Paper – 13: Management Accounting –Strategic Management

Time Allowed: 3 Hours **Full Marks: 100**

Answer Question No.1 and Question No.6, which are Compulsory and any three Questions from Section I and another two questions from Section-II.

Working Notes should form part of the answer
"Wherever necessary, suitable assumptions should be made and indicated in answer by the candidates."

Section-I

Question.1

(a) Choose the most appropriate one from the stated options and write it down: [1x5=5]

(i) Blue Ocean Strategy is concerned with:
(a) Moving into new market with new products.
(b) Creating a new market places where there is no competition
(c) Developments of products and markets in order to ensure survival
(d) Making the product unique, in terms of attributes

(ii) Product development policy and strategy involves four phases namely:
(a) Concept development, product marketing, product/process engineering and product launch
(b) Concept development, product planning, product/process engineering and pilot production/ramp up
(c) Product planning, product/process engineering, pilot production/ramp up, marketing
(d) None of the above

(iii) State Bank of India's slogan of "reaching out" would be in your mind, best described as a
(a) Mission statement
(b) Vision statement
(c) A competency statement
(d) None of the above

(iv) Price fixation for the first time takes place when
(a) A company develops or acquires a new product
(b) Introducing existing product into a new geographic area or a new distribution channel
(c) A service, the company bids for a new contract work
(d) All of the above

(v) Delphi Technique is used in
(a) Budgeting
(b) Projecting Business
(c) Market Research Technique
(d) Technological Forecasting

(b) State whether the following statements are 'True' or 'False': [1x5=5]

(i) Offensive strategy is appropriate for small companies and requires that they concentrate on just one segment of market.

(ii) "Special Economic Zone" created by the government of India, encourage industry, investment and FDI.

(iii) "Merger" is the purchase of controlling interest of another company.

(iv) "Simulation model" helps to narrate and predict the characteristics of a given system under different conditions.

(v) "Dogs" are the products in a high-growth market but where they have a low market share.

(c) Define the following terms in not more than two sentences: [1x5=5]

(i) Value Engineering
(ii) Forecasting
(iii) Strategic vision
(iv) Loss Leader
(v) Market Segmentation

Answer:
(a)

(i) (b) creating new market places where there is no competition

(ii) (b) Concept development, product planning, product/process engineering and pilot production/ ramp up

(iii) (b) vision statement

(iv) (d) all of the above

(v) (d) Technological Forecasting

(b)

(i) False

(ii) True

(iii) False

(iv) True

(v) False

(c)

(i) **Value Engineering:** Value Engineering is a systematic method to improve the 'value' of goods or products and services by using an examination of function. This is achieved by either improving the function or reducing the cost of the product simultaneously ensuring that basic functions of the product are preserved and not reduced as a consequence of pursuing value improvements.

(ii) **Forecasting:** Forecasting involves the analysis of revenues, costs and volumes for making the projections into the future, based on the past trends and after considering all the other factors, affecting profits and returns.

(iii) **Strategic vision:** Strategic vision is a road map showing the route a company intends to take in developing and strengthening its business. It paints a picture of a company's destination and provides a rationale for going there. A Strategic vision portrays a company's business scope ("where we are going")

(iv) **Loss Leader:** A product or service sold at lower-than-normal margins (probably at a loss) in order to attract customers who might then buy other items at normal prices.

(v) **Market Segmentation:** Market Segmentation is the division of a market into fairly homogeneous subsets, where each subset can be chosen, reached and served by its own tailored marketing mix.

Question.2

(a) Describe the BCG Matrix in the context of evaluation of Business Portfolio. [10]

Answer:

The Boston Consulting Group (BCG) model, popularly known as the BCG Matrix and Growth-Share Matrix, is based on two variables, viz., the rate of growth of the product-market and the market share in that market held by the first relative to its competitors.
The market growth rate is an indicator of the attractiveness of the industry and the relative market share is an indicator of the strength of the firm in that industry relative to its competitors.

In the following figure, the vertical axis measures the annual growth rate of the market and the horizontal axis shows the relative market share of the firm. Each of these dimensions is divided into two categories of high and low, making up a matrix of four cells. These four cells are described below.

High Growth - Low Market Share: Products in this cell are in fast growing markets but their relative market shares are low. They are, therefore, aptly described as question marks - the company confronts the critical question of whether to make further investments in these businesses to build up market share or to divest and get out.

