Question Paper
Mutual and other Funds (CFA650) : October 2008

Section A : Basic Concepts (30 Marks)

- This section consists of questions with serial number 1 - 30.
- Answer all questions.
- Each question carries one mark.
- Maximum time for answering Section A is 30 Minutes.

1. An investor under a Mutual Fund scheme is entitled to receive information about the 'Net Asset Value' at intervals not exceeding <Answer >

(a) One week
(b) Two weeks
(c) One month
(d) Two months
(e) Three months.

2. A pension fund has certain liabilities, the duration of which is 12 years. It has the following assets in its asset portfolio: <Answer >

Assets	Remaining maturity (Years)	Weight (%)
ICICI 2016 Deep Discount Bond	8	40
IDBI 2018 Zero Coupon Bond	10	60

Pension fund is facing

(a) Reinvestment risk
(b) Tenure risk
(c) Inflation risk
(d) Political risk
(e) Insurance risk.

3. Which of the following strategies of hedge funds is 'Hard-to-value' strategy? <Answer >

(a) Equity market neutral
(b) Equity hedge
(c) Relative value arbitrage
(d) Merger arbitrage
(e) Distressed securities.

4. Global Finance Co., an FII, is planning to invest in real estate in USA. While analyzing the financial conditions in USA, it observes that the percentage of outstanding international debts in terms of country GDP is very high. The type of risk being faced by USA is <Answer >

(a) Political risk
(b) Economic risk
(c) Credit risk
(d) Country risk
(e) Market risk.

5. Mr. Rohan is 25 years old investor. '100 minus your age' method of asset allocation suggests that he can invest <Answer >

(a) 100% of his investible funds in stocks
(b) 25% of his investible funds in bonds and 75% of his investible funds in stocks
(c) 50% of his investible funds in bonds and 50% of his investible funds in stocks
(d) 75% of his investible funds in bonds and 25% of his investible funds in stocks
(e) 100% of his investible funds in bonds.

6. The finance provided to a company which plans to go public with in a short period of time is usually known as <Answer >

(a) Bridge financing
(b) Mezzanine financing
(c) Acquisition financing
(d) Turnaround financing
(e) Private placement financing.

7. Mr. Kumar opts for an investment plan being offered by Kotak Mutual Fund, where he invests Rs.5,000 every month for the period of 24 months in the units of equity diversified scheme. Accordingly, he purchases more units when scheme's NAV is low and fewer units when NAV is high. The investment plan opted by Mr. Kumar is <Answer >

(a) Automatic Reinvestment Plan
(b) Systematic Encashment Plan
(c) Systematic Transfer Plan
(d) Automatic Investment Plan
(e) Fixed Systematic Transfer Plan.

8. A 9.5% GOI bond is currently trading in the market at a price of Rs.971. If the face value of the bond is Rs.1,000 and the remaining maturity of the bond is 5 years, the yield to maturity will be approximately <Answer >

(a) 11.25%
(b) 10.98%
(c) 10.64%
(d) 10.45%
(e) 10.28%.

9. Which of the following is **not** an advantage of investment in mutual funds? <Answer >

(a) Diversification benefits
(b) Low transaction costs
(c) Availability of various schemes to suit different needs
(d) Professional management
(e) Selection of stocks as per the liking of the investors.

10. Tauras mutual fund offers a Fund of Fund scheme. The offer document of the scheme specifies about two risk factors: standard risk factors and specific risk factors. Which of the following can be considered as standard risk factors? <Answer >

I. Owing to increase in inflation, RBI hikes the CRR rate, which in turn puts pressure on liquidity in market and adversely affects the Net Asset Value (NAV) of mutual fund.
II. The scheme invests in close-ended schemes, which invest in the units of overseas mutual fund schemes in globally emerging market and due to recession in that economy NAV of mutual fund decreases.
III. NAV of mutual fund decreases because government changes some of its major policy.
IV. Changes in tax laws affect the return on investment in units.

(a) (I), (II) and (III) above
(b) (I), (II) and (IV) above
(c) (I), (III) and (IV) above
(d) (II), (III) and (IV) above
(e) All (I), (II), (III) and (IV) above.

11. Which of the following statements is/are **true** with respect to ExMark? <Answer >

I. Fund with an ExMark of 95% or above may be called an index fund.
II. The usual name for the concept of ExMark is R-squared.
III. For a typical mainstream equity fund, the ExMark usually runs from 30% to 40%.

(a) Only (I) above
(b) Only (III) above
(c) Both (I) and (II) above
(d) Both (II) and (III) above
(e) All (I), (II) and (III) above.

12. In accordance with the regulations, SEBI acts as a watchdog to control any unethical or unfair business practices. Which of the following practices is/are considered unethical by the SEBI? <Answer>

I. Mr. Nathani, controlling shareholder of the Jargon Ltd., decides to sell his shares almost double the market price. He describes his decision to his sister, who tells her friend, Piyush, who is fund manager. Piyush immediately buys Jargon Ltd. stock for himself with the expectation that he can sell when the share price double due to the action of Mr. Nathani.
II. Mr. Kaushik, MD of mutual fund scheme, is a close friend of Mr. Ahmed. He allows Mr. Ahmed to exit the scheme without paying any exit load.
III. Mr. Jain, a fund manager, is managing a portfolio, which has a significant share in Jack Ltd. Mr. Jain is a good friend of Mr. Kamal, president of Jack Ltd. Owing to superior stock selection skills, during a period, the return on the portfolio managed by Mr. Jain is 125%.

(a) Only (I) above
(b) Only (III) above
(c) Both (I) and (II) above
(d) Both (II) and (III) above
(e) All (I), (II) and (III) above.

13. The Sharpe ratio and Treynor ratio of Reliance Equity Fund are 0.57 and 7.46 respectively. Standard deviation of the fund's return is 15.20%. The beta of the fund is approximately <Answer>

(a) 0.80
(b) 1.16
(c) 1.35
(d) 1.50
(e) 1.76.

14. Which of the following strategies of asset allocation assumes that the risk tolerance of the investor is highly sensitive to his net worth? <Answer>

(a) Systematic asset allocation
(b) Flexible asset allocation
(c) Strategic asset allocation
(d) Tactical asset allocation
(e) Insured asset allocation.

