2014 年 5 月 FRM 一级模拟考试（二）

1. On July 1, 2002, a company enters into a forward contract to buy 10 million Japanese yen on January 1, 2003. On September 1, 2002, it enters into a forward contract to sell 10 million Japanese yen on January 1, 2003. Describe the payoff from this strategy.

I. Gain if forward price goes down

II. Loss if forward price goes down

III. Loss if forward price goes up

IV. Gain if forward price goes up

A. II

B. I and III

C. II and IV

D. I、III and IV

2. Suppose that you enter into a short futures contract to sell July silver for $5.20 per ounce on the New York Commodity Exchange. The size of the contract is 5,000 ounces. The initial margin is $4,000, and the maintenance margin is $3,000. What change in the futures price will lead to a margin call? What happens if you do not meet the margin call?

A. Silver price>5.40 per ounce; call margin

B. Silver price<5.40 per ounce; call margin

C. Silver price>5.40 per ounce; be forced to close out your position

D. Silver price<5.40 per ounce; be forced to close out your position

3. At the end of one day a clearinghouse member is long 100 contracts, and the settlement price is $50,000 per contract. The original margin is $2,000 per contract. On the following day the member becomes responsible for clearing an additional 20 long contracts, entered into at a price of $51,000 per contract. The settlement price at the end of this day is $50,200. How much does the member have to add to its margin account with the exchange clearinghouse?

A. $40000

B. $20000

C. $16000

D. $36000

4. A company has a $20 million portfolio with a beta of 1.2. It would like to use futures contracts on the S&P 500 to hedge its risk. The index is currently standing at 1080, and each contract is for delivery of $250 times the index. What is the hedge that minimizes risk? What should the company do if it wants to reduce the beta of the portfolio to 0.6?

A. Sell 89 contracts；Sell 44 contracts.
B. Buy 89 contracts；Sell 44 contracts.
C. Sell 44 contracts；Sell 89 contracts.
D. Sell 44 contracts；Buy 89 contracts

5. Suppose that the standard deviation of quarterly changes in the prices of a commodity is $0.65, the standard deviation of quarterly changes in a futures price on the commodity is $0.81, and the coefficient of correlation between the two changes is 0.8. What is the optimal hedge ratio for a 3-month contract?

A. 0
B. 0.642
C. 0.321
D. 0.50

6. Suppose that the 6-month, 12-month, 18-month, and 24-month zero rates are 5%, 6%, 6.5%, and 7%, respectively. What is the 2-year par yield?

A. 6.872%
B. 6.972%
C. 7.072%
D. 7.172%

7. The term structure of interest rates is upward-sloping. Put the following in order of magnitude:

(a) The 5-year zero rate
(b) The yield on a 5-year coupon-bearing bond
(c) The forward rate corresponding to the period between 5 and 5.25 years in the future.

What is the answer to this question when the term structure of interest rates is upward-sloping?

A. c > a > b
B. a > c > b
C. c > b > a
D. b > a > c

8. A 10-year 8% coupon bond currently sells for $90. A 10-year 4% coupon bond currently sells for $80. What is the 10-year zero rate? (Considering continuously compounding.)

A. 3.27%
B. 3.37%
C. 3.47%

D. 3.57%

9. The cash prices of 6-month and 1-year Treasury bills are 94.0 and 89.0. A 1.5-year bond that will pay coupons of $4 every 6 months currently sells for $94.84. A 2-year bond that will pay coupons of $5 every 6 months currently sells for $97.12. Calculate the 6-month, 1-year, 1.5-year, and 2-year zero rates. (continuously compounded)

A. 12.38%; 11.55%; 11.5%; 11.3%

B. 12.38%; 11.65%; 11.4%; 11.3%

C. 12.38%; 11.65%; 11.5%; 11.3%

D. 12.38%; 11.65%; 11.5%; 11.2%

10. A 5-year bond with a yield of 11% (continuously compounded) pays an 8% coupon at the end of each year.

(a) What is the bond's price?

(b) What is the bond's duration?

(c) Use the duration to calculate the effect on the bond's price of a 0.2% decrease in its yield.

A. 86.80; 4.256; bond price increase to 87.54

B. 85.80; 4.156; bond price increase to 86.54

C. 85.80; 4.256; bond price increase to 87.54

D. 86.80; 4.156; bond price increase to 86.54

11. Assume that the risk-free interest rate is 9% per annum with continuous compounding and that the dividend yield on a stock index varies throughout the year. In February, May, August, and November, dividends are paid at a rate of 5% per annum. In other months, dividends are paid at a rate of 2% per annum. Suppose that the value of the index on July 31, 2002, is 300. What is the futures price for a contract deliverable on December 31, 2002?

A. 305.34

B. 306.34

C. 307.34

D. 308.34

12. The 2-month interest rates in Switzerland and the United States are, respectively, 3% and 8% per annum with continuous compounding. The spot price of the Swiss franc is $0.6500. The futures price for a contract deliverable in 2 months is $0.6600. What arbitrage opportunities does this create?

A. Borrow US dollars to buy Swiss franc and sell Swiss franc futures

B. Borrow Swiss franc to buy US dollars and sell US dollars futures

C. Borrow US dollars to buy Swiss franc and buy Swiss franc futures

D. Borrow Swiss franc to buy US dollars and buy US dollars futures

13. The spot price of silver is $9 per ounce. The storage costs are $0.24 per ounce per year payable quarterly in advance. Assuming that interest rates are 10% per annum for all maturities, calculate the futures price of silver for delivery in 9 months.

A. 9.69

B. 9.79

C. 9.89

D. 9.59

14. The three-month Eurodollar futures price for a contract maturing in six years is quoted as 95.20. The standard deviation of the change in the short-term interest rate in one year is 1.1%. Estimate the forward LIBOR interest rate for the period between 6.00 and 6.25 years in the futures.

A. 4.47%

B. 4.57%

C. 5.66%

D. 6.36%

15. On August 1 a portfolio manager has a bond portfolio worth $10 million. The duration of the portfolio in October will be 7.1 years. The December Treasury bond futures price is currently 91-12 and the cheapest-to-deliver bond will have duration of 8.8 years at maturity. How should the portfolio manager immunize the portfolio against changes in interest rates over the next two months?