A question mark may call for heavy investment and other capabilities to increase its market share and become a star. If the company has the strength to increase its market share, the right strategy would be to build, i.e., to build up the market shares so that the question mark becomes a star. Achievement of this strategy may even necessitate foregoing short-term profits.

If the company does not have the strength to build up a question mark to a star or if the resources can be put to better use elsewhere, divestment may be an appropriate strategy.

A company which is in a number of businesses may have several question marks (in the figure there are three). Some of these may be right for building up and it may be prudent to drop some. In some cases where a company has a number of question marks, it may face resource crunch to build up all these business.

If a company has a number of question marks, it does not necessarily mean that it will have to build up some and drop others. In some cases the right strategy could be to build all. The other extreme could also be true in some cases. There could also be cases of the sole question mark a company has to be dropped. Further, it also does not mean that all question marks which cannot be built up should be dropped. There could be products in high growth markets with low market share, capable of making net cash flows without requiring any significant additional investment.

High Growth- High Market Share: Products in this cell are called stars. They are promising products because they have a relatively high market share and the market is growing fast. Stars are usually profitable and would be the future cash cows. Many stars call for substantial investment to maintain their market share in the fast growing market. This may necessitate reinvestment of internal accruals and sourcing external funds. Several stars, therefore, may not produce cash flow for the company until the market matures and the stars become cash cows.

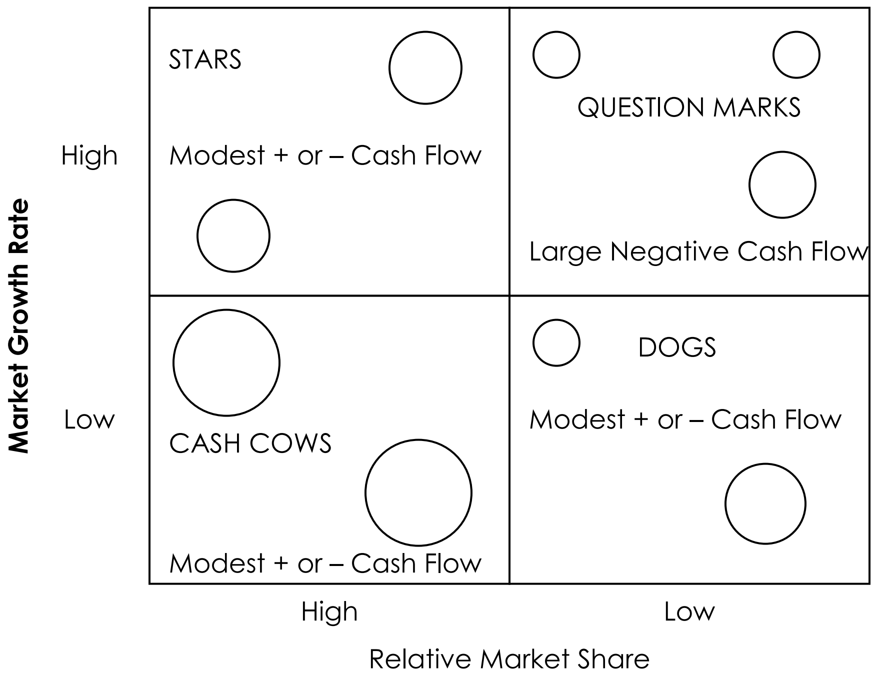
In the figure, there are two stars. The appropriate strategy for stars often is to hold, i.e., to maintain the market share which usually requires, as indicated above, large investments to increase supply and to fight competition.

Low Growth - High Market Share: As the market matures or when the market growth rate becomes low the stars would become cash cows. Cash cows are, thus, high market share business in slow growth industries. Being in slow growth industries, they do not normally require significant reinvestment. Cash cows generate lot of cash which may be used to finance the development of other businesses of the company like stars and question marks. A company which does not have cash cows would find it difficult to develop its business.

The strategy often employed in respect of weak cash cows (i.e., those which do not have a long term prospects) is to harvest, i.e., to increase the short-term cash flow regardless of the long term effects. In case of strong cash cows (i.e., those with long-term prospects), some reinvestment may be required to keep them in good for harvesting for long.

Low Growth - Low Market Share:
Businesses with low market share in low growth industries are described as dogs.
Dogs may produce low profits or loss. If a dog does not generate satisfactory return and if there is no chance of improving it, one may be tempted to advocate divestment. However, in several cases dogs may be retained in the portfolio due to several reasons. In some cases dogs may be providing crucial inputs to stars. Some dog product may have to be retained to complete the product range and provide a credible presence in the market. They may be held for defensive reasons - to keep competitors out.