15. The rupee cost averaging gives maximum return, when <Answer>

I. It is undertaken for a fairly long period.
II. Underlying stock prices first decline and then rise.
III. Underlying stock price remains unchanged.

(a) Only (I) above
(b) Only (II) above
(c) Only (III) above
(d) Both (I) and (II) above
(e) Both (I) and (III) above.

16. If the NAV of the mutual fund scheme is Rs.12.1678 per unit and unamortized initial issue expenses is Re.0.3768 per unit, the redemption price of unit of mutual fund scheme is <Answer>

(a) Rs.12.5446
(b) Rs.12.1678
(c) Rs.11.7910
(d) Rs.10.3459
(e) Rs. 9.1458.

17. The NAV of each unit of a closed-end fund at the beginning of the year was Rs.14. By the year end, its NAV equals Rs.14.40. At the beginning of the year, each unit was selling at a 3% premium to NAV. By the end of the year, each unit is selling at a 5% discount to NAV. The fund paid year-end distributions of income and capital gains of Rs.2.40 on each unit. The rate of return to the investor in the fund during the year is approximately <Answer>

(a) 10.125%
(b) 10.826%
(c) 11.512%
(d) 11.962%
(e) 12.124%.

18. Mr. Roshan buys a 8-year, 11% annuity deposit certificate for Rs.34,897.50. The annuity he is entitled to receive over the 8-year period will be approximately <Answer>

(a) Rs.10,659.75
(b) Rs. 9,362.19
(c) Rs. 8,650.25
(d) Rs . 7,987.98
(e) Rs. 6,781.35.

19. Consider the following data of Omega Mutual Fund (Income plan): <Answer>

	(Rs.in million)
Value of investments	2,874.20
Receivables	180.80
Accrued income	163.45
Accrued expenses	84.86
Other liabilities	390.86
Other current assets	481.52

Number of outstanding units is 200 million. Entry load and exit load applicable to this scheme are 1.5% and 2.5% respectively. If the investor sells his units, the per unit price he will get is approximately

(a) Rs.19.76
(b) Rs.17.36
(c) Rs.16.12
(d) Rs.15.72
(e) Rs.15.54.

20. Which of the following statements is **true** with respect to Venture capital? <Answer>

(a) Venture capital is a capital investment which can be in the form of equity only
(b) Venture capital is a long term investment and usually carries low risk
(c) Venture capital is passive investment strategy
(d) Venture capital shares the characteristics of private equity fund investment
(e) Venture capital and traditional lending and borrowing are almost similar.

21. Which of the following is **not** an exit strategy available to a Venture capital fund? <Answer>

(a) Initial public offerings
(b) Strategic buy
(c) Buy back by promoters
(d) Merger and Acquisition
(e) Liquidation of the company.

22. Which of the following can be considered as ‘bootstrap transaction’? <Answer>

(a) Pension funds
(b) Hedge funds
(c) Venture capital
(d) Private equity investment
(e) Leveraged buyout.

23. Which of the following statements is **not true** with respect to features of general insurance fund? <Answer>

(a) Catastrophic risk can be very significant
(b) Significant provisions for unearned premiums and outstanding claims are made
(c) Claims are less frequent than in life policies
(d) The increasing significance of investment income in fixing premiums lead to a tendency to distinguish an underwriting profit or loss from an insurance profit or loss in the accounts
(e) Investments are mostly made for either short-term or medium-term contracts.

24. ABC Ltd. offered right shares to its shareholders in the ratio of 4:1 at the rate of Rs.150 per share. The ex-rights price of the share is Rs.175. The value of right will be <Answer>

(a) Rs.6.25
(b) Rs.6.75
(c) Rs.6.95
(d) Rs.7.05
(e) Rs.7.25.

25. Which of the following statements is **not true** with respect to different types of mutual funds? <Answer>

(a) Balanced funds are suitable for those investors, who are willing to take moderate risk
(b) Income fund generally invest a major portion of their funds in equities
(c) Exchange traded funds provide investors a fund that closely tracks the performance of an index with the ability to buy/sell on an intra-day basis
(d) Leveraged fund engages in speculative and risky investments, like short sales to take advantage of declining market
(e) Growth fund schemes are suitable to those investors who can bear short-term decline in value.

26. Which of the following statements is/are **not true** with respect to yield curve? <Answer>

I. The maturity periods are taken on Y-axis and market determined interest rates on the X-axis to draw the yield curve.
II. Normally, a yield curve starts on the left with the short maturity and ends on the right with the longest maturity.
III. When the yields on the bonds are expected to go along at the normal economy growth rates, the yield curve tends to be gently upward rising.
IV. Inverted curve is situation where long term investors look for higher yield.

(a) Only (I) above
(b) Only (III) above
(c) Both (I) and (IV) above
(d) Both (III) and (IV) above
(e) All (I), (II), (III) and (IV) above.

27. Contra fund has a beta of 1.1 with residual risk of 8%. If the risk of the market returns is 32%, the tracking error is approximately <Answer>

(a) 9.78%
(b) 8.62%
(c) 7.67%
(d) 6.65%
(e) 5.98%.

28. A fund manager is managing certain portfolio. Which of the following managed portfolios may contain the element of tracking error risk? <Answer>

I. The benchmark index comprises only investment grade bonds, but the managed portfolio consists of both investment grade as well as non investment grade bonds.
II. The benchmark index consists of mortgage-backed securities and the managed portfolio does not include them.
III. The duration for the benchmark index is 5 years and that of a managed portfolio is also 5 years.

(a) Only (III) above
(b) Both (I) and (II) above
(c) Both (I) and (III) above
(d) Both (II) and (III) above
(e) All (I), (II) and (III) above.

29. Mr. Rakshak opines that construction industry has a bright future and hence he wants to invest in a common stock fund that invests only in the stocks of companies operating in construction industry. Which of the following funds is more suitable to Mr. Rakshak for investment? <Answer>

(a) Growth funds
(b) Value funds
(c) Broad-based specialty funds
(d) Concentrated specialty funds
(e) Tax saving funds.

