LO.a: Compare alternative investments with traditional investments.

1. Alternative investment funds are *most likely* managed:
   A. passively.
   B. to generate positive beta return.
   C. to generate a positive alpha return.

2. Compared with traditional investments, alternative investments are *more likely* to be characterized by higher:
   A. transparency.
   B. liquidity.
   C. expected returns.

3. Relative to traditional investments, alternative investments are *less likely* to be characterized by:
   A. low correlation with traditional investments.
   B. high level of regulation.
   C. unique legal and tax consideration.

4. Which of the following factors is *most likely* to be a characteristic of alternative investments?
   A. Narrow manager specialization.
   B. High regulation.
   C. High transparency.

5. Alternative investments are *least likely* to be characterized by higher:
   A. fees.
   B. illiquidity.
   C. transparency.

LO.b: Describe categories of alternative investments.

6. Which of the following is *least likely* to be considered an alternative investment?
   A. Hedge funds.
   B. Real estate.
   C. Long-only stock funds.

7. Which of the following is *most likely* to be correct about return?
   A. Beta, a measure of sensitivity, relative to a particular market index, is a measure of unsystematic risk.
   B. Owing to existing inefficiencies, a positive return can be earned through exploitation and after adjustment of beta risk. This is defined as alpha return.
   C. Alpha returns are correlated with beta returns and are presumably the result of managers' special skills in capturing non-systematic opportunities.

LO.c: Describe potential benefits of alternative investments in the context of portfolio management.

8. An investor is *most likely* to consider adding alternative investments to a traditional investment portfolio because of their:
   A. low sharp ratio.
   B. high correlation with traditional investments.
   C. diversifying potential.

LO.d: Describe hedge funds, private equity, real estate, commodities, and other alternative investments, including, as applicable, strategies, sub-categories, potential benefits and risks, fee structures, and due diligence.

9. Which of the following is *least likely* to be based on realized profits for a funds' structure?
   A. Incentive fee.
   B. Management fee.
   C. Performance fee.

10. Which of the following is *least likely* to be a characteristic of a hedge fund?
    A. It is an aggressively managed portfolio of investments across asset classes.
    B. Investors may be required to keep their money in the hedge fund for a minimum period known as a lock-up period.
    C. It is an investment opportunity available to the public and requires hefty investment.

11. Which of the following statements is *most likely* to be correct about funds of funds?
    Statement I: Funds of funds are funds that hold a portfolio of hedge funds.
    Statement II: Funds of funds presumably have some expertise in conducting due diligence on hedge funds.
    Statement III: Funds of funds may be able to negotiate better redemption.
    A. Statements I and II.
    B. Statements I and III.
    C. Statements I, II, and III.

12. Which of the following is *least likely* to be a hedge fund strategy?
    A. Event driven.
    B. Micro.
    C. Relative value.

13. A type of private equity fund that invests in established profitable and cash generative companies with solid customer bases, proven products, and high quality management is *most likely* described as a (an):
    A. venture capital.
    B. angel investing.
    C. leveraged buyout.

14. An investor may prefer a fund of funds to a single hedge fund if she:
    A. seeks better redemption terms.
    B. is concerned about extra layer fee structure.
    C. is willing and able to make a large initial investment.

15. Analyst 1: The management fee for a private equity fund is based on assets under management.
    Analyst 2: The management fee for a private equity fund is based on committed capital.
    Which analyst's statement is *most likely* correct?
    A. Analyst 1.
    B. Analyst 2.
    C. Neither of them.

16. Which of the following investments is *most* suitable for an investor looking for competitive long-term total return driven by both income generation and capital appreciation?
    A. Hedge funds.
    B. Real estate.
    C. Commodities.

17. If capital is provided to companies moving towards operations but before commercial production and sales have occurred, then it is *most likely*:
    A. angel investing.
    B. seed-stage financing.
    C. early stage financing.

18. Venture capital entails investing in:
    A. struggling public companies.
    B. well established private companies with stable cash flows.
    C. private companies with high growth potential.

19. Which of the following is *least likely* the characteristic of an attractive target company for a leveraged buyout?
    A. Company is not being run efficiently.
    B. Company's stock is depressed.
    C. Company's cash flow is volatile.

20. Which of the following is the *most accurate* description of contango?
    A. A situation where the spot price exceeds the forward or futures price.
    B. A situation where the forward or futures price exceeds the spot price.
    C. A situation where the forward or futures price is equivalent to the spot price.

21. Which of the following is *least likely* a form of real estate investment?
    A. Mortgage-backed securities.
    B. Real estate limited partnerships.
    C. Leveraged buyouts.

22. Investors are *least likely* to gain exposure to commodities because:
    A. they want to trade in a physical product.
    B. commodity prices have historically been correlated with inflation.
    C. commodity prices are linked to economic growth.

23. Which of the following is *least likely* a method for investing in commodities?
    A. Commodity index futures.
    B. Options contracts on commodities.
    C. Direct investment in commodities.