Sometimes dogs may be retained due to reasons like goodwill, sentimental factors etc. A dog may be harvested before liquidation.



BCG Matrix

As time passes, SBUs may change their position in the growth share matrix. Successful SBUs have a life cycle. They start as question marks, become stars, then cash cows, and finally dogs towards the end of their life cycle. For this reason, companies should examine not only the current positions of their businesses in the growth-share matrix (as in a snapshot) but also their moving positions (as in a motion picture). Each business should be reviewed as to where it was in past years, and where it will probably move in future years. If the expected trajectory of a given business is not satisfactory, the company should ask its business's manager to propose a new strategy and the likely resulting trajectory. Thus, the growth-share matrix becomes a planning framework for the strategic planners at company headquarters. They use it to try to asses each business and-assign the most reasonable objective.

(b) What are the various criteria used in selecting a forecasting method? [5]

Answer:

Various criteria used in selecting a forecasting method:

Managers are often confronted with the problem of preparing forecasts for which sourcing of data becomes a difficult problem and the decisions regarding selection of the method of forecast with the available data. Following are some of the factors that would influence the criteria for selecting a forecasting method:

- Quantum of data-maximum/minimum no. of observations, peaks and troughs, weightages, seasonal data etc.

- Pattern of data-stationary, trend, seasonality, complexity, cyclic etc.
- Time horizon-short, medium and long.
- Preparation time-short, medium and long.
- Type of skills required- no sophistication, moderate sophistication or high sophistication.

Question.3

(a) Define e-business as per in Judy Strauss and Raymond Frost's E-marketing model. [5]

Answer:

Judy Strauss and Raymond Frost's E-marketing model:
Judy Strauss and Raymond Frost's E-marketing model defines E-Business as a continuous Optimisation of a firms business through digital technology.
EB=EC + BI+ CRM + SCM + ERP
Where EB is the Electronic Business,
EC is Electronic Commerce,
BI is Business Intelligence,
CRM is Customer Relationship Management,
SCM is Supply Chain Management and
ERP is Enterprise Resource Planning.
EC uses digital technologies to enable buying/selling, BI uses digital technologies for collecting primary/secondary information. CRM is the strategy to satisfy customers and build long lasting relationships on the basis of high interaction with customers. This high interaction has been enabled through web conferences. SCM relates-to delivery of products efficiently and effectively both by the vendors to the manufacturers and manufacturers to the distributors/customers. The high interaction with-vendors and customers has been possible through EDI (electronic data interface), paperless transactions. ERP has helped optimisation of business processes and lowering costs. Order entry and purchasing, invoicing and inventory control have been speeded up and also optimised through MRP, JIT, Kanban, etc., using digital technologies.

(b) Explain how different Forecasting Models assist in management decisions. [10]

Answer:

Uses of different Forecasting Models in management decisions:

Forecasting models happens to be important constituents of the category of decision support system models. These are extremely helpful in transforming user inputs into useful information. Planning for the future is the essence of any business. Businesses need estimates of future values of business variables. Commodities industry needs forecasts of supply, sales and demand for production, planning, sales, marketing and financial decisions.
Some businesses need forecasts of monetary variables e.g., costs or price. Financial institutions face the need to forecast volatility in stock prices. There are macro economic factors that have, to be predicted for policy-making decisions in Governments. The list is endless and forecasting is a key 'decision-making practice' in most organizations.
Forecasting models are needed to develop strategic plans for long range perspectives. Forecasting models are of 4 types, as listed below:

I. Qualitative Models:

- Delphi model- Collects and analyses panel of expert opinions.
- Historic data- Develop analogies to the past data.

- Normal group technique-participative group process.

II. Naive (Time Series) Quantitative Models:

- Simple average- Averages past data to project the future based on that average.
- Exponential smoothing-Weighs differently earlier forecasts and the recent one to project into the future.

III. Causal Quantitative Model:

- Regression analysis- defines functional relationships among variables as to whether it is linear or non-linear.
- Economic Modeling: offers an overall forecast for a variable like Gross National Product (GNP)

IV. Combination of monetary & physical projections.

- Marketing projections- Monetary by region, product and product group.
- Economic projections- Monetary by region, industry and broad product group.
- Historical projections- In units, monetary by product and product group.
- Demand forecast-In units by product and product group for operations management and monetary for sales and financial planning .