30. Which of the following statements are **true** with respect to bond laddering strategy? <Answer>

I. Bond laddering means buying bonds scheduled to mature at several different dates in the future, rather than all at the same time.
II. A bond laddering is an effective tool for some one who needs to ride the yield curve.
III. In bond laddering, each group of bonds represents a rung on the investment maturity ladder.
IV. Bond laddering is an active bond management strategy.

(a) Both (I) and (II) above
(b) Both (I) and (III) above
(c) Both (III) and (IV) above
(d) (I), (II) and (III) above
(e) (I), (III) and (IV) above.

END OF SECTION A

Section B : Problems/Caselets (50 Marks)

- This section consists of questions with serial number 1 – 5 .
- Answer all questions.
- Marks are indicated against each question.
- Detailed workings/explanations should form part of your answer.
- Do not spend more than 110 - 120 minutes on Section B.

1. Mr. Shah is handling different schemes of a large mutual fund for the last three years. The information pertaining to the schemes are given below: <Answer>

Scheme	Alpha/Residual risk	Beta	Alpha (%)
Kotak Equity Diversified Scheme	1.0	1.4	1.5
Reliance Equity Diversified Scheme	0.5	0.7	0.9
Principal Equity Diversified Scheme	0.6	2.5	2.5
M&S Equity Diversified Scheme	1.5	1.6	2.0

Treynor ratio and Sharpe ratio for market portfolio are 6.5 and 0.5 respectively. T-Bills are trading in the market at 7.5% p.a.

You are **required** to

a. Compute the return from all the schemes. **(4 marks)**
b. Compute Treynors ratio for all the schemes. **(4 marks)**
c. Compute Sharpe ratio for all the schemes. **(8 marks)**

Caselet 1

Read the caselet carefully and answer the following questions:

2. As per the caselet, there are two categories of multi manager funds; Fund of Funds (FoF) and Manage The Manager (MTM) funds. How do you differentiate these two categories of multi manager funds? **(10 marks)** <Answer>

3. According to the caselet, depending on just one fund manager or a fund house to produce astounding returns is not advisable, because, different fund houses have different investment styles, and perform differently under different market **(6 marks)** <Answer>

conditions. This idea has resulted in the emergence of multi manager funds. In this context, explain the advantages of multi manager funds.

For the retail investor, investment options are getting complicated day by day. It is not different from mutual funds. The enormous categories, various asset classes, many product innovations and hundreds of schemes, make the investment process difficult and confusing. The need of the hour is simplification. Multi-manager mutual funds, is one such step and it has already made its way into the Indian market. Currently, multi-manager funds manage nearly $1,400bn worldwide. In India, a few investment houses such as Birla Sun Life, Franklin Templeton, Standard Chartered, and Pru ICICI have introduced multi-manger funds in the form of Funds of Funds (FoFs). However, the fund is distributed among their own schemes. Investment houses such as Kotak, Fidelity and ABN Amro have introduced FoFs that partly invest outside their 'in-house' schemes. On the other hand, OptiMix has products with zero brand bias, the first in India. Different fund houses have different investment styles, and perform differently under different market conditions. So, how can you rely on just one fund manger or a fund house to produce astounding returns? After all, just as the very best batsmen can play a bad shot and get out for a duck, the greatest investment manger can go through bouts of poor performance. Here's where multi- manager funds score a ton.

So, what are multi-manager funds? Multi-manager funds employ the skills of investment managers to manage the assets. A lazy way of looking at such funds would be to describe them as something that bundles the best performing managers into a single fund. Multi-manager funds aim to achieve better long-term returns than a single-manager fund, with less volatility. It's like saying the sum-of-the-parts is greater than the whole.

Investors around the world want the best investment managers manage their money for them and they want to diversify their investments across more than one manager. Multi-manager funds address these needs directly.

They offer exposure to the investment expertise of some of the leading investment management firms selected and monitored by a specialist in the field and make them available in a convenient package to easy to buy and monitor. Multi-manager funds come in different forms - from aggressive to defensive - depending on the exposure to equities and Gsecs.

Multi-manager funds tend to give investors exposure to different fund management styles with inputs from the multi-manager fund itself. There are two categories of multi manager funds – Funds of Funds (FoF) and Manage The Manager (MTM).

The difference being the former invests in different funds and the latter invests in equities directly under the guidance and advice of appointed fund managers. So, the latter is most likely to have a lower-cost factor. In MTM, every manager has a specific mandate based on its expertise in a certain investment style. Therefore, it's easier to manage and is less expensive. In India, OptiMix offers MTM mutual funds, while other investment houses that have multi-manger products, offer only FoFs.

Next, let's look at costs. All funds carry an entry load and an annual charge. How much that adds up to is a grey area and fund houses are not comfortable in revealing it. However, the industry has maximum permissible charge of 2.5%, though FoFs can charge 0.75% extra. This extra charge is not applicable to MTM funds.

A good way to find out whether the fund is expensive is to look at the expense ratio. Internationally multi-manager funds have an expense ratio between 2.5% and 3.5%, which is typically higher than single manager funds that charge anything between 1.5% and 2%. The expense ratio is the figure investors must consider because it takes into account not just the annual management fees but also all other costs.

Charges are one of the important parameters in determining long term growth for your money. In MTM funds, a moot point is that the underlying manager fees are not charged to the fund separately. From a taxation point of view, MTM funds are treated similar to any other mutual fund. So, they don't come under the FoFs umbrella where there are tax issues. So, as an investor in MTM funds, you have access to the best of managers without any extra cost and the same tax benefit.

So, are multi-manager funds worth it? Since, all these funds are recently launched in India, it would be foolhardy to make a comparison of such funds with diversified mutual funds in India. An analysis among international funds however shows that since their inception, most multi-manager funds have performed more consistently than the single-manager funds. But, like a diversified portfolio is better than an individual stock, multi-manager funds may be a better idea than single manager funds.

