph of vega resembles a U. Put: graph of vega resembles a U
 - b. Call: graph of vega resembles a U. Put: graph of vega resembles an inverted U
 - c. Call: graph of vega resembles an inverted U. Put: graph of vega resembles an inverted U
 - d. Call: graph of vega resembles an inverted U. Put: graph of vega resembles a U
21. A portfolio of stock A and options on stock A is currently delta neutral, but has a positive gamma. Which of the following actions will make the portfolio both delta and gamma neutral?
- a. Buy call options on stock A and sell stock A
 - b. Sell call options on stock A and sell stock A
 - c. Buy put options on stock A and buy stock A
 - d. Sell put options on stock A and sell stock A