

Institute of Actuaries of India

Subject ST5 — Finance and Investment A

November 2012 Examination

INDICATIVE SOLUTIONS

Solution 1 :**(a) Consumer goods**

Companies in the consumer goods groups manufacture consumer durables and non-durables. Durables include cars, furniture, televisions and “white goods” such as washing machines. Non-durables include food and drink and tobacco. Generally the impact of an economic cycle is less severe on non-durable consumer goods companies than on general manufacturers. This is especially true for companies producing basic necessities.

Other key features are:

- increasingly capital-intensive –
- importance of brand names –
- increasingly international –
- moderate to high gearing –
- low profit margins –

(b) Industrials

Industrial companies are involved in the various stages in the supply and production of goods. Many of the goods tend to be capital items, *ie* aircraft, ships, machinery, electronic and electrical equipment. This group includes companies in the building material and construction industries, as well as industrial transportation and industry support services.

The distinctive features are:

- dependent on the level of investment spending –
- cyclical –
- company profits tend to move ahead of the trade cycle –
- dependent on government spending –
- volatile profits –
- high profit margins when conditions are good –
- low gearing because of volatile profits –
- possibly exposed to overseas markets and competition –

(c) Utilities

Utilities are involved in the supply of continuously demanded services to households and business premises. Examples include electricity, water and gas distribution. Most UK utilities were formerly owned by the government, having been privatised during the 1980s. They are vulnerable to some political risk and to changes in the regulations under which they operate.

- They usually require an extensive physical infrastructure. This tends to make them capital intensive.
- Most utility companies are natural monopolies
- They are usually subject to tight government regulation of prices and vulnerable to other forms of political risk.
- They generally have low growth prospects; this leads to a high gross dividend yield
- Despite their stable demand and large capital requirements, gearing is low
- They are largely dependent on the domestic market, although some companies are diversifying internationally.

[Total Marks - 6]

Solution 2 :

(i)

- The total rate of tax on investment
- How the tax rate is split between income and capital gains
- Different rates of taxes for short and long term particularly for capital gains
- Different rates of taxes with or without availment of indexation benefit particularly for capital gains
- The timing of tax payments
- Whether the tax is deducted at source or to be paid subsequently
- The extent to which the tax deducted at source can be reclaimed by the investor
- The extent to which the gains or losses can be aggregated between different investments and different time periods. (3)

(ii)

Market Risk – The change in the value of the portfolio due to movements in market value

- Credit Risk – The counterparty to the agreement is unable or unwilling to fulfill their obligations.
- Operational Risk – Loss to the investor due to fraud or mismanagement by the counterparty.
- Liquidity Risk – Not having sufficient cash to meet operational needs at all times resulting in liquidation of the investment at an inopportune time.
- Relative Performance Risk – Risk that the investor has underperformed against a competitor or against a benchmark by making this investment.

[2]

[Total Marks – 5]

Solution 3 :

(i)

(A) *Asset liability mismatch reserving* is an example of the use of modelling in actuarial work. The emerging asset and liability position is projected under a range of possible conditions (economic, environmental, etc) in order to establish the extent to which assets and liabilities are mismatched. Appropriate supplementary reserves can then be set up to cover the possible levels of shortfall identified. The modelling can, as usual, be carried out using either deterministic or stochastic methodologies

(B) *Dynamic liability benchmarks* relate to circumstances where the typical benchmarks given to an investment manager need to vary according to the changing nature of the liabilities. Benchmarks will need to be reviewed periodically to ensure that they remain appropriate, but where the nature of the liabilities (and market conditions) is changing rapidly and are unpredictable, then it may be necessary to link the benchmarks more closely to the liability portfolio at all times.

In effect, this is an intermediate position between conventional “static” benchmarks and full liability hedging.

The clearest example of dynamic liability benchmarks is probably in respect of currencies where the nature of the liability portfolio can change very rapidly as market conditions change.

(C) *Liability Hedging* is where the assets are chosen in such a way as to perform in the same way as the liabilities.