END OF CASELET 1

Caselet 2

Read the caselet carefully and answer the following questions:

4. As mentioned in the caselet, venture capital funds have the ability to invest in unlisted and longer tenure projects, but have high minimum contribution requirements, thus leaving out the retail investors. Analyze why it is difficult to make retail investors participate in infrastructure development through Venture Capital Funds (VCFs). <Answer>

(8 marks)

5. As mentioned in the caselet, the proposed Dedicated Infrastructure Funds (DIFs) will largely invest in unlisted infrastructure projects and/or companies. The level of expertise, resources and commitment required to manage these investments will be significantly higher than as well as different from that used for existing Mutual Funds. Analyse the factors which will increase the cost of managing and operating proposed DIFs compared to current Mutual Funds. <Answer>

(10 marks)

The basic infrastructure a country develops is the backbone for its long-term economic growth and employment generation. It is not possible to achieve inclusive and sustainable growth without the creation of enabling infrastructure in an economy. To sustain its current economic growth trajectory, India will need to develop and augment infrastructure in all the key sectors like Power, Roads, Urban-Infrastructure, Rail, Ports, Airports etc. A sustainable and long-term shift to 9-10% GDP growth rate is only possible, if the country is able to channelize large investments in infrastructure creation. Various government bodies & Committees, international agencies and research houses point to the investment requirement for the infrastructure sector, during the next five years, to be in the range of US$280bn-US$475bn. Considering the magnitude of investments required during the next five years, it is imperative to tap all available sources of the capital and a significant role needs to be played by the private sector. In the 2007 Budget speech for the Financial Year 2007-08, the Hon'ble Finance Minister mentioned the need to promote the flow of investment to the Infrastructure sector by permitting domestic mutual funds to launch and operate Dedicated Infrastructure Funds (DIFs). With a view to suggesting a detailed action/plan for 'operationalising' this, the Securities & Exchange Board of India (SEBI) had set up the Committee to suggest the broad guidelines for launch and operations of DIFs. India is a country of savers. The household savings rate to GDP hovers around the 30% mark. Household savings have traditionally been channelised into Bank Deposits, Small Savings Schemes of the Government, Insurance etc. With the advent of mutual funds, it has been observed that these have increasingly become a significant channel for focused investment into the listed equity and debt markets. Similarly, DIFs, can potentially become an important source of capital for various infrastructure projects that are important for the country's economic development. Such funds can act as channeling agents of capital from Indian retail investors, pension funds, insurance companies as well as overseas institutional investors. DIFs, if they are successful in attracting large retail-investor participation, can also reduce dependence upon foreign capital for investments in infrastructure assets. From an investor perspective, DIFs can also provide an alternative investment opportunity to retail investors and ensure broader public participation in the infrastructure creation in the country.

The proposed DIF's will need to be structured differently from the current Mutual Fund Schemes, as these will largely invest in unlisted companies, with longer gestation periods. Venture Capital Funds have the ability to invest in such unlisted and longer tenure projects, but have high minimum contribution requirements, thus leaving out the retail investors. They can not get listed on the stock exchanges till the expiry of three years from the date of issue and can not reach public domain through advertisements. DIFs can be structured to fill this gap and can be uniquely positioned to benefit both the ongoing infrastructure initiatives as well as the potential retail investors. The Committee believes that DIFs should operate as close-ended schemes with a maturity period of seven years and a possibility of one or two extensions, subject to adequate disclosures in the offer documents and approval of trustees. The proposed DIF's should get listed within 24 months of the launch of the scheme and be allowed to buy-back the units, from the market within certain limits to safeguard the interests of investors. In terms of Investments, it is suggested that the DIF's may be allowed to invest up to 100% of its funds into unlisted securities including both equity and debt instruments. Exposure to listed companies, however, should be limited to 10% of the NAV at the time of making the investments. Further, the DIF's may be allowed to take control of the asset, if they so desire, and own up to 100% of the paid up capital of a company. In light of the unique nature of DIFs like dedicated teams for the management of such schemes, requirement of in-depth research because of companies being unlisted and information not being available, higher level of monitoring of investments, the fee structure of such funds will have to be different from the existing Mutual Fund schemes, in line with global practices. The Committee therefore suggests that maximum overall permissible expense ratio for DIFs including investment management fees be additional 1% over and above that specified in the Mutual Fund Regulations. Additionally, the DIFs should also be allowed to charge a performance fee after providing a certain minimum return to the unit holders, as per global practice. As the proposed Dedicated Infrastructure Funds will largely invest in unlisted infrastructure projects and/or companies, the level of expertise, resources and commitment required to manage these investments will be significantly higher than as well as different from that used for existing Mutual Funds.

END OF CASELET 2

END OF SECTION B

Section C : Applied Theory (20 Marks)

- This section consists of questions with serial number 6 - 7 .
- Answer all questions.
- Marks are indicated against each question.
- Do not spend more than 25 -30 minutes on Section C.

6. Today, mutual funds provide different schemes to suit the risk and return profile of various investors. In this process, they provide the investors with the convenience of periodic purchase plans. In this context, discuss the different investment plans offered by mutual funds in India. **(10 marks)** <Answer>