24. Which of the following is *least likely* a private equity strategy?
    A. Buyout funds.
    B. Venture capital.
    C. Merger arbitrage.

25. If the price of a commodity futures contract is below the spot price, it is *most likely* that the:
    A. roll yield is negative.
    B. convenience yield exceeds the cost of carry.
    C. storage costs exceed convenience yield.

26. Which of the following is the *most* liquid alternative investment?
    A. Hedge funds.
    B. Private equity.
    C. Exchanged traded funds.

27. Which of the following hedge fund strategies is *least likely* categorized as an event-driven strategy?
    A. Distressed debt.
    B. Merger arbitrage.
    C. Fixed income arbitrage.

28. Which of the following characteristics of a target company is *most likely* attractive for a leveraged buyout?
    A. High leverage.
    B. Economic environment.
    C. Strong and sustainable cash flows.

29. The futures price of wheat is higher than the spot price. This is most likely to be referred to as:
    A. backwardation.
    B. arbitrage.
    C. contango.

30. Which of the following is most likely to be correct for commodities?
    A. Investors deal in commodity derivatives because holding commodities in physical form incurs costs for transportation and storage.

B. Commodity derivatives are attractive because of potential profits, but are not effective hedges against inflation.
C. Commodity derivatives can only be traded on exchanges and include obligations.

31. When future prices are higher than the spot price, the commodity forward curve is:
    A. upward sloping and prices are referred to as being in contango.
    B. downward sloping and prices are referred to as being in contango.
    C. downward sloping and prices are referred to as being in backwardation.

32. The difference between the spot price of a commodity and the price specified by its futures contract:
    A. Convenience yield.
    B. Collateral yield.
    C. Roll yield.

33. Which of the following is *least likely* to be a characteristic associated with alternative investments?
    A. Asymmetric risk and return profiles.
    B. Illiquidity.
    C. Unlimited portfolio transparency.

34. Which of the following is *least likely* to be correct about hedge fund valuation?
    A. A common practice is to use the average of bid and ask for market quotes and prices.
    B. Ask prices are used for long and bid prices are used for shorts.
    C. Liquidity discounts are deemed necessary to reflect fair value and are also known as haircuts.

35. A minority equity investment in more mature companies looking to enter new markets is *most likely* to be known as:
    A. Development capital.
    B. Distressed investing.
    C. Venture capital.

36. A company is *least likely* to be attractive as a leverage buyout target if:
    A. the company is inefficient and has the potential to perform better.
    B. the company has low leverage and sustainable cash flows.
    C. the market value of the company exceeds its perceived intrinsic value.

37. Imperial Tiles is a company moving towards operation but has not yet started commercial production. Which of the following financing stages is *most likely* to suit the needs of Imperial Tiles?
    A. Early-stage financing.
    B. Seed-stage financing.
    C. Mezzanine-stage financing.

38. Which of the following is *least likely* to be correct about exit strategies for private equity portfolio managers?
    A. A trade sale can be conducted through an auction process or by private negotiation.
    B. An advantage of an initial public offering is that it can be conducted quickly.
    C. Under recapitalization, the private equity firm maintains control, but allows the private equity investor to extract money from the company.

39. Which of the following is *least likely* to be a key reason for investing in real estate?
    A. Potential to avoid government regulations.
    B. Potential for competitive long term total returns.
    C. Potential to provide an inflation hedge.

40. Collateralized mortgage obligations are *most likely* to be an example of:
    A. private debt.
    B. public debt.
    C. public equity.

41. Which of the following is *least likely* to be a portfolio company valuation approach?
    A. Asset based approach.
    B. Comparable sales approach.
    C. Discounted cash flow approach.

LO.e: Describe, calculate, and interpret management and incentive fees and net-of-fees returns to hedge funds.

The following information is for questions 42 to 46

Zee Capital, a hedge fund with an initial investment capital of $200 million had a 40% return in its first year. At year end, a 4% management fee is charged based on the assets under management and a 10% incentive fee is charged. The management fee is calculated using end-of-period valuation.

42. Which of the following is *most likely* to be the incentive fees earned?
    A. $8 million.
    B. $20 million.
    C. $28 million.

43. Which of the following is *most likely* to be the effective return for the investor?
    A. 30.4%.
    B. 34.4%.
    C. 36.0%.

44. Given that the incentive fee is calculated based on return net of management fee, which of the following is *most likely* to be the total fees earned by Zee Capital?
    A. $6.88 million.
    B. $18.08 million.
    C. $20.48 million.

45. Assume that the fee structure specifies a hurdle rate of 5% and the incentive fee is based on returns in excess of the hurdle rate. Furthermore, the performance fee is calculated net of the management fee. Which of the following is *most likely* to be the investor's net return given this fee structure?
    A. 26.21%.
    B. 28.51%.
    C. 31.46%.

46. The fund value declines to $250 million in the second year. Assuming the fee structure is the same as given in the information above but is inclusive of a high water mark, which of the following is *most likely* to be the fees earned by Zee Capital in the second year?
    A. $10 million.
    B. $25 million.
    C. $35 million.