Question.4

(a) What are the strategies adopted to combat hostile takeover? [8]

Answer:

A target company which faces the threat of a hostile takeover, would adopt the following Strategies:

Poison pill tactics: This strategy aims at initiating action against the predator by destroying the attractiveness of the firm. The following are few methods:

The acquiring company may issue substantial amount of convertible debentures to its existing shareholders which would make it difficult for the potential acquirer as there is a danger of considerable increase in the voting power of the company.

- The target firm either sells or mortgages or leases or otherwise disposes off some of its precious assets.
- The target firm can defend itself from the onslaught of the potential bidder is to dispose of its liquidity by acquiring some asset or other firm.
- The target grants its employees stock options that immediately vest if the company is taken over. This is intended to give employees an incentive to continue working for the target company at least until a merger is completed instead of looking for a new job as soon as takeover discussions begin. However, with the release of the "golden handcuffs", many discontented employees may quit immediately after they've cashed in their stock options. The poison pill may create an exodus of talented employees. In many high-tech businesses, attrition of talented human resources often means an empty shell is left behind for the new owner.
- The target company issues rights to existing shareholders to acquire a large number of new securities, usually common stock or preferred stock. These new rights usually allow holders (other than an acquirer) to convert the right into a large number of common shares if anyone acquires more than a set amount of the target's stock (typically 10-20%). This immediately dilutes the percentage of the target owned by the acquirer, and makes it more expensive to acquire control of the target.

Green mail tactics: The target firm can purchase its own stocks at a premium to avert a takeover bid. The incentive is offered by management of the target company to the potential bidder for not pursuing the takeover bid.

White Knight tactics: The target company's management may seek out a friendlier potential acquiring company who could offer a higher offer price which would eventually drive away the original bidder. The purpose of 'white knight strategy' is to seek to find a bidder. The objective is to make the takeover exercise as much unviable and unprofitable as possible for the original bidder. Such a strategy will help get the target firm a better deal. There are cases where a white knight has later been aggressive with the target company and consummated the deal at better terms.

Golden Parachutes tactics: Adopted by the target company by offering hefty compensations to its managers if they manage to get ousted due to takeover; this is pursued to reduce their resistance to takeover. This was also mentioned among one of the strategies of poison pill. This is mainly initiated because soft target firms who are managed by professional managers may fear shifting of loyalty by professional managers and to avoid any such attempts set up golden parachutes so that predators may not have incentive to deal with the agents for consummating the deal.

Divestiture tactics: Whereby target the company arranges to divest or spin off some of its businesses in the form of an independent, subsidiary company thus reducing the attractiveness of the existing business to the predator. This clearly changes the valuation of the company and many a times the multiples of valuation for multi divisional businesses would encourage such moves by target companies.

Crown Jewel tactics: Whereby the target company arranges to sell its crown jewel namely highly profitable part of the business or ones which market values better in order to dissuade the predator. However, such strategic initiative requires clear understanding of predators target businesses and valuation guidelines to be effective.

Legal tactics: A target firm can forestall the possible takeover bid through legal mode. It takes the form of 'legal strategy' for guarding against hostile takeovers. In this case, it is possible for the target firm to move a court of law for obtaining injunction against the offer. For this purpose, relevant provisions exist in the Securities Contracts (Regulations) Act, 1956 and the Companies Act, 1956. This strategy is resorted to either to block or delay the tender offer in circumstances where the shares are lodged for the transfer by the bidder. SEBI has come with clear guidelines to discourage hostile takeovers in India.

(b) "Growth through concentric diversification into a related industry may be a very appropriate corporate strategy" Discuss. [4]

Answer:

While this statement may look relevant on the face of it, this can be applied only when a firm has a strong competitive position but industry attractiveness is low. For example, Murugappa group's E.I.D. Parry India Ltd., for example, has diversified both internally and externally out of the unpredictable sugar business into a series of related businesses run by the parent company.

The related diversification internally took the form of diversifying sugar division into alcohol and confectionary to add profitability to the unpredictable sugar business. Again the fertilizer activity of EID parry group in the form of production of fertilizer mixtures, ammonium phosphate sulphate and super phosphate was integrated externally with Coromandal fertilizers of which E.I.D. Parry India is a major share holder.

(c) "Complementary mergers may result in each firm filling in the missing pieces of their firm with pieces from other firm" Discuss. [3]

Answer

A merger of a firm with strong R & D unit would help to improve new product development while with a firm with a strong distribution network, may benefit better distribution. For example, Dr. Reddy's went for acquisitions of R&D units to strengthen their exploration for new molecules to shorten the product development time horizon. Coca Cola when entered into India, took over the distribution systems of Parle and this saved them both efforts and time to develop distribution network.