7. Write short notes on: <Answer>

a. Leveraged Buyout (LBO). **(5 marks)**

b. Real Estate Investment Trusts (REITs). **(5 marks)**

END OF SECTION C

END OF QUESTION PAPER

Suggested Answers
Mutual and other Funds (CFA650) : October 2008

Section A : Basic Concepts

	ANSWER	REASON	
1.	A	An investor under a Mutual Fund scheme is entitled to receive information about the 'Net Asset Value' at intervals not exceeding one week.	< TOP >
2.	A	Duration of assets = (8 X 0.4) + (10X 0.6) = 9.2 Years Duration of liabilities = 12 Years Duration of liabilities > Duration of assets Reinvestment risk arises due to mismatch between duration of assets and duration of liabilities. Therefore pension fund is facing reinvestment risk.	< TOP >
3.	E	A distressed security is 'Hard-to-value' securities.	< TOP >
4.	C	• Political risk indicates the probability of economic losses arising due to government actions. Economic risk arises due to change in macro economic conditions of the country. Credit risk factor measures the percentage of outstanding international debts in terms of country GDP.	< TOP >
5.	B	According to 100 minus your age method, investment in stocks should be equal to 100 minus your age and rest of the money should go to bonds. Hence 75% of the funds should be invested in stocks and 25% in bonds.	< TOP >
6.	A	When a company plans to go public with in a short period of time and funds are required for the maintenance of day-to-day operations, then this type of financing is known as bridge financing.	< TOP >
7.	D	Automatic Investment Plan (AIP), also called Systematic Investment Plan, is a method of investing a fixed sum, on a regular basis, in a mutual fund scheme. The investor is given the option of investing at a specified frequency of months in a specified scheme of the mutual fund for a constant sum of investment. AIP allows investors to plan their savings through a structured regular monthly savings program. AIP makes the volatility in the market work in investor's favor. Since a fixed amount is invested, more units are purchased when a scheme's NAV is low and fewer units when the NAV is high. As a result, over a period of time, these market fluctuations are generally averaged. Thus, the average cost of the investment is often reduced.	< TOP >
8.	E	Let the YTM of the bond be r. $971 = \frac{95}{1+r} + \frac{95}{(1+r)^2} + \frac{95}{(1+r)^3} + \frac{95}{(1+r)^4} + \frac{1095}{(1+r)^5}$ At r = 10% RHS = 981.05 At r = 11% RHS = 944.56 Therefore, r = $10 + \frac{981.05 - 971.00}{981.05 - 944.56} = 10.28\%$	< TOP >
9.	E	All the alternatives a, b, c and d are the advantages of a mutual fund. Alternative (e) is not an advantage as the fund managers though try to have holdings in the flavors of the season however stock selection as per the living of all the investors is not possible.	< TOP >

10. C Standard risk factors arises due to absence of liquidity in the market, changes in the government policy, pressure on the exchange rate of rupee, volatility in market, changes in interest rates, changes in tax laws, etc. Whereas investing in a close ended scheme is a specific risk factor. < TOP >

Therefore, correct answer is C.

11. C Funds with an ExMark of 95% or above may be called an index fund. The usual name for the concept of ExMark is R-squared. For a typical mainstream equity fund, the ExMark usually runs from 80% to 90%. < TOP >

12. C The practices that are considered unethical by the SEBI are: < TOP >

- Insider trading.
- Preferential treatment to selected investors.
- Personal trading by fund managers and employees.

'Insider Trading' means buying or selling securities on the basis of privileged information available to the funds by persons regarded as insiders to the company. In normal cases, the fund managers are not insiders; these people collude with other inside people to access private information, which they use to trade on their personal account. Insider trading is likely to impact investors in a very bad way.

Mutual funds are vehicles of collective investments under which investors in a scheme are treated equally. Thus, the concept of preferential treatment is avoided here.

Personal trading, which is done by fund employees, can create conflicting and at times interesting situations. Fund managers buy and sell securities in the market for the mutual fund portfolios; they have access to information that is unavailable to others.

Statement I is an example of Insider trading, statement II illustrates preferential treatment to selected investors. Statement III is ethical as the returns are due to superior stock selection skills.

Therefore, correct answer is option c.

13. B < TOP >

$$\frac{\text{Treynor} - \text{ratio}}{\text{Sharpe ratio}} = \frac{\dfrac{R_i - R_F}{\beta}}{\dfrac{R_i - R_F}{\sigma_i}} = \frac{\sigma_i}{\beta} = \frac{7.46}{0.57}$$

$$= \frac{\sigma_i}{\beta} = 13.09\%$$

$$\sigma_i = 15.20\%$$

$$\beta = 1.16.$$

14. E The Insured asset allocation strategy assumes that the risk tolerance of the investor is highly sensitive to his net worth. The more the value of this, the larger is his risk tolerance, resulting in a more aggressive asset mix. < TOP >

15. D The rupee cost averaging gives the best result when it is undertaken for a fairly long period. It gives higher return when stock prices first decline and then rise. This ensures the effective cost of purchasing is lower but value of the portfolio is higher. Hence (III) is wrong but (I) and (II) are correct. < TOP >

16. C Redemption price = NAV – Unamortized initial issue expenses per unit < TOP >

Redemption price = 12.1678 – 0.3768 = Rs.11.7910 per unit

17. C The price of unit at the beginning of the year = Rs.14 × 1.03 = Rs.14.42 < TOP >

The price of unit at the end of the year = Rs.14.4 × 0.95 = 13.68

The price of the fund fell by – 0.74 (13.68–14.42)

Rate of return = (2.4 – 0.74)/14.42 = 11.512%.

18. E < TOP >

$$\text{Annuity} = \frac{34,897.50}{PVIFA_{(11\%,8)}}$$

$$= \frac{34,897.50}{5.1461}$$

= Rs.6,781.35.

19. D NAV = (Value of investments + Receivables + Accrued income + Other current assets – Liabilities – Accrued Expenses) / Number of units outstanding < TOP >

= (2874.20 + 180.80 + 163.45 + 481.52 -390.86 – 84.86) / 200 = Rs.16.12

Now the selling price of the investor will be

Rs.16.12 X (1-0.025) = Rs.15.72.

Hence (d) is the answer.

20. D < TOP >

a. Venture capital is a capital investment made in a new firm which can be in the form of equity capital, long term debt or convertible securities.

b. Venture capital is a long term investment and usually carries high risk with the potential for delivering above average returns.

c. Unlike other forms of financing Venture capital is active investment strategy and venture capitalist take keen interest in the business performance of the firm.

d. Venture capital shares the characteristics of private equity fund investment and is treated as one of its branches

e. Venture capital is very different from traditional lending and borrowing.

21. B The following exit alternatives are available for a VC fund depending upon the exit timings, stage of development of the companies or geographical location. < TOP >

- Initial Public Offerings
- Buy back by promoters or company
- Strategic sale
- Merger and Acquisition, and
- Liquidation of the company.