A. Long 880 contracts of Treasury bond futures

B. Short 880 contracts of Treasury bond futures

C. Long 88 contracts of Treasury bond futures

D. Short 88 contracts of Treasury bond futures

16. Assume that a bank can borrow or lend money at the same interest rate in the LIBOR market. The 90-day rate is 10% per annum, and the 180-day rate is 10.2% per annum, both expressed with continuous compounding and actual/actual day count. The Eurodollar futures price for a contract maturing in 91 days is quoted as 89.5. What arbitrage opportunities are open to the bank?

A. Long Eurodollar futures, Borrow 182-day money, invest the borrowed money for 91 days

B. Long Eurodollar futures, Borrow 91-day money, invest the borrowed money for 182 days

C. Short Eurodollar futures, Borrow 91-day money, invest the borrowed money for 182 days

D. Short Eurodollar futures, Borrow 182-day money, invest the borrowed money for 91days

17. A $100 million interest rate swap has a remaining life of 10 months. Under the terms of the swap, 6-month LIBOR is exchanged for 12% per annum (compounded semiannually). The average of the bid-offer rate being exchanged for 6-month LIBOR in swaps of all maturities is currently 10% per annum with continuous compounding. The 6-month LIBOR rate was 9.6% per annum 2 months ago. What is the current value of the swap to the party paying floating?

A. 0.96 million dollars

B. 1.8 million dollars

C. 1.964 million dollars

D. 2.5 million dollars

18. A currency swap has a remaining life of 15 months. It involves exchanging interest at 14% on £20 million for interest at 10% on $30 million once a year. The term structure of interest rates in both the United Kingdom and the United States is currently flat, and if the swap were negotiated today the interest rates exchanged would be 8% in dollars and 11% in sterling. All interest rates are quoted with annual compounding. The current exchange rate (dollars per pound sterling) is 1.6500. What is the value of the swap to the party paying dollars?

A. -4.50

B. -4.604

C. 4.604

D. 4.50

19. A financial institution has entered into an interest rate swap with company X. Under the terms of the swap, it receives 10% per annum and pays 6-month LIBOR on a principal of $10 million for 5 years. Payments are made every 6 months. Suppose that company X defaults on the sixth payment date (at the end of year 3) when the interest rate (with semiannual compounding) is 8% per annum for all maturities. What is the loss to the financial institution? Assume that 6-month LIBOR was 9% per annum halfway through year 3.

A. 46.0

B. 40.0

C. 43.0

D. 41.3

20. The 1-year LIBOR rate is 10%. A bank trades swaps where a fixed rate of interest is exchanged for 12-month LIBOR with payments being exchanged annually. The 2- and 3-year swap rates are 11% and 12% per annum. Estimate the 2- and 3-year LIBOR zero rates (expressed with continuously compounding).

A. 10.46% 11.46%

B. 11.46% 12.46%

C. 12.46% 13.46%

D. 13.46% 14.46%

21. What is a lower bound for the price of a 1-month European put option on a non-dividend-paying stock when the stock price is $12, the strike price is $15, and the risk-free interest rate is 6% per annum?

A. 3.96

B. 2.93

C. 3.52

D. 3.58

22. A 4-month European call option on a dividend-paying stock is currently selling for $5. The stock price is $64, the strike price is $60, and a dividend of $0.80 is expected in 1 month. The risk-free interest rate is 12% per annum for all maturities. What opportunities are there for an arbitrageur?

A. +0.56 USD

B. -0.56 USD

C. +5.33 USD

D. +4.35 USD

23. The price of an American call on a non-dividend-paying stock is $4. The stock price is $31, the strike price is $30, and the expiration date is in 3 months. The risk-free interest rate is 8%. Derive lower and upper bounds for the price of an American put on the same stock with the same strike price and expiration date.

A. 2.55 3.31

B. 2.33 3.32

C. 2.41 3.00

D. 2.33 4.22

24. A stock price is currently $100. Over each of the next two 6-month period it is expected to go up by 10% or down by 10%. The risk-free rate is 8% per annum with continuous compounding. What is the value of a 1-year European call option with a strike price of

$100?

A. $9.61

B. 9.71

C. 9.82

D. 9.50

25. Consider a stock index currently standing at 250. The dividend yield on the index is 4% per annum, and the risk-free rate is 6% per annum. A three-month European call option on the index with a strike price of 245 is currently worth $10. What is the value of a three-month put option on the index with a strike price of 245?

A. 3.84

B. 1.35

C. 16.16

D. 5.0

26. An index currently stands at 1,500. European call and put options with a strike price of 1,400 and time to maturity of six months have market prices of 154.00 and 34.25, respectively. The six-month risk-free rate is 5%. What is the implied dividend yield?

A. 2.01%

B. 1.99%

C. 2.05%

D. 1.96%

27. A bank's position in options on the dollar/euro exchange rate has a delta of 30,000 and a gamma of -80, 000. The exchange rate (dollars per euro) is 0.90. After a short period of time, the exchange rate moves to 0.93. What is the new delta, and what trade is necessary to keep the position delta neutral? Assuming the bank did set up a delta-neutral position originally, has it gained or lost money from the exchange-rate movement?

A. 27,600, short 27600 dollars, it gained money from the exchange-rate movement.

B. 33,000, long 33000 euros, it lost money from the exchange-rate movement.

C. 27,600, short 27600 euros, it lost money from the exchange-rate movement.

D. 33,000, long 33000 dollars, it gained money from the exchange-rate movement.

28. A financial institution has the following portfolio of over-the-counter options on sterling

Type	*Position*	*Delta of Option*	*Gamma of Option*	*Vega of Option*
Call	-1,000	0.50	2.2	1.8
Call	-500	0.80	0.6	0.2

Put	-2,000	-0.40	1.3	0.7
Call	-500	0.70	1.8	1.4

A traded option is available with a delta of 0.6, a Gamma of 1.5, a Vega of 0.8

What position in the traded option and in sterling would make the portfolio both gamma neutral and delta neutral?

A. Short position in 4000 traded options, long position in 1950 sterling.

B. Long position in 4000 traded options, short position in 1950 sterling.

C. Long position in 4000 traded options, long position in 1950 sterling.

D. Short position in 4000 traded options, short position in 1950 sterling.

29. Consider a position consisting of a $100,000 investment in asset A and a $100,000 investment in asset B. Assume that the daily volatilities of both assets are 1% and that the coefficient of correlation between their returns is 0.3. What is the 5-day 99% value at risk for the portfolio?