A specific example is immunisation (hedging parallel yield curve shifts) and other forms of hedging would include matching by currency, and the consideration of the real or nominal nature of liabilities when choosing assets

However, these examples relate only to specific characteristics of the liabilities, whereas liability hedging aims to select assets which perform *exactly* like the liabilities in all states.

(D) PV01 is used as a measure of the sensitivity of the value of liabilities to changes in interest rates. PV01 is the change in present value of the liabilities due to a 1 basis point move in interest rate.

(4)

(ii)

- Use short NSE NIFTY futures to hedge delta risk in liability. Need to set up a delta hedged portfolio such that Asset delta - Liability Delta = 0
- Liability delta is sensitivity to small equity movements from the grid. An estimate is provided below (accept any sensible method of estimation)

$(84.3-86.4)/(2700*1.01-2700*0.99) = -0.0389 = -388,888.89$ per unit INR. (as liability value in INR Cr and INR 1 Cr = INR 10,000,000)

- Asset delta = futures delta = $x * \text{delta per contract}$ where x is the futures position
- Assuming continuous compounding delta per contract = $\exp(r-q)(t) * 50$
 $= \exp((0.05-0.03)*0.25)*50 = 50.25$
 (as each contract is on 50 times the index; the formula $S \exp(r-q)(t)$ is given in core reading for the futures price, so the delta should be easy to derive.)
- To set Asset Delta - Liability Delta = 0 requires $x * 50.25 - (-388,888.89) = 0$
 implying $x = -388,888.89 / 50.25 = -7,739.08$
- Therefore need to **short** 7,739 NSE NIFTY futures contracts to delta hedge the liability (to the nearest whole number).

(3)

(iii)

Liability rises with implied volatility. Given liability also rises with equity market falls, ideal instrument to hedge vega (implied volatility) is a long put option

- The futures contracts in the previous part required no initial outlay (ignoring any upfront margin requirements). However, adding a long put option requires an upfront premium to be paid, which is likely to increase upfront hedging costs.
- The long put option contributes a negative delta so this will impact the hedge for delta in the previous part. To remain delta neutral against the liability, we probably don't need as much negative delta in the short futures. So this means we could short less futures/reduce the short futures position when the put option is added to the hedging portfolio, and still achieve a delta neutral hedge for the liabilities.

(3)

[Total Marks – 10]**Solution 4 :**

(i)

- the actual future cashflows from an equity portfolio (both dividend payments and capital values from sales) are unknown, and so the amount of hedging needed can only be estimated. However, an investor who holds an overseas investment which gives an uncertain return can only hedge the amount of the expected return. The investor is still exposed to some foreign exchange risk.

- The main problem with using forward contracts to hedge returns from overseas investments for long-term investors is the fact that many investments are of a longer term than the contracts available in the market. The forward contracts will therefore have to be rolled over on expiry at an unknown rate.
- A further difficulty is the costs associated with the forward contracts. Although dealing costs are low, particularly on the major currencies, they may be significant when attempting to hedge smaller amounts, for example dividend receipts.
- the hedging removes some possibility of gains from favourable currency movements
- Forwards are OTC contracts, so face potential counterparty credit risk.

(2)

(ii) Let X be the spot rate in 6 months time (INR/\$)