Question.5

Write short note on; [3x5=15]

(i) Audit Committee
(ii) Strategic Outsourcing
(iii) Bargaining Power of Customer

Answer:

(i) Audit Committee:

The Companies Act requires that every public company with paid-up capital .of not less than ₹5 Crores should constitute an audit committee. It is not necessary that the company should be listed. Clause 49 of the Listing Agreement under SEBI regulations also requires a listed company to form an Audit Committee. Both regulations detail the constitution, powers and responsibilities of the Audit Committee.

Under Clause 49, Audit Committee should comprise at least 3 Directors. Two-third of them should be independent. At least one member shall have accounting or related financial management expertise. The committee chairman should be an independent director. The Audit Committee should meet at least thrice a year-one before finalisation of annual accounts and one necessarily every six months with the quorum being higher of two members or one-third with at least two independent directors.

Role of Audit Committee:

The role of the Audit Committee includes:

- Review of the company's financial reporting process and the disclosure of its financial information to ensure the financial statement is correct and credible,
- Recommending to the Board the appointment, re-appointment and if required, the replacement or removal of the statutory auditor and the fixation of audit fees,
- Reviewing, with the management, performance of statutory and internal auditors,
- Adequacy of the internal control systems, reporting structure coverage and frequency of internal audit, among others.

Powers of Audit Committee

- To investigate activities within its terms of reference,.
- Seek information from any employee,
- To obtain outside legal or other professional advice,
- Secure attendance of outsiders with expertise, if it considers necessary.

(ii) Strategic Outsourcing:

Strategic Outsourcing has evolved beyond being viewed as a purely tactical exercise to reduce costs and increase operational efficiencies. Businesses today are using it to achieve their enterprise-wide strategic goals and focus on core competencies:

Strategic Outsourcing can help companies

- Adapt flexibly to business change.
- Improve quality and productivity
- Respond quickly to competition
- Penetrate new markets.

Strategic Outsourcing services can range from Application Development and Maintenance (ADM) to business process outsourcing to setting up 'turnkey IT centre's on a BOT model (Build-Operate-Transfer), to business re-engineering.

Strategic Outsourcing provides access to a highly skilled global workplace, which can supply a wide array of services. To leverage these services effectively and benefit from lower operational costs and higher service levels, there are several business models to choose from.

These are:

- Staff augmentation-This model provides specialised resources, cost flexibility and satisfies short-term time-to-market demands.
- Out-tasking-This model is suitable for short-term business needs, to fill skill gaps. However the integration of different out-tasked outcomes may not be a seamless one.
- Project-based outsourcing-Vendors and clients share risks and rewards through this collaborative model. This model has high client benefits as it holds the vendor accountable for an entire project and allows the application of industry best practices in the outsourcing process.
- Managed services model: This model fosters the development of long-term, multi-year, SLA-based relationships to provide integrated solutions across the enterprises. The service provider takes responsibility and accountability for agreed-upon strategic business outcomes.

(iii) Bargaining Power of Customers:

This concept was originally proposed by Michael Porter in the five forces model.

Customers would want better quality products and services at a lower price. If they succeed in getting what they want, they will force down the profitability of the Supplier's in the Industry.

The profitability of an industry is therefore dependent very much on the consumer's bargaining power. In today's world of buyer's market, the customer is the 'king'. He alone dictates the terms and calls the shots. Consequently the bargaining power of customers had never before been so high as is felt in today's business scenario.

Just how strong the position of the customers will depend on a number of factors as per below:-

- If the customer's purchase represents a substantial proportion of total sales by the producer, the customer will be in a strong position relative to the seller.
- If most of a customer's supplies come from a single industry, the customer will be in a weaker bargaining position than if only a small-proportion did so.
- Whether the switching costs are high or low.
- Whether the products supplied by the Industry are standard items and undifferentiated.
- Suppliers will try to increase their bargaining power over the customers by creating a strong brand image.
- A customer who makes low profits will be forced to insist on low prices from suppliers.
- The threat that customers might take over sources of supply, if suppliers charge too

much.

- The skill of the customer's purchasing staff or price-awareness of customers.
- When product quality is important to the customer, the customer is less likely to be price - sensitive and so the Industry might be more profitable as a consequence.