A. 8765

B. 8425

C. 8401

D. 8300

30. A financial institution owns a portfolio of options on the US dollar-sterling exchange rate. The delta of the portfolio is 56.0. The current exchange rate is 1.5000. Derive an approximate linear relationship between the change in the portfolio value and the percentage change in the exchange rate. If the daily volatility of the exchange rate is 0.7%, estimate the 10-day 99% VAR.

A. 4.33

B. 3.66

C. 5.36

D. 4.69

Given the following information to answer the question 31 and question 32:

Consider a position consisting of a $300,000 investment in gold and a $500,000 investment in silver. Suppose that the daily volatilities of these two assets are 1.8% and 1.2%, respectively, and that the coefficient of correlation between their returns is 0.6.

31. What is the 10-day 97.5% VAR for the portfolio?

A. 63320

B. 65320

C. 69856

D. 56983

32. By how much does diversification reduce the VAR?

A. 7756

B. 7569

C. 7546

D. 7438

33. Which of the following four statements on models for estimating volatility is incorrect?

A. In the EWMA model, some positive weight is assigned to the long-run average variance rate.

B. In the EWMA model, the weights assigned to observations decrease exponentially as the observations become older.

C. In the GARCH(1,1) model, a positive weight is estimated for the long-run average variance rate.

D. In the GARCH(1,1) model, the weights estimated for observations decrease exponentially as the observations become older.

34. Which of the following statements is correct regarding the effects of interest rate shift on fixed-income portfolios with similar durations?

A. A barbell portfolio has greater convexity than a bullet portfolio because convexity increases linearly with maturity.

B. A barbell portfolio has greater convexity than a bullet portfolio because convexity increases with the square of maturity.

C. A barbell portfolio has lower convexity than a bullet portfolio because convexity increases linearly with maturity.

D. A barbell portfolio has lower convexity than a bullet portfolio because convexity increases with the square of maturity.

35. The current price of stock ABC is $42 and the call option with a strike at $44 is trading at $3. Expiration is in one year. The corresponding put is priced at $2. Which of the following trading strategies will result in arbitrage profits? Assume that the risk-free rate is 10% and that the risk-free bond can be shorted costlessly. There are no transaction costs.

A. Long position in both the call option and the stock, and short position in the put option and risk-free bond

B. Long position in both the call option and the put option, and short position in the stock and risk-free bond

C. Long position in both the call option and the risk-free bond, and short position in

the stock and the put option

D. Long position in both the put option and the risk-free bond, and short position in the stock and the call option

36. Which two of the following four statements are correct about the early exercise of American options on non-dividend-paying stocks?

I. It is never optimal to exercise an American call option early.

II. It can be optimal to exercise an American put option early.

III. It can be optimal to exercise an American call option early.

IV. It is never optimal to exercise an American put option early.

A. I and II

B. I and IV

C. II and III

D. III and IV

37. In late 1993, MGRM reported losses of about $1.3 billion in connection with the implementation of a hedging strategy in the oil futures market. In 1992, the company had begun a new strategy to sell petroleum to independent retailers at fixed prices above the prevailing market price for periods of up to 10 years. At the same time, MGRM implemented a hedging strategy using a large number of short-term derivative contracts such as swaps and futures on crude oil. This led to a timing (maturity) mismatch between the short-term hedges and the long-term liability. Unfortunately, the company suffered significant losses with its hedging strategy when oil market conditions abruptly changed to:

A. Contango, which occurs when the futures price is above the spot price

B. Contango, which occurs when the futures price is below the spot price

C. Normal backwardation, which occurs when the futures price is above the spot price

D. Normal backwardation, which occurs when the futures price is below the spot price

38. Which of the following statements about stress testing are true?

I. Stress testing can complement VAR estimation in helping risk managers identify crucial vulnerabilities in a portfolio.

II. Stress testing allows users to include scenarios that did not occur in the lookback horizon of the VAR data but are nonetheless possible.

III. A drawback of stress testing is that it is highly subjective.

IV. The inclusion of a large number of scenarios helps management better understand the risk exposure of a portfolio.

A. I and II only

B. III and IV only

C. I, II, and III only

D. I, II, III, and IV

39. Suppose Portfolio A has an expected return of 8%, volatility of 20%, and beta of 0.5. Suppose the market has an expected return of 10% and volatility of 25%. Finally, suppose the risk-free rate is 5%. What is Jensen's alpha for Portfolio A?

A. 10.0%

B. 1.0%

C. 0.5%

D. 15%

40. Assume that a trader is making a relative value trade, selling a U.S. Treasury bond and correspondingly purchasing a U.S. Treasury TIPS. Based on the current spread between the two securities, the trader shorts $100 million of the nominal bond and purchases $89.8 million of TIPS. The trader then starts to question the amount of the hedge due to changes in yields on TIPS in relation to nominal bonds. He runs a regression and determines from the output that the nominal yield changes by 1.0274 basis points per basis point change in the real yield. Would the trader adjust the hedge, and if so, by how much?

A. No

B. Yes, by $2.46 million (purchase additional TIPS)

C. Yes, by $2.5 million (sell a portion of the TIPS)

D. Yes, by $2.11 million (purchase additional TIPS)

41. Assume that a random variable follows a normal distribution with a mean of 80 and a standard deviation of 24. What percentage of this distribution is between 32 and 116?

A. 4.56%

B. 8.96%

C. 95.44%

D. 91.04%

42. When testing a hypothesis, which of the following statements is correct when the level of significance of the test is decreased?

A. The likelihood of rejecting the null hypothesis when it is true decreases.

B. The likelihood of making a type 1 error increases

C. The null hypothesis is rejected more frequently, even when it is actually false

D. The likelihood of making a type 2 error decreases

43. A portfolio manager is interested in the systematic risk of a stock portfolio, so he estimates the linear regression: $R_{Pt} - R_F = \alpha_P + \beta_P[R_{Mt} - R_F] + \varepsilon_{Pt}$ where R_{Pt} is the return of the portfolio at time t, R_{Mt} is the return of the market portfolio at time t, and R_F is the risk-free rate, which is constract over time. Suppose that $\alpha = 0.008$, β=0.977, $\sigma(R_P) = 0.167$ and $\sigma(R_M) = 0.156$.