$$X1^* = 1/X1 = 1/0.018868 = \text{INR } 53$$

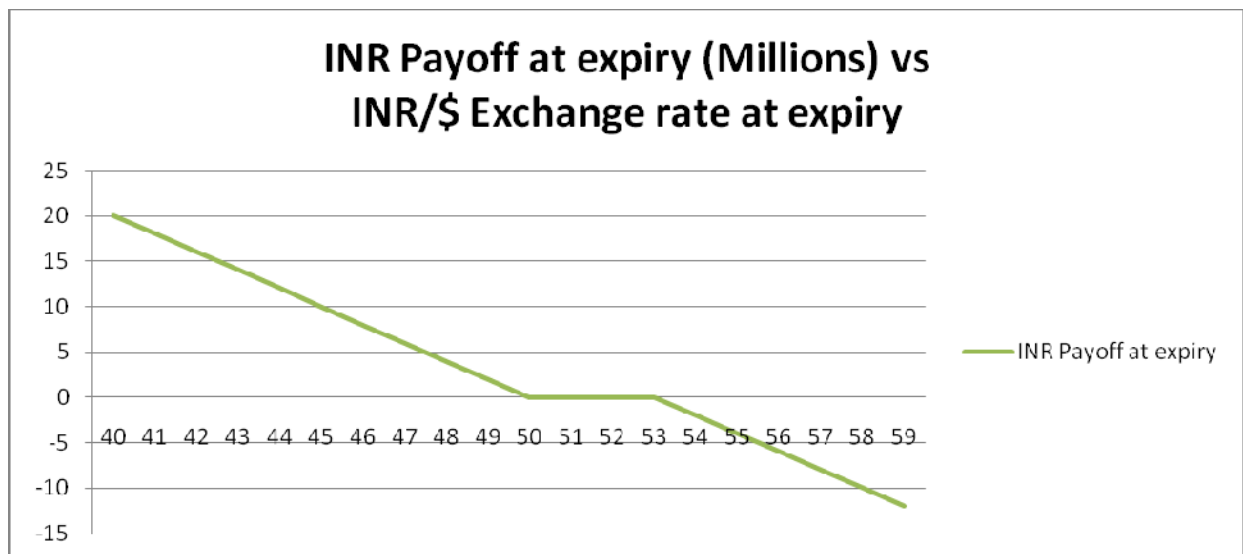
$$X2^* = 1/X2 = 1/0.02 = \text{INR } 50$$

The payoff function:

For $X > X1^*$ this is $\$2m * (53 - X)$

For $X < X2^*$ this is $\$2m * (50 - X)$

If $X2^* < X < X1^*$ the payoff is zero as Royale can sell dollars at the prevailing spot rate.



(4)

(iii)

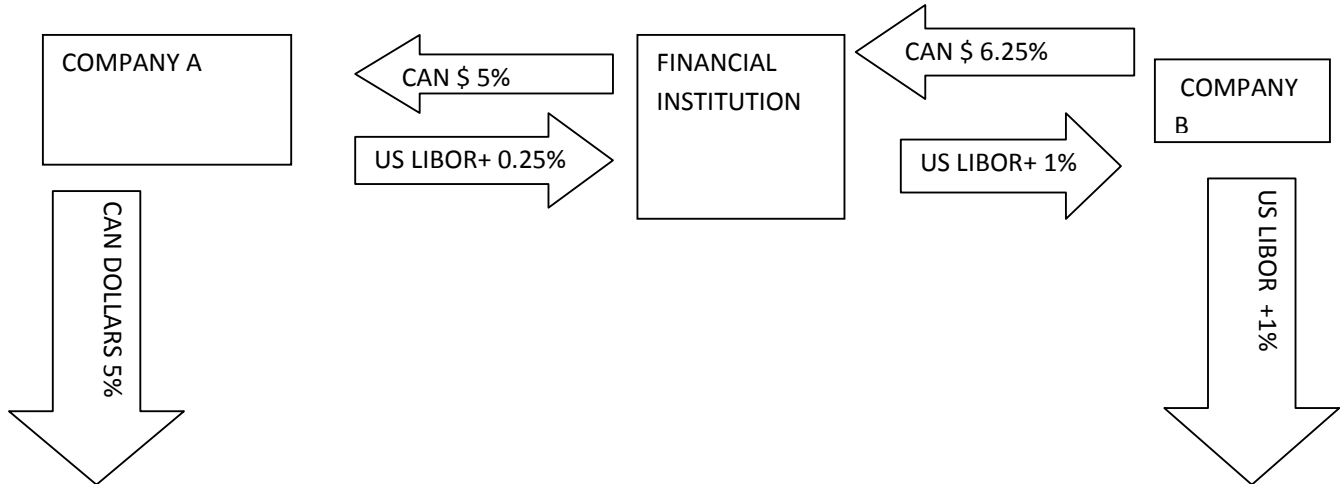
Company A has a comparative advantage in the Canadian Dollar (C\$) fixed rate market

Company B has a comparative advantage in the US \$ floating rate market. However Company A wants to borrow in the US\$ floating – rate market and Company B wants to borrow in the C\$ fixed rate market. This gives rise to the swap opportunity.