47. Cole Hedge Funds had an invested capital of $100 million. It earned a return of 25% in the first year. Given that it follows a 4 and 20 fee structure, and calculates the incentive and management fees independently, the net return for the investors is *closest* to:
    A. 8%.
    B. 15%.
    C. 20%.

48. The management fee for hedge funds is based on:
    A. initial investment.
    B. committed capital.
    C. assets under management.

49. IFT Capital is a hedge fund with PKR 100 million of initial investment capital. IFT charges a 2% management fee based on assets under management at year end and a 20% incentive fee. The hurdle rate is 10% and the incentive fee is based on returns in excess of the hurdle rate. The incentive and management fees are calculated independently. The fund has a return of 30% for the first year. What is an investor's net return given this fee structure?
    A. 28.50%.
    B. 23.40%.
    C. 21.4%.

50. A hedge fund had invested capital of 200 million on which it earned a return of 35% in its first year. It follows a 2 and 20 fee structure and calculates the incentive net of management fees. The total fee for the hedge fund in the first year is *closest* to:
    A. 44.00 million.
    B. 19.40 million.
    C. 18.32 million.

51. BMB Capital is a hedge fund with a portfolio valued at $500,000,000 at the beginning of the year. One year later, the value of assets under management is $555,500,000. The hedge fund

charges a 2% management fee based on the end-of-year portfolio value as well as a 15% incentive fee. If the incentive fee and management fee are calculated independently, the effective return for a hedge fund investor is *closest* to:
   A. 7.21%.
   B. 7.55%.
   C. 11.1%.

52. A hedge fund begins the year with $200 million and earns a 20% return for the year. The fund charges a 1% management fee on end-of-year fund value and a 10% incentive fee on the return, net of the management fees, that is in excess of a 10% fixed hurdle rate. The fund's investors' return for the year, net of fees, is *closest* to:
   A. 16.80%.
   B. 16.92%.
   C. 17.92%.

53. The following information is available about a hedge fund:

Initial investment capital	£200 million
Return at the end of one year	15%
Management fee based on assets under management	2%
Incentive fee based on the return net of the management fee	10%

Assume management fees are calculated using end-of-period valuation. The investor's net return given this fee structure is *closest* to:
   A. 11.20%.
   B. 11.43%.
   C. 13.00%.

54. The following information is available about a hedge fund:

Initial fund assets	$200 million
Fund assets at the end of the period (before fees)	$225 million
Management fee based on assets under management	1%
Incentive fee based on the return	15%
Soft hurdle rate	12%

No deposits to the fund or withdrawals from the fund occurred during the year. Management fees are calculated using end-of-period valuation. Management fees and incentive fees are calculated independently. The net-of-fees return of the investor is *closest* to:
   A. 9.5%.
   B. 9.67%.
   C. 11.5%.

55. A hedge fund with an initial value of $200 million has a management fee of 2% and an incentive fee of 20%. Management and incentive fees are calculated independently using

end-of-period valuation. The value must reach the previous high water mark before incentive fees are paid. The table below provides end-of-period fund values over the next three years.

	Fund Value ($ millions)	
Year	**Before Fees**	**After Fees**
1	240	227.2
2	220	215.6
3	250	?

The total amount of fees earned by the hedge fund in Year 3 is *closest* to:

A. $8.56 million.
B. $9.56 million.
C. $11.00 million.

56. The management fee of a hedge fund that has not yet invested all of its committed capital is *most likely* based on:

    A. invested capital.
    B. remaining capital.
    C. committed capital.

Use the following information to answer questions 57 to 64

SHM Capital is a hedge fund with $200 million of initial investment capital. They charge a 3 percent management fee based on assets under management at year-end and a 15 percent incentive fee. In its first year, SHM Capital has a 28 percent return. Assume management fees are calculated using end-of-period valuation.

57. If the incentive and management fees are calculated independently, the fees earned by SHM is *closest* to:

    A. $7.680 million.
    B. $14.928 million.
    C. $16.080 million.

58. What is an investor's effective return if the incentive and management fees are calculated independently?

    A. 18.46%.
    B. 19.96%.
    C. 20.54%.

59. If the incentive fee is calculated based on return net of the management fee, the fees earned by SHM is *closest* to:

    A. $7.68 million.
    B. $14.93 million.
    C. $16.08 million.

60. What is an investor's effective return if the incentive fee is calculated based on return net of the management fee?
    A. 18.46%.
    B. 19.96%.
    C. 20.54%.

61. If the fee structure specifies a hurdle rate of 8% percent and the incentive fee is based on returns in excess of the hurdle rate, what are the fees earned by SHM assuming the performance fee is calculated net of the management fee?
    A. $12.528 million.
    B. $13.680 million.
    C. $14.928 million.

62. If the fee structure specifies a hurdle rate of 8% percent and the incentive fee is based on returns in excess of the hurdle rate, what is an investor's net return?
    A. 20.54%.
    B. 21.16%.
    C. 21.74%.