What is the approximate coefficient of determination in this regression?

A. 0.913

B. 0.834

C. 0.977

D. 0.955

44. You built linear regression model to analyze annual salaries for a developed country. You incorporated two independent variables, age and experience, into your model. Upon reading the regression results, you notice that the coefficient of experience is negative, which appears to be counterintuitive. In addition, you discover that the coefficients have low t-statistics but the regression model has a high R^2. What is the most likely cause of these results?

A. Incorrect standard errors

B. Heteroskedasticity

C. Serial correlation

D. Multicollinearity

45. The first three US Treasury bonds listed below are the "base bonds:" they inform the market's efficient discount function up to 1.5 years, with semi-annual compounding:

Selected US Treasury Bond Prices
(Base Bonds --> Discount Function)
Prices as of May 31,2013

Coupon	Maturity	Price
4.0%	11/30/2013	$101.00
5.0%	5/31/2014	$102.50
6.0%	11/30/2014	$102.40

Mis-priced US T-bond:

2.0%	11/30/2014	$99.00

We also observe a 1.5 year Treasury bond (matures on 11/30/2014) with a 2.0% coupon that

is mis-priced at $99.00. If we use the three base bonds to replicate a portfolio with identical cash flows (i.e., identical to the mis-priced 2.0% bond), in order to exploit the arbitrage opportunity (assume no transaction costs), what is the trade with respect to the base 6.0% 11/30/2014 bond?

A. Sell 0.9320 face amount of the 6.0% 11/30/14 T-bond for a receipt of $95.33

B. Sell 1.0472 face amount of the 6.0% 11/30/14 T-bond for a receipt of $113.20

C. Buy 0.9806 face amount of the 6.0% 11/30/14 T-bond at a cost of $100.41

D. Buy 0.9740 face amount of the 6.0% 11/30/14 T-bond at a cost of $96.43

46. Suppose σ_t^2 is the estimated variance at time t and u_t is the realized return at t. Which of the following GARCH(1,1) models will take the longest time to revert to its mean?

A. $\sigma_t^2 = 0.04 + 0.02u_{t-1}^2 + 0.92\sigma_{t-1}^2$

B. $\sigma_t^2 = 0.02 + 0.04u_{t-1}^2 + 0.94\sigma_{t-1}^2$

C. $\sigma_t^2 = 0.03 + 0.02u_{t-1}^2 + 0.95\sigma_{t-1}^2$

D. $\sigma_t^2 = 0.03 + 0.03u_{t-1}^2 + 0.93\sigma_{t-1}^2$

47. Which of the following statements is incorrect regarding the volatility term structure predicted by a GARCH(1,1) model: $\sigma_t^2 = \omega + \alpha u_{t-1}^2 + \beta\sigma_{t-1}^2$, where $\alpha + \beta < 1$?

A. When the current volatility estimate is below the long-run average volatility, this GARCH model estimates an upward-sloping volatility term structure.

B. When the current volatility estimate is above the long-run average volatility, this GARCH model estimates a downward-sloping volatility term structure.

C. Assuming the long-run estimated variance remains unchanged as the GARCH parameters α and β increase, the volatility term structure predicted by this GARCH model reverts to the long-run estimated variance more slowly.

D. Assuming the long-run estimated variance remains unchanged as the GARCH parameters α and β increase, the volatility term structure predicted by this GARCH model reverts to the long-run estimated variance faster.

48. A company is considering entering into a joint venture that will require an investment of $10 million. The project is expected to generate cash flows of $4 million, $3 million, and $4 million in each of the next three years, respectively. Assuming a discount rate of 10%, what is the project's net present value (NPV)?

A. -$879,000.

B. -$309,000.

C. +$100,000.

D. + $243,000.

49. Analyst Joseph Lockwood examines a single-factor regression for a hedge fund and makes the following two statements:

Statement1: Heteroskedasticity exists if the regression residuals are correlated with their lagged values.

Statement2: Hereroskedasticity causes the t-statistics of the regression to be incorrectly calculated using ordinary least squares methods.

Which of Lockwood's claims are correct?

A. Statement 1 is correct and Statement 2 is correct.

B. Statement 1 is correct and Statement 2 is incorrect.

C. Statement 1 is incorrect and Statement 2 is correct.

D. Statement 1 is incorrect and Statement 2 is incorrect.

50. Jenny Caldwell, FRM, is using a moving average model in which she assumes weights decline exponentially back through time. The original volatility was calculated at 1.5%. However, she believes a decay factor of 0.96 for an exponentially weighted moving average (EWMA) model is appropriate for modeling a more realistic variance measure. lf the stock market return is 1% today, what is the new estimate of volatility using the EWMA model?

A. 0.97%.

B. 1.31%.

C. 1.48%.

D. 1.58%.

51. James Tulsma, FRM, is analyzing a publicly traded firm and is using the company's beta, the risk-free rate of return, and the expected return on the market to estimate the company's required rate of return. He is somewhat concerned that the underlying assumptions of this technique are not realistic. Which of the following statements is an assumption of the capital asset pricing model (CAPM)?

A. Investors minimize their expected utility of wealth at the end of the period.

B. Investors are risk-neutral.
C. Investors are only concerned with the mean and standard deviation of returns.
D. Assets are not divisible.

52. An analyst is concerned that the trading strategy she recently identified has generated a statistically insignificant result and has asked for guidance in assessing the strategy. A result is statistically significant if it is:

A. Unlikely to have occurred merely by chance, and the p-value is less than the significance level.
B. Likely to have occurred merely by chance, and the p-value is less than the significance level.
C. Unlikely to have occurred merely by chance, and the p-value is greater than the significance level.
D. Likely to have occurred merely by chance, and the p-value is greater than the significance level.

53. John Bone is a junior bond analyst for XYZ investments. He is examining both investment grade bonds and speculative grade bonds. In particular, he is looking for bonds located below the separation between these two bond classifications. Which of the following bonds would be classified as a speculative grade bond?

A. FHLMC discount note.
B. ACC rail bond rated Baa.
C. OMC Corp. MTN rated BB.
D. Traveler's floating-rate note rated Aa.