- Differential between US\$ floating rates is 0.5% pa and the differential between C\$ fixed rates is 1.5%pa. The difference between the differentials is 1%. Therefore the total

potential gain to all parties from the swap = 100 BP. If the financial institution requires 50 BP, then A and B can be made 25 BP better off each.

- The following swap structure shows that A's net borrowing cost is US\$: LIBOR + 0.25% pa while B's net borrowing cost is C\$ 6.25% pa



(3)

(iv)

Credit Risk: It faces credit risk, if either counterparty (i.e Company A or B) defaults when the swap has a positive value to the financial institution. A default would lead to an unmatched position within its book, and there may be additional costs of seeking a suitable replacement deal in the market.

Foreign exchange risk: Institution faces foreign exchange risk; it earns 125 basis points in Canadian Dollar and pays 75 basis points in US Dollars. An adverse movement in the US Dollar/ Canadian Dollar exchange rate can impact this margin received.

(2)

[Total Marks – 11]

Solution 5 :

(i) The expected loss on default of interest rate swap would be LESS than default on corresponding loan with same principal.

- In an interest rate swap, the financial institution's exposure depends on the difference between the fixed rate of interest and the floating rate of interest. It has no exposure to the notional principal. In the case of a loan, the whole principal can be lost.

(2)

(ii) Alpha faces these exposures:

- Beta may default on the termination date and thereby not return the cash in exchange for the bonds.
- The issuer of the bonds might default during the period of the repo agreement.
- Alpha also faces the risk that the market value of the bonds acquired as security will drop below the amount of cash lent plus the interest thereon. This risk increases with the

duration of the bonds held as security.

- Under a repurchase agreement the lender of cash (Alpha) acquires full title to the securities handed over as collateral. The risk is really that the value of the collateral is less than the repurchase price (cash+interest) at the time of default
- That risk is greater for bonds with high duration values than for bonds with low duration values.
- To mitigate these risks Alpha might: (a) Insist on low duration bonds. (b) Insist on margining the transaction each day. (c) Insist on initial margin to cover, say 99%, of expected daily price changes.
- If the issuer of the collateral defaults, the lender of cash (Alpha) still has recourse to the counterparty (Beta) who must buy the bond back at the agreed repurchase price.
- If the margining provisions are in place the lender of cash (Alpha) could call for more collateral if the existing collateral were to fall significantly in price because of a default.
- This risk could be further reduced by insisting on AAA-rated or AA-rated (depending on the degree of comfort one is looking for) government bonds.

(4)

(iii)

- Assume a negative mark to market exposure means a gain for Alpha if counterparty defaults.
- Assume without netting, these gains are 0. Exposure without netting is $(35+3+0)+(4+0)+(8+5)=55$
- With netting these gains can be allowed for in default to assess exposure. The exposures with netting are $\text{Max}(0,35+3-7)+\text{Max}(4-10,0)+\text{Max}(8+5,0)=44$
- This assumes that the **net exposure** for each counterparty is floored at 0 (i.e no credit is taken for negative exposures on a **net basis**)
- The netting agreement gives a benefit (in terms of credit exposure) of $55-44 = 11$.
- **Accept other sensible solutions**

(3)

(iv)

- The underlying asset being hedged is unquoted whereas under the terms of the credit derivative a publicly quoted bond of the issuer (the reference asset) must fail to meet its interest or capital repayments.
- Thus there is an asset mis-match between the reference asset and the underlying asset.
- If the unquoted bond ranks below all the publicly quoted bonds, it is possible to have a default on the unquoted bond without having a default on the publicly quoted bonds.
- Icarus might be heavily exposed to the PC industry so that an industry-wide default crisis may cause Icarus to default at the same time as the PC bond.
- The term of the credit derivative contract may be shorter than that of the underlying bond.