Section-II

Question.6

(a) Choose the most appropriate one from the stated options and write down: [1x5=5]

(i) Business Risk which is inherent to a business due to:
(a) Its nature and susceptibility to environment, e.g., change of fashion, business cycles
(b) Its nature and susceptibility to environment, e.g., conflicts like war, insurgency
(c) Its nature and susceptibility to environment, e.g., cross border terrorism, technological obsolescence, etc.
(d) All of the above
(e) None of the above

(ii) The most commonly used techniques for measurement of liquidity risks is:
(a) The gap analysis of maturing assets to the maturing liabilities
(b) The financial analysis
(c) The audit of maturing assets
(d) The gap analysis of current assets to the maturing liabilities
(e) None of the above

(iii) Performance related risk measures do not include:
(a) Operating earnings
(b) EBITDA
(c) WACC
(d) EVA
(e) Shortfall risk

(iv) ________________refers to the uncertainty of market volumes in the future and the quantum of future income caused by the variations in the interest rates.
(a) Market risk
(b) Physical risk
(c) Interest rate risk
(d) Pooling risk
(e) Exchange risk

(v) MTO stands for:
(a) Mark to order
(b) Move to order
(c) Move to open area
(d) Make to order
(e) None of the above

(b) State whether the following statements, based on the quoted terms, are 'True' or 'False' with justifications for your Answer. If any given statement is 'false', you are required to give the correct terms, duly quoted. No credit will be given for any Answers without justifications. [1x5=5]

(i) EPD in risk management means 'Expected Policy Holder' deficit;

(ii) Physical risk arising out of Social, Political, Economic and Legal Environments are often identified through the performance of lead indicators.

(iii) The concept of Pooling risk is the process of identification of separate risks and put them all together in a single basket, so that the monitoring, combining, integrating or diversifying risk can be implemented;

(iv) MTS stands for "Make to assembly".

(v) "Risk" arises when different people behave and react differently to the same situation.

Answer:

(a)

(i) (d) All of the above

(ii) (a) The gap analysis of maturing assets to the maturing liabilities

(iii) (e) Shortfall risk

(iv) (c) Interest rate risk

(v) (d) Make to order

(b)

(i) True; EPD in risk management means 'Expected Policy Holder' deficit;

(ii) True; Physical risk arising out of Social, Political, Economic and Legal Environments are often identified through the performance of lead indicators.

(iii) True; The concept of pooling risk is the process of identification of separate risks and put them all together in a single basket, so that the monitoring, combining, integrating or diversifying risk can be implemented.

(iv) False; The correct is 'Move to assembly' and not to 'Make to assembly'.

(v) False; The correct term is 'uncertainty' and not 'risk'.

Question.7

(a) Why is Risk Reporting considered to be an important step in Risk Management? [7]

Answer:

Risk Reporting is an important step in Risk Management

A transparent and effective risk reporting system is essential for a company, as it is obligatory on its part to disclose all material risks that it faces and its risk management practices. In recent years, the concept of risk reporting has assumed significant importance, after the collapse of Enron as well as other corporate failures. Existence of an adequate Risk Reporting System in an organization makes the managers more accountable for their actions. In the light of this, the importance of risk reporting system can be summarised as under:

- It can assist the Board to discharge its responsibilities, enabling the company to go for higher profits at lower risks.
- It helps in decision-making at all levels with objectivity.
- It can help investors to evaluate market situations with a view to building optimum portfolio of securities.
- Lenders can be supported in their lending operations and policy decisions.
- It can help a company in getting a better credit rating and access to cheaper source of finance.
- It develops transparency between managers and investors-leading to reduced agency cost, which in turn reduces the cost of capital and increases the basket of investment opportunities available to a firm.
- It can create a niche for the company and can act as a trendsetter for others.

(b) What are the strategies to be adopted to hedge and diversity project risk? [3]

Answer:

Hedging and diversification of project risk management use the following tools: portfolios, insurance and hedging. Project risk could be reduced through building a diversified portfolio to balance risks and cash flows, hedging against currency fluctuations or commodity exposures, applying financial derivatives. Risk can be transferred by insuring risks as well as diversifying investments in different countries to reduce political risk.

(c) Write short note on Probability of Ruin. [5]

Answer:

Probability of Ruin

Ruin theory also known as collective risk theory, was actually developed by the insurance industry for studying the insurers vulnerability to insolvency using mathematical modeling. It is based on the derivation of many ruin-related measures and quantities and specifically includes the probability of ultimate ruin. This can be also related to the sphere of applied probability as the techniques used in the ruin theory as fundamentally arising out of stochastic processes. Many problems in ruin theory relate to real-life actuarial studies but the mathematical aspects of ruin theory have really been of interest to actuarial scientists and other business research people.