54. Howard Parks, FRM, is an investor with a short position and is preparing to deliver a bond for this position. The bond to purchase for delivery is based on a settlement price of $98.03 (also known as the quoted futures price). Which of the following four bonds is cheapest-to-deliver?

Bond	Quoted Bond Price	Conversion Factor
A	103	1.03
B	116	1.12
C	105	1.07
D	124	1.23

A. Bond A.
B. Bond B.

C. Bond C.

D. Bond D.

55. A firm has determined that the value at risk (VaR) of its investment portfolio is $18 million for one day at a 95% confidence level. Which of the following statements regarding this VaR measure is correct?

A. There is a 95% probability that the portfolio will lose $18 million on a given day.

B. There is a 95% probability that the portfolio will lose no more than $18 million on a given day.

C. There is a 5% probability that the portfolio will lose $18 million on a given day.

D. There is a 5% probability that the portfolio will lose no more than $18 million on a given day.

56. A Canadian-based tire company is due a $2,500,000 SGD payment from its Singapore-based distributor in two months. The Canadian firm hedges the exchange rate risk using a forward contract priced at $0.80 CAD/SGD. If the Singapore dollar depreciates over the next two months to a spot rate of $0.73 CAD/SCD, how much more or less will the Canadian-based tire firm receive in Canadian dollars by hedging, versus an unhedged position?

A. $175,000 CAD more.

B. $175,000 CAD less.

C. $70,000 CAD more.

D. $29,167 SGD less.

57. Which of the following statements is correct regarding the use of the F-test and the F-statistic?

I. For simple linear regression, the F-test tests the same hypothesis as the t-test.

II. The F-statistic is used to find which items in a set of independent variables explain a significant portion of the variation of the dependent variable.

A. I only.

B. II only.

C. Both I and II.

D. Neither I nor II.

58. An investor wishes to compute the exchange rate of a 7-month futures contract on the Swiss franc. Each contract controls 125,000 Swiss francs and is quoted in terms of dollar/franc. Suppose the current exchange rate is 1.02 dollar/ franc. What is the 7-month futures exchange rate assuming a continuously compounded risk-free rate in Switzerland of 2% and a continuously compounded risk-free rate in the U.S. of 1%?

A. 0.987 dollar/franc.
B. 1.002 dollar/franc.
C. 1.014 dollar/franc.
D. 1.225 dollar/franc.

59. Worse-than-VAR scenarios are defined as scenarios that lead to losses in the extreme left tail of the return distribution equal to or exceeding VAR at a given level of confidence. Which of the following statements is an accurate description of VAR?
A. VAR is the average of the worse-than-VAR scenario returns.
B. VAR is the standard deviation of the worse-than-VAR scenario returns.
C. VAR is the most pessimistic scenario return (maximum loss) from the worse-than-VAR scenarios.
D. VAR is the most optimistic scenario return (minimum loss) from the worse-than-VAR scenarios.

60. Assume that portfolio daily returns are independent and identically normally distributed. Sam Neil, a new quantitative analyst, has been asked by the portfolio manager to calculate portfolio VARs over 10, 15, 20, and 25 days. The portfolio manager notices something amiss with Sam's calculations, displayed here. Which one of the following VARs on this portfolio is inconsistent with the others?
A. VAR(10-day) = USD 316M
B. VAR(15-day) = USD 465M
C. VAR(20-day) = USD 537M
D. VAR(25-day) = USD 600M

61. Mary has IBM stock and will sell it two months from now at a specified date in the middle of the month. Mary would like to hedge the price of risk of IBM stock. How could she best hedge the IBM stock without incurring basis risk?
A. Short a two-month forward contract on IBM stock
B. Short a three-month futures contract on IBM stock
C. Short a two-month forward contract on the S&P 500 index
D. Answers A. and B. are correct.

62. Which of the following statements is/are true with respect to basis risk?
I. Basis risk arises in cross-hedging strategies, but there is no basis risk when the underlying asset and hedge asset are identical.
II. A short hedge position benefits from unexpected strengthening of basis.
III. A long hedge position benefits from unexpected strengthening of basis.
A. I and II

B. I and III
C. II only
D. III only

63. XYZ Co. is a gold producer and will sell 10,000 ounces of gold in three months at the prevailing market price at that time. The standard deviation of the change in the price of gold over a three-month period is 3.6%. In order to hedge its price exposure, XYZ Co. decides to use gold futures to hedge. The contract size of each gold futures contract is 10 ounces. The standard deviation of the gold futures price is 4.2%. The correlation between quarterly changes in the futures price and the spot price of gold is 0.86. To hedge its price exposure, how many futures contracts should XYZ Co. go long or short?

A. Short 632 contracts
B. Short 737 contracts
C. Long 632 contracts
D. Long 737 contracts

64. You have a portfolio of USD 5 million to be hedged using index futures. The correlation coefficient between the portfolio and futures being used is 0.65. The standard deviation of the portfolio is 7% and that of the hedging instrument is 6%. The futures price of the index futures is USD 1,500 and one contract size is 100 futures. Among the following positions, which one reduces risk the most?

A. Long 33 futures contracts
B. Short 33 futures contracts
C. Long 25 futures contracts
D. Short 25 futures contracts

65. When the 7 year par rate is 2.20%, a market maker sells (writes) $40.0 million face value of call options on a 7-year U.S. Treasury note with a strike of 110 and a dollar value of an '01 (DV01) of $0.0250 per 100 face value. The underlying U.S. Treasury note has a price of 109.00 and a DV01 of $0.0620 per 100 face value. Which is nearest to the hedge trade?

A. Short $3.9 million face amount of the T-notes
B. Short $9.0 million face amount of the T-notes
C. Purchase $5.5 million face amount of the T-notes
D. Purchase $16.1 million face amount of the T-notes

66. Ms. Zheng is responsible for the options desk in a London bank. She is concerned about

the impact of dividends on the options held by the options desk. She asks you to assess which options are the most sensitive to dividend payments. What would be your answer if the value of the options is found by using the Black-Scholes model adjusted for dividends?

A. Everything else equal, out-of-the-money call options experience a larger decrease in value than in-the-money call options as expected dividends increase.

B. The increase in the value of in-the-money put options caused by an increase in expected dividends is always larger than the decrease in value of in-the-money call options.

C. Keeping the type of option constant, in-the-money options experience the largest absolute change in value and out-of-the-money options the smallest absolute change in value as expected dividends increase.