22. E A leveraged buyout may also be referred to as a hostile takeover, a highly leveraged transaction, or a bootstrap transaction. < TOP >

23. C The main features of general funds are: < TOP >

- Significant provisions for unearned premiums and outstanding claims that are made.
- Contracts are short-term, usually annual even if there is an expectation of renewal; premium income is not consistent and reliable, particularly in times of economic stringency.
- Investment income in recent years has become increasingly significant in fixing premiums. This increasing significance has been followed by a tendency to distinguish an underwriting profit or loss from an insurance profit or loss in the accounts.
- Claims are more frequent than in life policies, and as such, investments cannot be made for very long-term contracts.
- Catastrophic risk can be very significant.
- Investments are mostly made for either short-term or medium-term contracts.
- Unless there is an adverse occurrence, there is no payment of bonus or return of paid premiums. So, non-occurrence of an adversity assures a profit for the insurance company.
- These funds are based on the insurance principle of funds collection from many and compensation to a few affected ones.

24. A $V_r = \frac{n}{m} \text{ x } (P_{ex} - P_{of})$ < TOP >

Where,

V_r = Value of rights

n = No. of rights offered = 200/4 = 50

m = No. of original shares held = 200

P_{ex} = Ex-rights price = Rs.175

P_{of} = Rights offer price = Rs.150

$V_r = \frac{1}{4} \text{ x } (175 - 150)$ = Rs.6.25

25. B Balanced fund invest in both units and fixed income securities in the proportion indicated in their offer document. Such funds are suitable for those investors, who are willing to take some risk and seek both income and capital appreciation. The aim of income fund is to provide regular and steady income to investors. These funds or schemes generally invest in fixed incomes such as bonds and corporate debentures. The structure of ETFs is such that it protects long-term investors from inflows and outflows of short-term investors. This is because the fund does not bear extra transaction cost when buying/selling due to frequent subscriptions and redemptions. Leveraged fund engage in speculative and risky investments, like short sales to take advantage of declining market. Growth fund schemes normally invest a major portion of their funds in equities and are willing to bear short-term decline in value for possible future appreciation in the NAV of the scheme. Therefore, statement b is not true and all other options are correct. < TOP >

26. C

I. The maturity periods are taken on X-axis and market determined interest rates on the Y-axis to draw the yield curve. < TOP >

II. Normally, a yield curve starts on the left with the short maturity and ends on the right with the longest maturity.

III. When the yields on the bonds are expected to go along at the normal economy growth rates, the yield curve tends to be gently upward rising.

IV. Inverted curve is a situation where long term investors look for lower yield.

27. B Tracking error of the fund relative to the market is, < TOP >

Tracking error = $\left[(1.1 - 1.0)^2 \ (0.32)^2 + (0.08)^2\right]^{1/2}$ = 8.62%

28. B

I. The benchmark index comprises only investment grade bonds, but the managed portfolio consists of both investment grade as well as non investment grade bonds, then the latter has a greater credit risk than the benchmark index. < TOP >

II. The benchmark index consists of mortgage-backed securities and the managed portfolio does not include them, then the latter is not exposed to prepayment risk.

III. The duration of both benchmark index and managed portfolio is same therefore there will be on tracking error.

29. D

- The objective of growth fund scheme is to provide capital appreciation for the medium to long term investors. < TOP >
- The aim of value fund is to provide regular and steady income to investors as well as growth.
- Concentrated specialty Funds invest in the stocks of single industry, such as pharmaceuticals, IT, etc.
- Broad based specialty funds focus on major market sub-sectors such as new economy and old economy stocks.
- Tax saving funds provides tax savings to investors, along with capital appreciation.

30. B Bond laddering is a passive bond management strategy where the purpose is to match the assets with liability in the terms of maturity. Here the effort is not made to take advantage of change in yield curve. < TOP >

Section B : Problems

1. a. Treynor's ratio for market portfolio = $(R_M–R_F)/\beta_M$ < TOP >

As β_M of market portfolio is 1

Market Risk Premium $(R_M–R_F)$ = 6.5%

Total Return = Alpha + R_f + Beta $(R_m–R_f)$

Kotak Equity Diversified Scheme = 1.5 + 7.5 +1.4 × 6.5 = 18.10%

Reliance Equity Diversified Scheme = 0.9 + 7.5 + 0.7 × 6.5 = 12.95%

Principal Equity Diversified Scheme = 2.5 + 7.5 + 2.5 × 6.5 = 26.25%

M&S Equity Diversified Scheme = 2 + 7.5 + 1.6 × 6.5 = 19.90%

b. Treynor Ratio = $(R_P–R_F)/\beta_P$

Kotak Equity Diversified Scheme = (18.10–7.5)/1.4 = 7.57

Reliance Equity Diversified Scheme = (12.95–7.5)/0.7 = 7.79

Principal Equity Diversified Scheme = (26.25–7.5)/2.5 = 7.50

M&S Equity Diversified Scheme = (19.90–7.5)/1.6 = 7.75

c. Appraisal ratio = Alpha/Residual Risk

Residual risk = Alpha/Appraisal ratio

Kotak Equity Diversified Scheme = 1.5/1 =1.5%

Reliance Equity Diversified Scheme = 0.9/0.5 =1.8%

Principal Equity Diversified Scheme = 2.5/0.6 =4.17%

M&S Equity Diversified Scheme = 2/1.5 = 1.33%

Residual risk^2

Kotak Equity Diversified Scheme = 2.25$(\%)^2$

Reliance Equity Diversified Scheme = 3.24$(\%)^2$

Principal Equity Diversified Scheme = 17.3889(%)2

M&S Equity Diversified Scheme = 1.7689$(\%)^2$

Sharpe's ratio of market portfolio = $(R_M–R_F)/\sigma_M$ = 0.5

σ_M = 6.5/0.5 = 13%

Systematic risk = Beta^2× σ_M^2

Kotak Equity Diversified Scheme = $1.4^2 \times 13^2 = 331.24(\%)^2$

Reliance Equity Diversified Scheme = $0.7^2 \times 13^2 = 82.81(\%)^2$

Principal Equity Diversified Scheme = $2.5^2 \times 13^2 = 1056.25(\%)^2$

M&S Equity Diversified Scheme = $1.6^2 \times 13^2 = 432.64(\%)^2$

Total risk = Residual Risk + Systematic risk

Kotak Equity Diversified Scheme = 2.25 + 331.24 = 333.49 (%)2 S.D = 18.26(%)