(2)

[Total Marks – 11]

Solution 6 :

(i)

Density function for the return on benchmark = $1/0.04$ for $3\% \leq x \leq 7\%$

Strategy A :

Let X be the return on the benchmark index.

$$E(X) = \int_{0.03}^{0.07} \frac{x}{0.04} dx$$

$$= \frac{1}{0.04} \times \left[\frac{x^2}{2} \right]_{0.03}^{0.07}$$

$$= 0.05$$

$$E(X^2) = \int_{0.03}^{0.07} \frac{x^2}{0.04} dx$$

$$= \frac{1}{0.04} \times \left[\frac{x^3}{3} \right]_{0.03}^{0.07}$$

$$= 0.00263$$

$$V(X) = E(X^2) - E(X)^2$$

$$= 0.00263 - 0.0025$$

$$= 0.00013$$

$$\text{Sharpe Measure} = \frac{E(X) - r}{\sqrt{V(X)}}$$

$$= \frac{0.05 - 0.045}{\sqrt{0.00013}}$$

$$= 0.4385$$

Strategy B :

Let Y be the return on the benchmark index, which is 2X with probability 0.5 and X/2 with probability

$$E(Y) = \int_{0.03}^{0.07} \frac{2x \times 0.5 + x/2 \times 0.5}{0.04} dx$$

$$= \frac{1}{0.04} \times \left[\frac{5}{4} \times \frac{x^2}{2} \right]_{0.03}^{0.07}$$

$$= 0.0625$$

$$E(Y^2) = \int_{0.03}^{0.07} \frac{4x^2 \times 0.5 + x^2/4 \times 0.5}{0.04} dx$$

$$= \frac{1}{0.04} \times \left[\frac{17}{8} \times \frac{x^3}{3} \right]_{0.03}^{0.07}$$

$$= 0.005596$$

$$\begin{aligned}
 V(Y) &= E(Y^2) - E(Y)^2 \\
 &= 0.005596 - 0.003906 \\
 &= 0.00169
 \end{aligned}$$

$$\begin{aligned}
 \text{Sharpe Measure} &= \frac{E(Y) - r}{\sqrt{V(Y)}} \\
 &= \frac{0.0625 - 0.045}{\sqrt{0.00169}} \\
 &= 0.4257
 \end{aligned}$$

Strategy A provides a higher risk-adjusted return when compared to Strategy B.

(5)

(ii)

Density function for the return on benchmark = $1/0.04$ for $3\% \leq x \leq 7\%$

No changes in the Sharpe measure for Strategy A due to change in probability.

Strategy B :

Let Y be the return on the benchmark index, which is $2X$ with probability 0.8 and $X/2$ with probability 0.2.

$$\begin{aligned}
 E(Y) &= \int_{0.03}^{0.07} \frac{2x \times 0.8 + x/2 \times 0.2}{0.04} dx \\
 &= \frac{1}{0.04} \times \left[\frac{17}{10} \times \frac{x^2}{2} \right]_{0.03}^{0.07} \\
 &= 0.085
 \end{aligned}$$

$$\begin{aligned}
 E(Y^2) &= \int_{0.03}^{0.07} \frac{4x^2 \times 0.8 + x^2/4 \times 0.2}{0.04} dx \\
 &= \frac{1}{0.04} \times \left[\frac{13}{4} \times \frac{x^3}{3} \right]_{0.03}^{0.07} \\
 &= 0.008558
 \end{aligned}$$

$$\begin{aligned}
 V(Y) &= E(Y^2) - E(Y)^2 \\
 &= 0.008558 - 0.007225
 \end{aligned}$$

$$= 0.001333$$

$$\begin{aligned} \text{Sharpe Measure} &= \frac{E(Y) - r}{\sqrt{V(Y)}} \\ &= \frac{0.085 - 0.045}{\sqrt{0.001333}} \\ &= 1.0596 \end{aligned}$$

Yes, on changing the probability, Strategy B provides a higher risk-adjusted return when compared to Strategy A.