D. Keeping the type of option constant, at-the-money options experience the largest absolute change in value and out-of-the-money options the smallest absolute change in value as a result of dividend payment.

67. An investor is long a short-term at-the-money put option on an underlying portfolio of equities with a notional value of USD 100,000. If the 95% VAR of the underlying portfolio is 10.4%, which of the following statements about the VAR of the option position is correct when second-order terms are considered?

A. The VAR of the option position is slightly more than USD 5,200.

B. The VAR of the option position is slightly more than USD 10,400.

C. The VAR of the option position is slightly less than USD 5,200.

D. The VAR of the option position is slightly less than USD 10,400.

68. The following GARCH(1,1) model is used to forecast the daily return variance of an asset: $\sigma_n^2 = 0.000005 + 0.05u_{n-1}^2 + 0.92\sigma_{n-1}^2$

Suppose the estimate of the volatility today is 5.0% and the asset return is -2.0%. What is the estimate of the long-run average volatility per day?

A. 1.29%

B. 1.73%

C. 1.85%

D. 1.91%

69. John is forecasting a stock's price in 2011 conditional on the progress of certain legislation in the United States Congress. He divides the legislative outcomes into three categories of "Passage", "Stalled" and "Defeated" and the stock's performance into three categories of "increase", "constant" and "decrease" and estimates the following events:

	Passage	Stalled	Defeated
Probability of legislative outcome	20%	50%	30%
Probability of increase in stock price given legislative outcome	10%	40%	70%
Probability of decrease in stock price given legislative outcome	60%	30%	10%

A portfolio manager would like to know that if the stock price does not change in 2011, what the probability that the legislation passed is Based on John's estimates, this probability is:

A. 15.5%

B. 19.6%

C. 22.2%

D. 38.7%

70. Each of the following is TRUE with respect to duration and convexity EXCEPT:

A. Both modified and Macaulay duration are denoted in units of "years"

B. To estimate bond price change with both duration and convexity, per two-term Taylor series, is still to employ a single-factor measure of sensitivity that assumes a parallel shift in the yield curve

C. With respect to a plain vanilla bond (without embedded options), bond convexity increases with maturity, decreases with coupon rate and decreases with yield

D. At low yields, a callable bond exhibits negative convexity and therefore negative duration

71. John Diamond is evaluating the existing risk management system of Rome Asset Management and identified the following two risks.

I. Rome Asset Management's derivative pricing model consistently undervalues call options

II. Swaps with counterparties exceed counterparty credit limit

These two risks are most likely to be classified as:

A. Market

B. Credit

C. Liquidity

D. Operational

72. If the daily, 90% confidence level, value-at-risk (VaR) of a portfolio is correctly estimated to be USD 5,000, one would expect that in one out of:

A. 10 days, the portfolio value will decline by USD 5,000 or less.
B. 90 days, the portfolio value will decline by USD 5,000 or less.
C. 10 days, the portfolio value will decline by USD 5,000 or more.
D. 90 days, the portfolio value will decline by USD 5,000 or more.

73. A bank had entered into a 3-year interest rate swap for a notional amount of USD 300 million, paying a fixed rate of 7.5% per year and receiving LIBOR annually. Just after the payment was made at the end of the first year, the continuously compounded 1-year and 2-year annualized LIBOR rates were 7% per year and 8% per year, respectively. The value of the swap at that time was closest to which of the following choices?

A. USD -14 million
B. USD -4 million
C. USD 4 million
D. USD 14 million

74. On Nov 1, Jimmy Walton, a fund manager of an USD 60 million US medium-to-large cap equity portfolio, considers locking up the profit from the recent rally. The S&P 500 index and its futures with the multiplier of 250 are trading at USD 900 and USD 910, respectively. Instead of selling off his holdings, he would rather hedge two-thirds of his market exposure over the remaining 2 months. Given that the correlation between Jimmy's portfolio and the S&P 500 index futures is 0.89 and the volatilities of the equity fund and the futures are 0.51 and 0.48 per year respectively, what position should he take to achieve his objective?

A. Sell 250 futures contracts of S&P 500
B. Sell 169 futures contracts of S&P 500
C. Sell 167 futures contracts of S&P 500
D. Sell 148 futures contracts of S&P 500

75. Alan bought a futures contract on a commodity on the New York Commodity Exchange on June 1. The futures price was USD 500 per unit and the contract size was 100 units per contract. Alan set up a margin account with initial margin of USD 2,000 per contract and maintenance margin of USD 1000 per contract. The futures price of the commodity varied as shown below. What was the balance in Alan's margin account at the end of day on June 5?

Day	**Futures Price (USD)**
June 1	497.30

June 2	492.70
June 3	484.20
June 4	471.70
June 5	468.80

A. -USD 1,120
B. USD 0
C. USD 880
D. USD 1,710

76. Recall that a factor portfolio is a well-diversified portfolio constructed to have a beta of 1.0 on one of the factors in a multi-factor arbitrage pricing theory (APT) model, and a beta of zero on any other factor. Assume that exactly two (2) systematic factors affect stock returns and there exists the following two factor portfolios:

- The first factor portfolio, with exposure only to factor F(1), has an expected return of 9.0%.
- The second factor portfolio, with exposure only to factor F(2), has an expected return of 11.0%.

The risk-free rate is 2.0%. Consider a well-diversified portfolio (A) with beta on the first factor, B(A,1), equal to 0.40 and beta on the second factor, B(A,2) equal to 0.80. What is the expected return on portfolio (A)?

A. 9.50%
B. 10.25%
C. 12.00%
D. 14.75%

77. An analyst is doing a study on the effect on option prices of changes in the price of the underlying asset. The analyst wants to find out when the deltas of calls and puts are most sensitive to changes in the price of the underlying. Assume that the options are European and that the Black-Scholes formula holds. An increase in the price of the underlying has the largest absolute value impact on delta for:

A. Deep in-the-money calls and deep out-of-the-money puts.
B. Deep in-the-money puts and calls.
C. Deep out-of-the-money puts and calls.
D. At-the-money puts and calls.