Normally an insurers' surplus has been computed as the net of two opposing cash flows, namely, cash inflow of premium income collected continuously at the rate of c and the cash outflow due to a series of insurance claims that are mutually independent and identically distributed with a common distribution function P(y). The path of the series of claims is assumed to respond to a Poisson process with intensity rate λ which would mean that the number of claims received N(t) at a time frame of t is controlled by a Poisson distribution with a mean λ_t. Therefore, the insurer's surplus at any time t is represented by the following-formula:

$$X(t) = x + ct - \sum_{i=0}^{N(t)} Y_i$$

Where, the business of the insurer starts with an initial level of surplus capital.
x = x under probability measure.

Towards the end of the 20th century, Garbur and Shiu introduced the concept of the expected discounted penalty function derived from the probability of ultimate ruin. This concept was utilized to gauge the behaviour of insurer's surplus using the following formula:

$$m(x) = E^x\left[e^{-\delta T}K_T\right]$$

where, δ is the discounting force of interest, K_T is a general penalty function representing the economic costs of the insurer at the time of ruin and the expectation relates to the probability measure. Quite a few ruin-related quantities fall into the category of the expected discounted penalty function.

In short, this theory of the probability of ruin is applied in the case of risk of insolvency of a company with diversified business activity. For the purpose of study, resources between diversified activities are allowed to be transferred and are limited by costs of transaction. Terminal insolvency happens when capital transfers between the business lines are not able to compensate the negative positions. Actuarial calculations are involved in the determination of ultimate ruin as discussed.

Question.8

(a) What is the role of management accountants in insurance risk management? [5]

Answer:

In the wake of economic uncertainties through which the business passes, a management accountant has to stay close to risk management process in an organisation and bring about a structured thinking within the business about risks. Irrespective of his role, as a management accountant in an insurance company or an insured company, a management accountant has to appreciate the computation of the premium rates for different insurance product, as also fully define the character of the losses to be covered.

Value imputation of risks to be covered by the insurer's company has two aspects:

(i) Quantifying the total risk to be covered for calculating a premium as a definite fraction of the risk value covered by the policy.

(ii) (ii) If the quantification of risk is so high and the corresponding premium is also likely to be high enough for an insured to back out, then develop a framework where the insurer's company can reinsure itself for the policy risk with another insurance company. This will help in reducing the premium for the insured.

A management accountant in an insured company has his task cut out in two directions. At the time of covering the risk, he has to work closely with the cross functional team to identify the direct values of the risks involved and indirect consequent values of the risks involved. For example, in the first instance, the replacement cost of a plant being insured is a direct cost and has to be quantified by proper methodology. The next step is to estimate the consequential loss of profits due to stoppage of plant due to breakdown of the plant being replaced.

During the period of economic uncertainties, the management accountant can fortify the management thinking process -through providing a robust, highly reliable, fast and responsive, transparent and reliable Information Management, which will continuously highlight the risks inherent in every management activity.

(b) Discuss about the RAPM. [5]

Answer:

RAPM: stands for Risk Adjusted Performance Management.

The best practice recommendation

was enunciated in the G30 report on derivatives. The recommendations have been considered very sound and very much in use currently. They include:

(i) Involve senior management;

(ii) Establish independent risk managers for market and credit risk.

(iii) Market to Market on a daily basis with consistent valuation measures.

(iv) Measure and limit market and credit risk, using value at risk (VAR) techniques to estimate probable loss over a period of time.
(v) Strengthen operational controls, systems and training,
(vi) Make investment and funding forecasts,
(vii) Identify revenue sources and next conduct stress testing.

(c) Write a short note on the Solvency related measures in the context of risk management. [5]

Answer:

Solvency related measures in the context of risk management:
These measures concentrate on the adverse 'trail' of the probability distribution and are relevant for economic capital requirements.

- Probability of ruin: the percentile of the probability distribution corresponding to the point, at which the capital is exhausted.
- Shortfall risk: the probability that a random variable falls below some specific threshold level (Probability of ruin is a special case of shortfall risk, in which the threshold level is the point at which capital is exhausted)
- Value at Risk (VAR): the maximum loss an organisation can suffer, under normal market conditions, over a given period of time at a given probability level. VAR is a common measure of risk in the banking sector, where it is typically calculated daily and used to monitor trading activity.
- Expected Policy holder Deficit (EPD) or Economic Cost of Ruin (ECOR) -is an enhancement to the probability of ruin concept(and thus shortfall risk at VAR) in which the severity of the ruin is also affected. Technically, it is the expected value of shortfall.
- Tail Value at Risk (Tail VAR) or Tail Conditional Expectation (TCE) -an ECOR-like measure in the sense that both the probability and the cost of 'tail events' are considered.
- Tail events-unlikely but extreme events, usually from a skewed distribution. Rare outcomes, usually representing large monetary losses.