(2)

(iii)

- The fund manager may deviate from the mandate to invest in riskier assets with the view of generating higher returns.
- The fund manager may want to invest in high yielding assets which are not allowed by the mandate.
- The liability profile of the fund may be different to what can be achieved from the mandate. In the short run, before the mandate can be changed, the fund manager may want to match the liability profile by deviating from the mandate.
- The fund manager may be holding more liquid assets than allowed by the mandate for opportunistic investments.
- The assets of type, size and currency may not be available in the market for the fund manager to invest.
- The assets of appropriate credit rating may not be available in the market for the fund manager to invest.
- The cost of rebalancing the portfolio to meet the mandate may be too high.
- The fund manager may not want to invest in assets which are very volatile in the current economic conditions.

(2)

[Total Marks - 9]

Solution 7 :

(i)

- The scope of the individual mandates will be important, in particular the restrictions in the mandates, and the extent to which the investment manager had the scope to move away from the benchmark strategic decision. A meaningful measure would be the “Information Ratio” – this measures the level of out-performance relative to the benchmark per unit of active risk taken. The higher the information ratio, the greater the skill of the investment manager
- Care needs to be taken when making comparisons between different funds to ensure they have been subject to the same constraints.
- Performance should also be looked at net of tax and net of expenses to assess the tax efficiency of investment choices and the level of investment expenses.
- Trustees should always be aware that past performance is not necessarily a guide to the future

(2)

(ii)

Scheme would enter an series of interest rate swaps (where it is receiving a "fixed" rate) and inflation swaps (where it is paying a "fixed" rate and receiving inflation) to extend the duration of the underlying bond portfolio and better match the market risks (inflation/interest rate risk) in the liabilities.

- Risks remaining in scheme after implementing these transactions are outlined below:
- Active management risks — risk of any actively managed assets (equities or bonds) underperforming relative to the benchmark index for the asset class
- Strategic (asset class vs liability) risks — the risk of investment returns on the asset class (equities) not being in line with the increase in liabilities.
- Basis risk — the risk of the swap values not moving precisely in line with the assets used to derive the discount rate (i.e the swap rates or swap curve) used to measure the liabilities.
- Curve risk — unless a precise cashflow matching approach has been adopted in the swap design this will lead to a further cross hedging risk on the swap overlay (i.e exposure to movement of specific parts of the curve)
- Liability risks — the swaps will not address demographic risks impacting scheme funding e.g longevity assumptions Also the cashflows used to define the hedge profile may be revised at future actuarial valuations as new information about demographic trends and scheme-specific experience emerges. These other liability risks arise both from changes to valuation assumptions and variations between experience and assumptions.

(5)

(iii)

- Need a strategy where the current equity portfolio (T) is diversified and split into two parts i.e x% is invested in the hedge fund and remainder (1-x)% invested in the holdings making up the current equity portfolio.
- The weak correlation between investments will ensure the portfolio hits the target volatility.
- Use the mean variance optimisation framework/formula for portfolio variance to determine x%
- $11\% = ((1-x)^2 * (13\%)^2 + (x^2)(18\%)^2 + 2 * (0.08)(x)(1-x)(13\%)(18\%)))^{0.5}$
- $0.0121 = (x^2 - 2x + 1)(0.0169) + (x^2)(0.0324) + (0.003744)(x)(1-x)$ squaring both sides
- $121 = 169 * (x^2 - 2x + 1) + 324x^2 + 37.44(x)(1-x)$
- $121 = 455.56x^2 - 300.56x + 169$
- $455.56x^2 - 300.56x + 48$
- This yields two solutions for x; $x = 0.38866$, $x = 0.271094$
- Therefore the original equity portfolio could be diversified in two ways (which implies switch out of equities and into hedge fund)
 - i) invest 27.10% in hedge fund, with 72.89% invested in original equity portfolio
 - ii) invest 38.86% in hedge fund with 61.13% invested in original equity portfolio