63. If the fee structure specifies a hurdle rate of 8% percent and the incentive fee is based on returns in excess of the hurdle rate, what are the fees earned by SHM assuming the incentive and management fees are calculated independently?
    A. $12.52 million.
    B. $13.68 million.
    C. $14.92 million.

64. If the fee structure specifies a hurdle rate of 8% percent and the incentive fee is based on returns in excess of the hurdle rate, what is an investor's net return assuming the incentive and management fees are calculated independently?
    A. 20.54%.
    B. 21.16%.
    C. 22.74%.

Use the following information to answer questions 65 to 72

SHM Capital is a hedge fund with $200 million of initial investment capital. They charge a 3 percent management fee based on assets under management at year-end and a 15 percent incentive fee. In its first year, SHM Capital has a 28 percent return. Assume management fees are calculated using end-of-period valuation. In the second year, the fund value declines to $225 million. In the third year, the fund value increases to $250 million.

65. If the incentive and management fees are calculated independently, the fees earned by SHM in the second year is *closest* to:
    A. $2.10 million.
    B. $4.65 million.
    C. $6.75 million.

66. If the incentive and management fees are calculated independently, an investor's net return for the second year is *closest* to:
    A. 9.03%.
    B. -9.03%.
    C. -9.47%.

67. If the incentive and management fees are calculated independently and also includes the use of a high water mark, the fees earned by SHM in the third year is *closest* to:
    A. $6.75 million.
    B. $8.838 million.
    C. $9.012 million.

68. If the incentive and management fees are calculated independently and also includes the use of a high water mark, what is an investor's net return for the third year?
    A. 9.03%.
    B. 10.42%.
    C. 11.05%.

69. If the incentive fee is calculated net of the management fee, and also includes the use of a high water mark, the fees earned by SHM in the second year is *closest* to:
    A. $2.10 million.
    B. $4.65 million.
    C. $6.75 million.

70. Given the fee structure in the previous question, the investor's net return for the second year is *closest* to:
    A. 9.03%.
    B. -9.03%.
    C. -9.47%.

71. If the incentive and management fees are calculated independently, and also includes the use of a high water mark, the geometric mean annual return over the three-year period is *closest* to:
    A. 6.14%.
    B. 6.41%.
    C. 6.64%.

72. If the incentive fee is calculated based on return net of the management fee, and also includes the use of a high water mark, the geometric mean annual return over the three-year period is *closest* to:
    A. 6.14%.
    B. 6.31%.
    C. 6.44%.

Use the following information to answer questions 73 to 75

An investor is contemplating investing $1000 million in either Giyani Hedge Fund or Beta Fund of Funds. Beta has a "1.25 and 15" fee structure and invests 15 percent of its assets under management in Giyani. Giyani has a standard "3 and 25" fee structure with no hurdle rate. Management fees are calculated on an annual basis on assets under management at the beginning of the year. Management fees and incentive fees are calculated independently. Giyani has a 30 percent return for the year before management and incentive fees.

73. If an investor invests directly in Giyani Hedge Fund, her return is *closest* to:
    A. 18.6%.
    B. 19.5%.
    C. 20.5%.

74. An investor invests in Beta Fund of Funds. The other investments in the Beta portfolio generate the same return before management fees as Giyani Hedge Funds and have the same fee structure as Giyani. Investor's return is *closest* to:
    A. 15.33%.
    B. 19.50%.
    C. 20.50%.

75. An investor would choose to invest in Beta Funds of Funds instead of Giyani Hedge funds because of:
    A. due diligence expertise.
    B. lower fees structure of "1.25 and 15".
    C. larger investment can be made in beta funds.

LO.f: Describe issues in valuing and calculating returns on hedge funds, private equity, real estate, commodities, and infrastructure.

76. If a quoted market price is available for an emerging market fixed income security, the use of liquidity discounts or "haircuts" is actually:
    A. consistent with valuation guidance under most generally accepted accounting standards.
    B. inconsistent with valuation guidance under most generally accepted accounting standards.
    C. not defined in the valuation guidance under most generally accepted accounting standards.

77. If a commodity's forward curve is in backwardation, the component of a commodities futures return *most likely* to reflect this is:
    A. high convenience yield.
    B. negative roll yield.
    C. high spot prices.

78. BMA Hedge Fund and AKD Hedge Fund invest in the same asset class using a similar investment strategy. A potential investor has gathered the following data from the hedge funds:

Characteristic	BMA	AKD
Annualized returns	24%	16%
Track Record	3 years	7 years
Fees	1.25 and 12	1.75 and 18
Sharpe Ratio	1.5	1.8

Based on the above information, the investor is *most likely* to:
A. research how the annualized returns are calculated.
B. invest in BMA because of its higher returns and lower fees.
C. invest in AKD because of its longer track record and higher sharp ratio.

79. AKD private equity fund is considering purchasing a firm that had an EBITDA of PKR 400 billion. In the past year, three firms from the same industry were sold for 5x EBITDA, 6x EBITDA, and 7x EBITDA. Based on this information, the maximum value AKD is *most likely* to assign to the firm is:
A. PKR2,000 billion.
B. PKR2,400 billion.
C. PKR2,800 billion.