Question.9

(a) Enterprise risks involved in solvency transactions as well as ageing debts have to be taken care of on a day-to-day basis in the business. What are the instruments used for this purpose and application there of? [6]

Answer:

Major tools (instruments) for managing enterprise risk are as below:

Instrument	Purpose	Remarks
Guarantee	Guarantees can be financial guarantees or performance guarantees. Financial guarantees protects against the financial loss on failure to meet financial obligations. Performance guarantees are protection against non-performance of contractual obligations.	Financial Institutes provide Guarantees as a risk-cover against a collateral by the buyer for a consideration

Letter of Credit or Documentary Credit.	Guarantee against non-payment of purchase consideration by the buyer in the nature of off-balance sheet financing.	Financial Institutions issue this instrument for a consideration. It can be recoverable or irrevocable. It can also be revolving.
Under-writing	Under-writing is a protection mechanism available in the capital market to cover the risk of non-subscription to a public issue.	Financial Institutions offer this risk cover for a consideration after due evaluation of risk.
Collateralised Debt obligations	Taken against short-term and long-term loans for working capital as well as fixed assets.	Financial Institutions offer this risk cover for a consideration after due evaluation of risk and cover themselves completely either through hypothecation or pledges or equitable markets.
Asset Securitisation	Companies offering financial services of hire-purchasing, leasing, etc., try to raise finance through this method.	This is a special purpose vehicle (SPV) to manage default risk. Financial institutions as well as public subscribe to this method for a consideration in the form of i being traded.
Factoring	Companies resort to this instrument both as a risk cover and insure cash flow.	Specific financial institutions called factoring companies offer this service for a commission with recourse or without the recourse.

(b) What are the characteristics of Insurance Exposures? [6]

Answer:

The characteristics for an exposure to be covered by Insurance are as follows:

1. Pure Risk:

These are classified into personal risk, property risk, liability risk and loss of income risk.

- Personal Risk – Can happen due to premature death, old age, sickness or disability and unemployment.
- Property Risk – Can be classified as loss of property, loss of use of property, additional expenses arising out of loss of property.
- Liability Risk – Can arise as injury to people or damage to property or negligence or carelessness.
- Loss of Income Risk – Consequential loss of income arising out of personal or property losses.

2. Similar Exposures:

Predictions of losses through application of statistical computations with the help of theory of probability require a sizeable population of similar exposures. This is particularly important in that estimation of probabilities for the happening of an event needs an adequate large sample, as accuracy increases with bigger sample.

3. Accidental Losses:

Insurance contracts allow payments only for accidental losses which beyond the insured's control. Losses taking place unintentionally alone are covered by Insurance. Suppression of information of a known risk will not entitle for compensation.

4. Definite Loss:

A definite loss has three facets. It should be recognizable and should be susceptible to verification. The loss should be measurable. This is particularly important in that premium are computed mainly on the estimated quantification of losses.

5. Large Loss:

As there is always a consideration in the form of a premium for receiving a compensation for a loss, care should be taken that the premium to loss ratio is sufficiently favourable. Insurance tariffs normally form a very small percentage sometime even less than a per cent.

6. Catastrophic Losses:

Catastrophic losses from natural disasters have two main characteristics:

(a) They are limited to geographic area where the impact has taken place.

(b) Prediction of the event is very difficult. For example storms and floods or earthquakes etc. can create catastrophic losses as such an Insurer will have to take special precautions of calculating the premiums. Even then the loss may be so huge that the consumers normally resort to sharing the risks through reinsurance as also ensures dispersion of risks over a larger geographical area.

(c) What are the broad categories of risks that can be identified for an organisation? **[3]**

Answer:

Broad categories of risks that can be identified for an organisation

A number of factors influence the risk and depending upon the cause, the risks can be broadly classified into the following major types:

- Strategic Risks: examples are Government and economic factors, customers, competitors, new technologies etc.
- Operational Risks: examples are suppliers, process and internal risks, distribution, customers, competitors, environmental factors etc. ,
- Investment Risks- examples are interest rates, purchasing power, liquidity, default, convertibility, portfolio etc. ,