(5)

(iv)

- Strategy is a sizeable sale of equity and switch into hedge funds. Should use ALM investigation to see if this is best strategy to help meet objectives from the growth portfolio? Consider impact of switch on expected return of portfolio? May need to consider allocation to other alternative assets (e.g private equity)
- Tactical - is this the best time to sell equities.
- Consider transaction costs of selling equities - may need to use futures to reduce price drag; any other investment expenses
- Which hedge funds to invest in - individual managers or indirect via fund of hedge funds. Conduct due diligence on proposed funds
- Any regulatory restrictions in country X which specify a maximum allocation to hedge funds for this scheme?

(2)

[Total Marks – 14]

Solution 8 :**(i)**

Infrastructure assets are significantly big projects.

- As a consequence of this, the developments costs are very high.
- Sometimes the development costs can be so high that they can become barriers for investment.
- Historically governments have been funding and managing the development of the infrastructure assets.
- These assets tend to have long lives.
- Increasingly private sector is getting involved in the funding and managing of these assets.
- They tend to be single purpose in nature
- The return from these assets tends to emerge over a long period of time with high payback periods.

(3)**(ii)**

- Highways
- Water and sewerage facilities
- Energy production, transmission and distribution
- Telecommunication networks
- Schools/Universities
- Airports
- Hospitals
- Public housing
- Prisons
- Ports
- Railway network

(2)**(iii)****(a)**

- The highway does not belong to the firm and hence does not provide any covenant.
- The firm only has rights to the income from the highway for a period of 10 years which cannot form a covenant as the income stream is not defined.
- The investors providing the private debt will lock into the investment for a long period
- There is unlikely to be a secondary market for private debt and hence selling off this investment might be difficult.
- It might not be appropriate for a firm raising money via private debt to fund the construction of the highway.

(b)

- It is a pooled investment fund with fewer restrictions and is characterized by high level of borrowing..
- The funding of the highway will lock-in the investment for a long period.
- This will have an impact on the liquidity of the fund, especially once the borrowing will need to be repaid.
- Given that the hedge fund will be geared and the income stream from the tolls is not yet available, refinancing of the borrowing may be required, and this refinancing may be at unfavourable terms.
- The valuation of the investment may be difficult due to the uncertain income streams.
- It will be difficult to determine the performance of the fund manager and decide on his remuneration.

- There is no natural hedge for this funding that can be used as an offset so as to crystallize the positive effects of the hedge.
- It might not be appropriate for a hedge fund to fund the construction of the highway.

(c)

- Venture capital will have a lock-in period before the money can be called in.
- Venture capitalist will have a long investment horizon.
- In this case the venture capitalist should have specialist expertise of constructing and running a highway.
- It will be unlikely that the venture capitalist will be able to sell his share in the firm in the market.
- It might be suitable for a venture capital fund to invest in this project if they have the long-term investment horizon and specialist expertise in constructing and running such a project.

(d)

- Mutual fund needs to be liquid as units are bought and sold regularly.
- There is mismatch between when investment is made and the income from the asset is received.
- The valuation of asset, which in this case is the value of the income from the tolls, is subjective.
- It is unlikely that the mutual fund unit value will change frequently especially at the start as the valuation is based on future projections.
- There is no physical asset that the mutual fund will be holding as the highway does not belong the firm.
- It will difficult and subjective to determine the unit fund for the mutual fund and hence it might not be suitable for the mutual fund to fund the construction of the highway.