Reliance Equity Diversified Scheme = 3.24 + 82.81 = 86.05 $(\%)^2$ S.D = 9.28(%)

Principal Equity Diversified Scheme = 17.3889 + 1056.25 = 1073.6389 $(\%)^2$ S.D = 32.77(%)

M&S Equity Diversified Scheme = 1.7689 + 432.64 = 434.4089 $(\%)^2$ S.D = 20.84(%)

Sharpe Ratio = $(R_P–R_F)/\sigma_P$

Kotak Equity Diversified Scheme = (18.10–7.5)/18.26 = 0.5805%

Reliance Equity Diversified Scheme = (12.95–7.5)/9.28 = 0.5873%

Principal Equity Diversified Scheme = (26.25–7.5)/32.77 = 0.5722%

M&S Equity Diversified Scheme = (19.90–7.5)/20.84 = 0.5950%

2. < TOP >

S. No	Manage the manager funds	Fund of funds
1.	Portfolios are populated with segregated managers	Portfolios are populated with (retail) funds
2.	Can assign customized restrictions to selected managers	Portfolios are diversified across market sectors and asset classes
3.	Require substantial assets; have access to managers that fund of funds cannot access	Little or no seed capital required
4.	Focused on managers skills for future returns	Mostly focused on historic returns of funds
5.	Closer Monitoring, better risk control on overall portfolio and access to portfolio holdings	Has no influence on the underlying Fund Managers. Not possible to monitor some essential risk factors
6.	Complete control over managers • high flexibility by easy exchange of managers • greater level of transparency	No control over manager (or investment team), custodian and administrator. Very easy exchange of funds
7.	Most likely lower costs, if asset base is big	Higher costs, due to additional layers of fees

3. By investing in a multi-manager fund, we will benefit from a comprehensive manager research and selection process. They establish a dedicated team of specialists to bring the best investment management capabilities available. There is a chance for a broad level of diversification that helps reduce investment risk and improves the likelihood of achieving consistent returns by having exposure to a number of investment managers, and not relying on the performance of any one investment manager or style. < TOP >

4. The various factors which keep the retail investors away from participating in venture capital funds are: < TOP >

Liquidity: No venture capital fund can get its units listed on a recognized stock exchange until the expiry of three years from the date of the issuance of units by the venture capital fund.

Promotion and Reach: No Venture Capital Fund can advertise in any public domain for the subscription or purchase of any of its units.

Investment Size: Minimum investment size for an investor is very high. Therefore retail investors are not in a position to invest through this route.

Therefore it would not be possible under the existing regulatory (SEBI VCF Regulations) to allow wider retail investor participation in the Infrastructure Sector by directly owning infrastructure assets through the venture capital route. Retail investments would require a lower minimum investment size as well as an ability to reach out to investors through public channels.

5. Some of the factors, which will increase the cost of managing and operating proposed DIFs compared to current Mutual Funds are: < TOP >

Higher Investment Costs- Listed instruments are fairly liquid and provide managers an option of easy entry and exit. However, in the unlisted space, the process of both entry and exit can be quite lengthy and complex. For every single investment a DIF makes, it will have to evaluate multiple investment. The costs associated with the evaluation of the projects, in which the DIFs do invest, will therefore be significantly higher compared to other mutual funds. These will include expenses related to legal fees, due-diligence costs, travel costs, advisory fees etc, apart from higher managerial time and effort spent on each investment idea.

Expenses related to periodic valuations- The NAV calculation for current Mutual Fund schemes is based upon the market prices of the securities. However for investments in Unlisted space, DIF's will have to engage external parties to periodically value the investments, thereby increasing the costs. Listed securities are well researched by in-house research teams as well as several sell-side brokers, making the cost of researching companies lower. Most of the companies have a fairly long history and a lot of information is publicly available. However, in the unlisted space, information flow is restricted and there is practically no third-party research available. DIF's will need to do all the basic research to be able to meaningfully evaluate investment proposals.

Investment monitoring Costs- The DIFs will have to continuously monitor the performance of investee projects. The level of involvement of a DIF, with each investment, will be extremely deep. As per prevailing international practices, DIFs may need to invest time to provide inputs to strategic decision making, board level decisions (probably with a seat on the board of the investee companies) and even day-to-day functioning of the investee companies. All this will result in higher commitment and efforts on the part of senior team members of the Mutual Funds.

Requirement of a dedicated Team: Unlike existing Mutual Funds where the same team may manage multiple schemes, the proposed DIF's will need to be managed by dedicated teams. As per international best practices, a fully dedicated team manages such funds. Both the investment evaluation and monitoring processes will be time-consuming. Additionally, the team managing the funds shall ideally stay with the investments through the full cycle (7-9 years) and internationally is thus compensated for their longer commitment.

Section C: Applied Theory

6. Different investment plans Mutual Funds offer in India are: < TOP >

Automatic Reinvestment Plans (ARP)

Under this, dividends or capital gains are re-invested in purchasing additional units instead of paying the investors in the form of cash. Automatic re-investment plans come under two options:

i. Growth Option

ii. Dividend Reinvestment Plan Option.

Under growth option, returns from investments are reinvested. The investor, thus, realizes only capital appreciation on the investment. This plan appeals to investors in the high-income bracket.

In dividend reinvestment plan option, the dividend accrued on Mutual Funds is automatically re-invested in purchasing additional units in open-ended Funds, thus, increasing the number of units investors hold. In most cases, Mutual Funds offer the investor an option of collecting dividends or re-investing the same.

Automatic Investment Plan (AIP)

Automatic Investment Plan, also called Systematic Investment Plan, is a method of investing a fixed sum, on a regular basis, in a Mutual Fund scheme. The investor is given the option of investing at a specified frequency of months in a specified scheme of the Mutual Fund for a constant sum of investment; AIP allows investors to plan their savings through a structured regular monthly savings program. SIP makes the volatility in the market work in investor's favor. Since a fixed amount is invested, more units are purchased when a scheme's NAV is low and fewer units when the NAV is high. As a result, over a period of time, these market fluctuations are generally averaged. Thus, the average cost of the investment is often reduced.