78. Which of the following statements is incorrect, given the following one-year rating transition matrix?

From/To (%)	AAA	AA	A	BBB	BB	B	CCC/C	D	Non Rated
AAA	87.44	7.37	0.46	0.09	0.06	0,00	0.00	0.00	4.59
AA	0.60	86.65	7.78	0.58	0.06	0.11	0.02	0.01	4.21
A	0.05	2.05	86.96	5.50	0.43	0.16	0.03	0.04	4.79
BBB	0.02	0.21	3.85	84.13	4.39	0.77	0.19	0.29	6.14
BB	0.04	0.08	0.33	5.27	75.73	7.36	0.94	1.20	9.06
B	0.00	0.07	0.20	0.28	5.21	72.95	4.23	5.71	11.36
CCC/C	0.08	0.00	0.31	0.39	1.31	9.74	46.83	28.83	12.52

A. BBB loans have a 4.08% chance of being upgraded in one year

B. BB loans have a 75.73% chance of staying at BB for one year

C. BBB loans have an 88.21% chance of being upgraded in one year

D. BB loans have a 5.72% chance of being upgraded in one year

79. You are the risk manager of a fund. You are using the historical method to estimate VaR. You find that the worst 10 daily returns for the fund over the period of last 100 trading days are -1.0%, -0.3%, -0.6%, -0.2%, -2.7%, -0.7%, -2.9%, 0.1%, -1.1%, -3.0%. What is the daily VaR for the portfolio at the 95% confidence level?

A. -0.6%

B. -0.7%

C. -1.0%

D. -3.0%

80. John is forecasting a stock's performance in 2010 conditional on the state of the economy of the country in which the firm is based. He divides the economy's performance into three categories of "GOOD", "NEUTRAL" and "POOR" and the stock's performance into three categories of "increase", "constant" and "decrease".

He estimates:

- The probability that the state of the economy is GOOD is 20%. If the state of the economy is GOOD, the probability that the stock price increases is 80% and the probability that the stock price decreases is 10%.
- The probability that the state of the economy is NEUTRAL is 30%. If the state of the economy is NEUTRAL, the probability that the stock price increases is 50% and the probability that the stock price decreases is 30%.
- If the state of the economy is POOR, the probability that the stock price increases is

15% and the probability that the stock price decreases is 70%.

Billy, his supervisor, asks him to estimate the probability that the state of the economy is NEUTRAL given that the stock performance is constant. John's best assessment of that probability is closest to:

A. 15.5%
B. 19.6%
C. 20.0%
D. 38.7%

81. In the case of Barings Bank (Barings), Nick Leeson incurred huge trading losses. Which of the following statements correctly describes one of the factors that led to the bankruptcy of Barings?

A. Barings had insufficient liquidity to cover marked to market losses.
B. Leeson used a long straddle strategy on the Nikkei 225.
C. Leeson held speculative double short positions in the market for Nikkei 225 futures contracts.
D. There was ambiguity concerning who was responsible for performing specific oversight functions.

82. WEB, an investment-banking firm, is the principal underwriter for MTEX's upcoming debenture issue. Lynn Black, FRM, is an analyst with WEB, and she learned from an employee in MTEX's programming department that a serious problem was recently discovered in the software program of its major new product line. In fact, the problem is so bad that many customers have canceled their orders with MTEX. Black checked the debenture's prospectus and found no mention of this development. The red herring prospectus has already been distributed. According to the GARP Code of Conduct, Black's best course of action is to:

A. Inform her immediate supervisor at WEB of her discovery.
B. Keep quiet because this is material nonpublic inside information.
C. Notify potential investors of the omission on a fair and equitable basis.
D. Report her discovery to the Division of Corporation Finance of the Securities and Exchange Commission.

83. A butterfly spread can be created by buying:

A. A call option with a low strike price and then selling a call option with a higher strike price.
B. A put option with a high strike price and then selling a put option with a lower strike price.
C. A put option with a low strike price, buying another put option with a higher strike price,

and selling two put options with a strike price halfway between the low and high strike options.

D. A call option with a high strike price, buying another call option with a higher strike price, and two call options with a strike price halfway between the low and high strike options.

84. A stack-and-roll hedge as described in the Metallgesellschaft case is best described as:

A. Buying futures contracts of different expirations and allowing them to expire in sequence.

B. Buying futures contracts of different expirations and closing out the position shortly before expiration.

C. Using short-term futures to hedge a long-term risk exposure by replacing them with longer-term contracts shortly before they expire.

D. Using short-term futures contracts with a larger notional value than the long-term risk they are meant to hedge.

85. Which of the following statements are TRUE?

I The convexity of a 10-year zero coupon bond is higher than the convexity of a 10-year, 6% bond

II The convexity of a 10-year zero coupon bond is higher than the convexity of a 6% bond with a duration of 10 years.

III Convexity grows proportionately with the maturity of the bond

IV Convexity is always positive for all types of bonds.

V Convexity is always positive for "straight" bonds.

A. I only

B. I and II only

C. I and V only

D. II, III, and V only

86. Two companies, C and D, have the borrowing rates shown in the following table.

Borrowing Rates for C and D		
Company	Fixed Borrowing	Floating Borrowing
C	10%	LIBOR+50bps
D	12%	LIBOR+100bps

According to the comparative advantage argument, what is the total potential savings for C and D if they enter into an interest rate swap?

A. 0.5%.

B. 1.0%

C. 1.5%.

D. 2.0%.

87. In commodity markets, the complex relationships between spot and forward prices are embodied in the commodity price curve. Which of the following statements is true?

A. In a backwardation market, the discount in forward prices relative to the spot price represents a positive yield for the commodity supplier.

B. In a backwardation market, the discount in forward prices relative to the spot price represents a positive yield for the commodity consumer.

C. In a contango market, the discount in forward prices relative to the spot price represents a positive yield for the commodity supplier.

D. In a contango market, the discount in forward prices relative to the spot price represents a positive yield for the commodity consumer.

88. Consider the following statements about bond reinvestment risk and bond duration interest rate risk):

I. Lower bond reinvestment implies higher interest rate risk (duration), ceteris Paribus(其他条件保持不变)

II. Due to reinvestment risk, the yield-to-maturity on a bond is unlikely to equal the bond's realized return.

III. Reinvestment risk is eliminated in a zero-coupon bond.

Which of the above statements is (are) true?