80. BMA hedge fund restricts its investment universe to KSE, an actively traded stock exchange of Pakistan. Its NAV will be calculated using:
A. average quotes.
B. deal prices adjusted for liquidity.
C. average quotes adjusted for liquidity.

81. Lydia Smith wishes to find an apartment building's worth using the income approach. The gross potential rental income is $1,750,000, and the net operating income is $362,500. Other bits of information available include the following:

Financing percentage:	75%
Market capitalization rate:	8%
Cost of equity:	10%

Which of the following is *most likely* to be appraisal price of the building?
A. $10,750,000.
B. $3,625,000.
C. $4,531,250.

82. Alpha Hedge Fund uses a market neutral strategy. The fund takes long and short positions in relatively liquid instruments for which bid/ask prices are available. Given that the funds employs a conservative valuation approach, it *most likely* uses:
A. bid prices for long positions and ask prices for short positions.
B. ask prices for long positions and bid prices for short positions.
C. bid prices for both long and short positions.

83. Which of the following is *least likely* a source of return for commodities related investments?
    A. Convenience yield.
    B. Interest yield.
    C. Spot price return.

84. An analyst is using an income based approach to value a REIT. Which of the following will he *least likely* use as a measure of income?
    A. EBITDA.
    B. FFO.
    C. AFFO.

85. A private equity fund is considering purchasing a small software company. Similar software companies have sold 7 x EBITDA, 8 x EBITDA and 9 x EBITDA in the previous 3 months. The target company's EBITDA is $100 million. Based on this information, the *maximum* value of the software company is:
    A. $14.28 million.
    B. $1,000 million.
    C. $900 million.

86. Which of the following is *least likely* a main source of return for commodities futures contracts?
    A. Dividend yield.
    B. Collateral yield.
    C. Convenience yield.

87. If the level of broad inflation indices is largely determined by commodity prices, the average nominal yield on direct commodity investments is *most likely*:
    A. equal to zero.
    B. equal to inflation.
    C. less than inflation.

LO.g: Describe risk management of alternative investments.

88. Statement 1: An analyst wanting to assess the downside risk of an alternative investment should use the Sharp ratio.
    Statement 2: An analyst wanting to assess the downside risk of an alternative investment should use the Sortino ratio.
    Which statement is *most likely* correct?
    A. Statement 1.
    B. Statement 2.
    C. Neither of them.

89. Which of the following is *most accurate* for risk-return measures evaluating alternative investments?
    A. Due to illiquid nature of assets, volatility estimates are overstated.
    B. Most alternative investments show positively skewed return distributions.

C. Calculation of value-at-risk using standard deviation leads to an understated figure.

90. The value at risk of an alternative investment is *best* described as the:
    A. Fixed amount of loss expected over a given time period at a given probability level.
    B. Maximum amount of loss expected over a given time period at a given probability level.
    C. Minimum amount of loss expected over a given time period at a given probability level.

Solutions

1. C is correct. Most alternative investment funds are actively managed and seek to generate positive alpha returns.

2. C is correct. Alternative investments are typically less transparent and less liquid compared to traditional investments.

3. B is correct. Relative to traditional investments, alternative investments are characterized by low correlation with traditional investments, low level of regulation, and unique legal and tax considerations.

4. A is correct. General characteristics of alternative investments include: illiquidity of underlying investments, narrow manager specialization, low correlation with traditional investments, low level of regulation and less transparency, limited and potentially problematic historical risk and return data, unique legal and tax considerations.

5. C is correct. Alternative investments are often characterized by higher fees and illiquidity.

6. C is correct. Long-only stock funds are typically considered traditional investments and hedge funds and real estate are typically classified as alternative investments.

7. B is correct. A is incorrect because beta is a measure of systematic risk. C is incorrect because alpha returns are not correlated with beta returns.

8. C is correct. A key motivation for investing in alternative investments is their diversifying potential when combined with a traditional portfolio.

9. B is correct. The management fee, also called the base fee, is based on assets under management.

10. C is correct. Hedge funds are set up as a private investment open to a limited number of investors willing and able to make a large initial investment.

11. C is correct. All three statements regarding funds of funds are correct.

12. B is correct. Macro, and not micro, is a hedge fund strategy.

13. C is correct. A type of private equity fund that invests in established profitable and cash generative companies with solid customer bases, proven products, and high quality management is most likely described as a leveraged buyout.

14. A is correct. Funds of funds presumably have some expertise in conducting due diligence on hedge funds and may be able to negotiate more favorable redemption terms than could an individual investor in a single hedge fund.

15. B is correct. The management fee for private equity funds is based on committed capital whereas for hedge funds the management fees are based on assets under management.

16. B is correct. One of the key reasons for investing in real estate is the potential for competitive long-term total returns driven by both income generation and capital appreciation.

17. C is correct. Early stage financing (early stage venture capital) is provided to companies moving toward operation but before commercial production and sales have occurred.