AIPs or SIPs work better as opposed to one-time investing. This is because of rupee-cost averaging. Under rupee-cost averaging, an investor typically buys more of Mutual Fund units when prices are low. On the other hand, he would buy fewer Mutual Fund units when prices are high. This is a good discipline since it forces the investor to commit cash at market lows, when other investors around him are wary and exiting the market. Investors may even be pleased when prices fall because the fixed rupee investment would now fetch more units. The SIP reduces the average purchase cost, even in volatile markets with relative ease. When you invest a fixed amount every month, the number of Mutual Fund units you actually buy depends on their market price. By investing in each, the investor can buy fewer units when the market moves up and more units when the market moves down.

Automatic Withdrawal Plan (AWP)

Automatic Withdrawal Plan or Systematic Withdrawal Plan or Systematic Encashment Plan allows the investor the facility to withdraw a pre-determined amount/units from his Fund at a pre-determined interval. The withdrawal can be monthly, quarterly or half-yearly. The investor's units will be redeemed at the applicable NAV as on that day. When an investor withdraws at an interval periodically, he is independent of market movement and the average withdrawal value is higher than the average cost price. The amount withdrawn is treated as redemption of units at the applicable NAV as specified in the Offer Document. The investor is usually required to maintain a minimum balance in his account under this plan.

Automatic Withdrawal Plans are different from Monthly Income Plans as the former allows investors to get back the principal amount invested while the latter only pays the income part on regular basis.

Systematic Transfer Plan (STP)

Investing in a Debt Fund normally assures fairly consistent returns to the investor whereas equities have the potential to create wealth. But the unpredictability in Equity Funds can be quite a deterrent for the investor to make a choice. Systematic Transfer Plan (STP) allows the investor to transfer on a periodic basis a specified amount from one scheme to another within the same Fund family, which means two schemes managed by the same Asset Management Company and belonging to the same Mutual Fund. A transfer will be treated as redemption of units from the scheme from which the transfer is made and as investment in units of scheme into which the transfer is made.

STPs offer comes in two plans for unit-holders:

i. Fixed Systematic Transfer Plan (FSTP)

ii. Capital Appreciation Systematic Transfer Plan (CASTP).

Fixed Systematic Transfer Plan (FSTP)

Under this facility, the unit holders can opt to redeem/switch (transfer) fixed amount of money from their accounts at periodic intervals. FSTP offers transfer facility at weekly, monthly and quarterly intervals. Unit holders will be eligible to transfer a fixed amount (for example, a minimum Rs. 1,000 and in multiples of Rs.100, thereafter, for schemes). Unit-holders should be aware that if they decide to take up this facility, there is possibility of erosion of capital. If an investor opts for FSTP and in case, there is no minimum amount (as specified above) available in the unit-holder's account, the residual amount will be transferred to the transferee scheme and the account of the unit holder will be closed.

Under this facility, the unit holders can opt to redeem amounts equivalent to the appreciation in their investment value at periodic intervals. Thus, the appreciation, if any, earned by the scheme during the specified period shall be automatically redeemed and paid to the investors at the applicable NAV.

Under the Capital Appreciation Systematic Transfer Plan (CASTP), unit holders will be eligible to transfer the entire capital appreciation amount (minimum Rs. 1,000) by way of capital appreciation. Under this, no transfers will take place, if there is no minimum capital appreciation amount (except for last transfer leading to closure of account). The capital appreciation, if any, will be calculated from the enrolment date of the CASTP under the folio, till the first transfer date. Subsequent capital appreciation, if any, will be the capital appreciation between the previous CASTP date (where redemption has been processed and paid) and the next CASTP date; for example, if the appreciation is Rs.3500 in the first quarter and Rs.3,000 in the second quarter, the unit-holder will receive only the appreciation, i.e., Rs.6,500.

< TOP >

7. Leveraged Buyout

A Leveraged Buyout (LBO) involves the purchase of a target company or division of a company where a substantial portion of funds is borrowed, and the assets of the target company secure such portion of the fund. The debt may be in the form of bank finance, (junk) bond offer, seller finance, and loans from Specialist Funds. These debts are repaid from future earnings and free cash flows of the company, issuance of public stock, additional capital contributions, sale of uncorrelated divisions or assets of the company or any combination of the above. The cash flow requirements for debt service force managers to sell unrequired assets, improve operational efficiency, and cut wasteful capital expenditure including employee layoffs.

Specialist financiers lead the Leveraged Buyouts (LBOs), whose executives take direct equity holdings in the acquired corporation, though majority of the funding for the purchase is in the form of debt. Incumbent management may play a vital role in the transaction and in equity holding. Sometimes, however, a financial buyer may even replace the incumbent management.

The reason behind using the term 'Leveraged Buyout' is that it allows companies to make large acquisitions without having to commit a lot of capital. A Leveraged Buyout may also be referred to as a hostile takeover, a highly leveraged transaction, or a bootstrap transaction.

The LBO market comprises three major types of transactions: (i) those in which a public company is taken by a private firm (this is usually the takeover segment of the LBO market), (ii) divestitures that result from selling off divisions of a public corporation, and (iii) private market transactions involving companies whose stocks are not publicly traded.

Real Estate Investment Trusts (REITs)

A Real Estate Investment Trust (REIT) is a corporation or a Business Trust that combines the capital of many investors to acquire (or provide financing for) various real estate assets. Investors are able to invest in a professionally managed portfolio of real estate assets. The structure also qualifies as a pass-through entity and distributes maximum portion of its earnings as dividends to shareholders. One of the major advantages of this investment is its liquidity as compared to traditional direct investment and through private equity route, which offers low liquidity on investment. The primary reason for the liquid nature of REITs is that they are traded in major exchanges as any ordinary share of a company.

Characteristics of REITs

A corporation in the business of real estate, which wants to qualify as a REIT to reap the advantages of being a pass-through entity free from taxation at the corporate level, must comply with the Internal Revenue Code (as defined in the US) provisions:

i. It must be structured either as a corporation, a Business Trust, or similar association,

ii. A Board of Directors or Trustees must manage it

iii. Shares are fully transferable,

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