A. I only

B. I and II.

C. II and III.

D. All three

89. Financial assets are stored (please note this is different than having a storage cost) but electricity is effectively non-storable. Consider three possible implications of electricity's non-storability:

I. The electricity forward curve performs a price discovery function (it contains unique information not already contained in the spot price of electricity)

II. Unlike the forward curve of a financial asset, we expect the electricity forward curve to contain swings

III. Unlike a financial commodity where the forward price can be expressed as a function of the expected future spot price, F(0) = E[S(t)]*exp[(r - a)T] where (r) is the riskfree rate and (a) is the discount rate, the electricity forward price cannot be similarly expressed.

According to McDonald, which of the statements is TRUE about the electricity forward curve?

A. I. Only
B. I. and II Only
C. I. and III Only
D. All three are true

90. A portfolio contains three independent bonds each with identical (i.i.d.) $100 par value, 3.0% probability of default (EDF) and loss given default (LGD) of 100%. What is, respectively, the 95.0% confident and 99.0% confident portfolio value at risk (VaR)?

A. zero and zero at both 95% and 99%
B. $100 and $100 at both 95% and 99%
C. $200 at 95% and $300 at 99%
D. $285 at 95% and $300 at 99%

91. Over the next year, a operational process model predicts an 95% probability of no loss occurrence and a 5% probability of a single loss occurrence. If the single loss occurs, the severity is characterized by three possible outcomes: $10.0 million loss with 20% probability, $18.0 million loss with 50% probability, and $25.0 million loss with 30% probability. What is the model's one-year 90% expected shortfall (ES)?

A. $9.25 million
B. $10.00 million
C. $13.88 million
D. $18.50 million

92. A bank has a $10 million commitment (COM) of which $6 million is outstanding (OS) and the usage given default (UGD) assumption is 50.0%. The probability of default (PD) is 1.0% and the loss conditional on default (LGD) has a beta distribution with a mean of 70.0% and a standard deviation of 25.0%. The PD and LGD are not independent; rather, PD and LGD are positively correlated. What is the expected loss (EL) of the adjusted exposure (AE)?

A. Less than $56,000
B. $56,000
C. More than $56,000
D. $112,000

93. An exposure has a default probability (PD) of 4.0% and loss given default of 50.0%. The standard deviation of the LGD is 25.0%. What is the ratio of the unexpected loss to the expected loss, UL/EL?

A. 1.33

B. 3.72
C. 5.50
D. 9.64

94. Consider three potential statements about Metallgesellschaft (MG):

I. MG employed a stack -and-roll hedge because liquidity was highest for short-dated oil futures contracts.
II. MG employed a stack -and-roll hedge, and a stack hedge has greater basis risk than a strip hedge.
III. The roll return in MG's stack -and-roll hedge was profitable under oil backwardation but losing under oil contango.

Which of the statements is TRUE?

A. I. only
B. II. Only
C. I. and II. Only
D. All three

95. The forward rate of a 3-month EUR/USD foreign exchange contract is 1.1565USD per EUR. EUR LIBOR is 4% and USD LIBOR is 2%. The spot USD per EUR exchange rate is closest to:

A. 1.1336
B. 1.1507
C. 1.1623
D. 1.1799

96. For an option-free bond, which of the following are the effects of the convexity adjustment on the magnitude (absolute value) of the approximate bond price change in response to an increase in yield and in response to a decrease in yield and in response to a decrease in yield, respectively?

	Decrease in Yield	Increase in Yield
A.	Increase in magnitude	Decrease in magnitude
B.	Increase in magnitude	Increase in magnitude
C.	Decrease in magnitude	Decrease in magnitude
D.	Decrease in magnitude	Increase in magnitude

97. Samantha Fore, FRM, is examining foreign asset-liability positions that are mismatched in individual currencies at regional financial institutions. Fore is specifically looking at the overall currency exposure of the western region consisting of three banks: Mountain West、First Interstate, and Glacier Bank. Given the uncertainty in non-U.S.markets, Fore is

concerned about a euro collapse.

	Mountain West	**First Interstate**	**Glacier Bank**
EUR Assets	1,350,000	500,000	875,000
EUR Liabilities	2,000,000	400,000	1,550,000
EUR Bought	275,000	150,000	2,450,000
EUR Sold	650,000	375,000	1,875,000

On an aggregate basis, how would this region's euro exposure be characterized?

A. The aggregate euro exposure faces the risk that the euro will rise in value against the domestic currency.
B. The aggregate euro exposure faces the risk that the euro will fall in value against the domestic currency.
C. The banks, collectively, are net long euros.
D. The banks, collectively, are close to evenly matched and face little euro exposure.

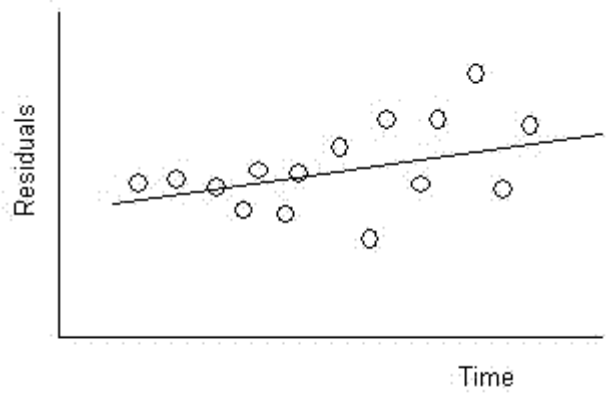
98. Analyst Rob has identified an estimator, denoted T(.), which qualifies as the best linear unbiased estimator (BLUE). If T(.) is BLUE, which of the following must also necessarily be TRUE?

A. T(.) must have the minimum variance among all possible estimators
B. T(.) must be the most efficient (the "best") among all possible estimators
C. It is possible that T(.) is the maximum likelihood (MLE) estimator of variance; i.e., SUM([X - average (X)]^2)/(n-1)
D. Among the class of unbiased estimators that are linear, T(.) has the smallest variance.

99. A distribution of returns that has a greater percentage of small deviations from the mean and a greater percentage of extremely large deviations from the mean:

A. is positively skewed.
B. is a symmetric distribution.
C. has positive excess kurtosis,
D. has negative excess kurtosis.

100. Consider the following graph of residuals and the regression line from a time-series regression:



These residuals exhibit the regression problem of:

A. homoskedasticity.

B. autocorrelation.

C. heteroskedasticity.

D. multicolinearity.