18. C is correct. Venture capital entails investing in private companies with high growth potential.

19. C is correct. Characteristics of an attractive target company for LBOs include: undervalued or depressed stock price, willing management, inefficient companies, strong and sustainable cash flows, low leverage, and significant amount of physical assets.

20. B is correct. Backwardation is a situation where the spot price exceeds the forward or futures price. The opposite is true for contango.

21. C is correct. Leveraged buyouts are highly leveraged transactions where private equity firms establish buyout funds to acquire public companies or established private companies with significant proportion of the purchase price financed through debt. It is a form of private equity investment rather than real estate investment. Securitization of retail and commercial mortgages such as in mortgage-backed securities and real estate limited partnerships are forms of real estate investment.

22. A is correct. Only a small group of investors trades in physical commodities while most investors invest in commodities using commodity derivatives rather than the physical good itself.

23. C is correct. The majority of commodities investing is implemented through derivatives.

24. C is correct. Buyout funds and venture capital (VC) funds are collectively referred to as private equity.

25. B is correct. Since the futures price is less than the spot price, the market is in backwardation. The convenience yield must be more than the cost of carry to arrive at a futures price below the spot price because the futures price is approximately equal to: spot price * (1 + r) + storage cost – convenience yield. The cost of carry is defined as interest cost plus storage cost. When the market is backwardation the roll yield for the long party is positive.

26. C is correct. Exchanged traded funds are publically traded and thus provide liquidity.

27. C is correct. Distressed debt and merger arbitrage are event driven strategies.

28. C is correct. Strong and sustainable cash flow is an attractive feature of a target company in a leveraged buyout.

29. C is correct. Contango is when the futures price of a commodity is above the spot price.

30. A is correct. B is incorrect because commodity derivatives are effective hedges against inflation. C is incorrect because commodity derivatives can be traded over the counter. Furthermore, commodity derivatives include options and swaps.

31. A is correct. A downward sloping curve occurs when the futures prices are lower than the spot price. This condition is called backwardation.

32. C is correct. Roll yield refers to the difference between the spot price of a commodity and the price specified by its futures contract.

33. C is correct. Alternative investments are associated with limited portfolio transparency.

34. B is correct. Bid prices are used for long and ask prices are used for shorts.

35. A is correct. Development capital refers to minority equity investment in more mature companies looking to enter new markets

36. C is correct. A company is an attractive leverage buyout target if the perceived intrinsic value of the company exceeds the market value.

37. A is correct. Early stage financing is provided to companies moving toward operation but before commercial production and sales have occurred.

38. B is correct. A disadvantage of an initial public offering is that the lead times are long.

39. A is correct. A concern for real estate is that it is subject to government regulations affecting what can be done to modify the existing property and how it can be transferred.

40. B is correct. Collateralized mortgage debt is an example of public debt.

41. B is correct. A comparable sales approach is used to value real estate.

42. A is correct. $\text{Incentive Fee} = (200 * 1.4 - 200) * 0.1 = \$8 \text{ million}$

43. A is correct.

$$\text{Effective Return } = \frac{\text{Investment worth} - \text{Initial Capital} - \text{Total fees}}{\text{Initial Capital}}$$

$$\text{Total fees} = \text{Incentive fee} + \text{Management fee} = \$8 + (200 * 1.4 * 0.04) = \$19.2$$

$$\text{Effective Return } = \frac{280-200-19.2}{200} = 30.4\%.$$

44. B is correct.
$\text{Management fee} = \$200 * 1.4 * 0.04 = \$11.2.$
$\text{Incentive fee} = (200 * 1.4 - 200 - 11.2) * 10\% = \$6.88.$
$\text{Total fee} = 11.2 + 6.88 = \$18.08.$

45. C is correct.
$\text{Management fee} = \$200 * 1.4 * 0.04 = \$11.2$
$\text{Hurdle} = \$200 * 5\% = \$10$
$\text{Incentive fee} = (200 * 1.4 - 200 - 10 - 11.2) * 10\% = \$5.88$
$$\text{Effective Return } = \frac{280 - 200 - 11.2 - 5.88}{200} = 31.46\%$$

46. A is correct.
$\text{Management fee} = \$250 * 0.04 = \$10.$ Because the fund declined in value, there will be no incentive fee.

47. B is correct.
$\text{Management fee} = 100 * 1.25 * 0.04 = \$5 \text{ million}$
$\text{Incentive fee} = (100 * 1.25 - 100) * 0.2 = \$5 \text{ million}$
$$\text{Return} = \frac{100 * 1.25 - 100 - 10}{100} = 15\%$$

48. C is correct. The management fee for hedge funds is based on assets under management.

49. B is correct.
Step 1: Calculate the management fee.
Value of investment at the end of first year (after return) = 100 million * 1.30 = 130 million.
Management fee = 130 million * 0.02 = 2.6 million.
Step 2: Calculate the incentive fee.
Given a 10% hurdle rate, the amount to consider for the incentive fee = 30 – 10 = 20 million.
Incentive fee = 20 million * 0.20 = $4.0 million.
Total fees earned = 2.6 million + 4.0 million = 6.6 million.
Investor’s net return = $\frac{130.00 - 6.60}{100.00} = \frac{123.40}{100} - 1$ = 23.4%.