(e)

- A firm which can securitize the income stream from the tolls can sell it as different tranches of bonds with different risk profiles and return guarantees.
- Although there will not be any income stream in the initial years.
- There is a risk that if there is a delay in the construction of the highway, there will be issues when payments become due for the tranches where returns are guaranteed.
- The income stream is uncertain and it might be difficult to determine the various tranches at the beginning of the project.
- However, a company which plan to securitize the income stream from the tolls can be suitable for funding the project.

(10)

[Total Marks – 15]

Solution 9 :

(i)

To determine the share price of a company we will need to model the earnings and profitability of the Company.

- We will build a cashflow model and incorporate all the income and outgoes of the Company in the model.
- Firstly, we will need to project the growth in the sales of the Company.
- The future growth will need to allow for the business of the company, its products and the historical growth rates.
- Income and outgo will need to be projected for both the existing as well as projected new business.
- Income will be in the form of premium income and investment income.
- Outgoes will be in the form of benefit payments, expenses including commissions and taxes.
- The income less outgo will be the profitability of the company for the year and this will need to be projected for the future years.

- There may be requirement for future capital to finance the growth and the cost of this capital will need to be allowed for as an outgo in the model.
- The profits generated will need to be discounted to the present time using a required rate of return.
- The share price will be determined by the present value of profits as a ratio of the share capital.
- The future projections will be based on certain set of assumptions.
- A set of sensitivities will be run for these set of assumptions providing a range of share prices.
- This range will be the benchmark within which the share price will need to be set.
- The share price thus determined will be compared against the share price of other IPO's in the same industry, a similar industry or the market using certain ratios such as price-to-earnings ratio to determine if the share price is consistent.
- The fundamental model based share price, comparison with other IPO's and allowance for specific circumstances of the company not allowed for in the cashflow projection like quality of management will be used to finally determine the price for the IPO.
- It is also important to consider ratio of the estimated share price to current Embedded Value per share as against the said ratio of peers already listed.

(6)

(ii)

The most important factor affecting the share price is the potential for future growth.

- This growth will be impacted by
 - the growth of the market as a whole
 - the growth of the insurance industry
 - the growth of the company itself.
- The growth of the market will be impacted by the overall economy, government policies and policies of the central bank.
- The private life insurance industry is relative new and small. This will mean that there will be a high potential for growth, especially as the insurance penetration is low.
- The growth of the company will be impacted by the competition in the market, the quality of its management, the quality of its products and how it is perceived in the market.
- The other aspect affecting the share price is the dividends.
- The dividends will be impacted by
 - The cost of the sale and profitability.
 - The retained profits
 - Historical dividends
- As the sales volume increases the economies of scale will drive the average costs down and on the other hand as the volumes increase the sales become more difficult and the total cost of sale increases.
- A portion of profits may be retained to invest in future growth and may mean a lower dividend now but will result in future higher growth.
- Historical performance will have an impact on how the future prospects are estimated.

(5)

(iii)

The published accounts of the Company

- The financial press
- Commercial information providers
- The trade press
- Public statements by the company
- Statutory information provided by Company to government sources
- Statutory information provided by Company to the regulators
- Visits to the company

- Discussion with company management
- Discussion with competitors
- Any analyst reports
- Disclosure by parent company

(3)

(iv)

There is a one-time capital expenditure in the previous year that is not likely to be incurred in the future and hence is not reflected in the determination of price. In addition the capital expenditure is expected to increase the earnings at a higher rate and this information is reflected in the price determination.

- The company is a start-up or newly established and has low earnings, but the start – up cost is not reflected in the determination of price as it is not likely to be incurred again.
- The insurance industry is expected to be high growth industry and the earnings are expected to grow at significantly higher rate from a low current base. The high growth will be reflected in the price determination resulting in a high quoted price.
- The company has made exceptional loss in the previous year, resulting in the reduction in earnings. However the market understands that this loss is exceptional and hence the company has decided not to reflect this loss while determining the quoted price.
- The company has put value on intangibles like company management and quality of products which are not reflected in the current earnings, but are likely to impact future earnings. As a result the company has set a higher quoted price than what is consistent with the current earnings.

(5)

[Total Marks – 19]