50. C is correct.
Invested capital = 200,000,000
Value of fund after a year = 200,000,000 * 1.35 = 270,000,000.
Management fee = 270,000,000 * 0.02 = 5,400,000.
Incentive fees = (270,000,000 – 200,000,000 – 5,400,000) * 0.2 = 12,920,000.
Total fee = 5,400,000 + 12,920,000 = 18,320,000.

51. A is correct.
Management fee = $555,500,000 * 0.02 = $11,110,000.
Incentive fee = ($555,500,000 – $500,000,000) * 0.15 = $8,325,000.
Total fees = $19,435,000.

Return = $\frac{\$555,500,000 - \$500,000,000 - \$19,435,000}{\$500,000,000}$ = 7.21%.

52. C is correct.
Value of fund after a year = $200,000,000 * 0.2 = $240 million.
Management fee = $240,000,000 * 0.01 = $2.4 million.
Incentive fee net of management fees and in excess of 10% fixed hurdle rate:
(240,000,000 - 200,000,000 - 2,400,000 – 20,000,000) *0.1 = $1.76 million.
Investor's return, net of fees = $\frac{240 - 200 - 2.4 - 1.76}{200}$ = 17.92%.

53. B is correct.
Management fee = 200 * 1.15 * 0.02 = £4.6 million
Incentive fee = (230 -200 – 4.6 million) * 0.1 = £2.54 million
Fund value after fees = £230 million – £4.6 million – £2.54 million = £222.86 million
Investor return = $\frac{222.86 \text{ million}}{200 \text{ million}} - 1$ = 11.43%.

54. A is correct.
The soft hurdle rate is surpassed, because the return of the fund is 12.50%. For that reason, the full fee, based on the full performance, is due.
Management fee =225 million * 0.01 = $2.25 million.
Incentive fee = $25 million * 0.15 = $3.75 million.
Total fees = $6 million.
Fund assets at the end of the period after fees = 225 – 6 = $219 million.
Return for the investor = $\frac{219}{200} - 1$ = 9.5%.

55. B is correct.
Incentive fee is based on the performance relative to the previous high-water mark after fees.
Management fee = $250 million * 0.02 = $5 million.
Incentive fee = ($250 million – $227.2 million) * 0.2 = $4.56 million.
Total fees = $5 million + $4.56 million = $9.56 million.

56. A is correct. The management fee of hedge funds is based on invested capital until the committed capital is fully drawn down and invested. This approach is in contrast to private equity funds, for which the management fee is based on committed capital.

57. C is correct.
Value of the fund at the end of year = 200*1.28 = 256
Management fee = $256 million * 0.03 =$7.68 million.
Incentive fee = ($256 – $200) million * 0.15 = $8.4 million.
Total fees to SHM Capital = $16.08 million.

58. B is correct.
Investor return = $\frac{\$256 - \$200 - \$16.08}{\$200}$ = 19.96%.

59. B is correct.
    Management fee = $256 million * 0.03 = $7.68 million.
    Incentive fee = ($256 – $200 – $7.68) million * 0.15 = $7.24 million.
    Total fees to SHM Capital = $14.928 million.

60. C is correct.
    Investor's return = $\frac{\$256 - \$200 - \$14.928}{\$200}$ = 20.54%.

61. A is correct.
    Management fee = $256 million * 0.03 = $7.68 million.
    Incentive fee = ($256 – $200 – $16 – $7.68) million * 0.15 = $4.848 million.
    Total fees to SHM Capital = $12.528 million.

62. C is correct.
    Investor's return = $\frac{\$256 - \$200 - \$12.528}{\$200}$ = 21.74%.

63. B is correct.
    Management fee = $256 million * 0.03 = $7.68 million.
    Incentive fee = ($256 – $200 – $16) million * 0.15 = $6.00 million.
    Total fees to SHM Capital = $13.68 million.

64. B is correct.
    Investor's return = $\frac{\$256 - \$200 - \$13.68}{\$200}$ = 21.16%.

65. C is correct.
    Management fee = $225 million * 0.03 = $6.75 million.
    No incentive fee because the fund has declined in value.
    Total fees to SHM Capital = $6.75 million.

66. B is correct.
    First, calculate the beginning capital position in the second year.
    Management fee at the end of first year = $200 million * 1.28 *0.03 = $7.68 million.
    Incentive fee = (256 million – 200 million) * 0.15 = $8.4 million
    Beginning capital position at the start of second year = $256 - $7.68 - $8.4 = $239.92 million.
    Ending capital position at the end of the second year = $225 − $6.75 = $218.25 million.
    Investor return = $\frac{\$225 - \$6.75 - \$239.92}{\$239.92}$ = −9.03%.

67. C is correct.
    Management fee = $250 million * 0.03 = $7.5 million.
    $239.92 million represents the high-water mark established at the end of Year 1.
    Incentive fee = ($250 – $239.92) * 0.15 = $1.512 million.
    Total fees to SHM Capital = $7.5 + $1.512 = $9.012 million.

68. B is correct.

Investor return = $\frac{\$250 - \$9.012 - \$218.25}{\$218.25}$ = 10.42%.
The ending capital position at the end of Year 3 is \$240.988 million. This is the new high-water mark.

69. C is correct.
Management fee = \$225 million * 0.03 = \$6.75 million management fee.
No incentive fee because the fund has declined in value.
Total fees to SHM Capital = \$6.75 million.

70. C is correct.
Management fee at the end of first year = \$200 million * 1.28 *0.03 = \$7.68 million.
Incentive fee = (256 million – 200 million – 7.68) * 0.15 = \$7.248 million
Beginning capital position in the second year = \$256 − \$7.68 – \$7.248 = \$241.072 million. This is new high water mark established at the end of year 1.
Ending capital position at the end of the second year = \$225 − \$6.75 = \$218.25 million. There is no incentive fee in the second year because the fund has declined in value.
Investor return = $\frac{\$225 - \$6.75 - \$241.072}{\$241.072}$ = −9.47%.

71. B is correct. Geometric mean annual return = $\left(\frac{\$240.988}{200}\right)^{\frac{1}{3}} - 1$ = 6.41%

72. C is correct. Geometric mean annual return = $\left(\frac{\$241.161}{200}\right)^{\frac{1}{3}} - 1$ = 6.44%

73. B is correct.
Profit of Giyani Hedge Fund before fees = \$1000 million * 0.3 = \$300 million.
Management fee = \$1000 million *0.03 = \$30 million.
Incentive fee = 300 million * 0.25 = \$75 million.
Return to the investor = $\frac{300 - 30 - 75}{1000}$ = 19.5%.

74. A is correct.
Return earned by Beta = €1000 million * 0.195 = \$195 million.
Management fee = \$1000 million * .0125 = \$12.5 million.
Incentive fee = \$195 million * 0.15 = \$29.25 million.
Return to the investor = $\frac{195 - 12.5 - 29.25}{1000}$ = 15.33%.

75. A is correct. Funds of funds presumably have some expertise in conducting due diligence on hedge funds and may be able to negotiate more favorable redemption terms than an individual investor in a single hedge fund.

76. B is correct. If a quoted market price is available for an emerging markets fixed income security, the use of liquidity discounts or "haircuts" is actually inconsistent with valuation guidance under most generally accepted accounting standards. However, many practitioners believe that liquidity discounts are necessary to reflect fair value.

77. A is correct. When futures prices are lower than the spot price, the commodity forward curve is downward sloping, and the prices are referred to as being in backwardation. Backwardation occurs when the convenience yield is high.

78. A is correct. First he should research how returns are calculated and if they are comparable before making any decision.

79. C is correct. The maximum value AKD is most likely to assign is that using the highest multiple (7 × PKR400 billion = PKR2,800 billion).

80. A is correct. BMA is most likely to use average quotes. The securities are actively traded so no liquidity adjustment is required.

81. C is correct.

$$\text{Appraisal price } = \frac{\text{NOI}}{\text{Market capitalization rate}}$$

$$\text{Appraisal price} = \frac{362{,}500}{0.08} = 4{,}531{,}250$$

Note that we divide NOI by the capitalization rate and not by the cost of equity. Financing cost is not considered because the valuation process is independent of financing.

82. A is correct. The conservative and theoretically accurate approach is to use bid prices for long positions and ask prices for short positions. These are the prices at which the positions could be closed.

83. B is correct. The three main sources of return for a commodities investment are collateral yield, roll yield or the convenience yield, and spot price return.

84. A is correct. In REIT valuation, two common measures of income are funds from operations (AFO) and adjusted funds from operations (AFFO).

85. C is correct. The maximum value is simply EBITDA times the highest multiple: $100 \text{ million} * 9$ = 900 million.

86. A is correct. Main sources of return for a commodities futures contract are collateral yield, roll yield (also called convenience yield), and spot price return.

87. B is correct. As the price increases of commodities are mirrored in higher price indices, the nominal return is equal to inflation and the real return is zero.

88. B is correct. Downside risk measures focus on the left side of the return distribution curve where losses occur. Sortino ratio is a measure of downside risk.

89. C is correct. Most alternative investments tend to be leptokurtic and negatively skewed i.e. with fat tails due to positive average returns and long-tails downside due to potential extreme losses. Since their distribution is not close to normal distribution but is negatively skewed, standard deviation is not an appropriate measure for volatility and hence leads to an understated VaR figure. Moreover, since alternative investments are generally illiquid, the use of estimated rather than actual transaction prices result in smoothed out or overstated returns and understated volatility/standard deviation.

90. C is correct. The value at risk of an alternative investment is best described as the minimum amount of loss expected over a given time period at a given probability level.