FINAL EXAMINATION
[GROUP-III]

SUGGESTED ANSWER TO QUESTIONS
DECEMBER 2011

PAPER – 13 : MANAGEMENT ACCOUNTING – STRATEGIC MANAGEMENT

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

The figures in the margin on the right side indicate full marks.

Section I (60 Marks)

(Strategic Management)

Answer Question No. 1 *and* any other two *more from the rest in this section.*
(*Please answer all part of the question at one place.*)

Question :

1 (a) In each of the cases/statements given below/one of four alternatives is correct. Indicate the correct answer. [1×10]

(i) Brand name such as Coca-Cola, Sony, Mc Donald's and Nike are a source of competitive advantage as:

(A) They are owned by global firms

(B) They are more than 50 years old

(C) They are well-managed brands

(D) They are highly innovative firms

(ii) The product life cycle is decreasing for an increasing number of products because of:

(A) Technological changes in materials and processes

(B) Changing tastes of consumers

(C) Competitive activity aimed at increasing market value

(D) All of the above

(iii) The acquisition of Corus by TISCO is an example of:

(A)Horizontal integration

(B) Vertical integration

(C) Concentratic diversion

(D) Forward integration

(iv) Focus on cost reduction;

- (A) May result in overlooking competitor's efforts to differentiate what has traditionally been an undifferentiated commodity like product
- (B) Is the best way to compete to earn higher profits
- (C) Takes care of changes in customer needs and expectations
- (D) Cannot create value for the customers

(v) Target price is:

- (A) Market driven
- (B) Product driven
- (C) Cost driven
- (D) Investment driven

(vi) Which one of the following is not a measure related to Balanced Score Card?

- (A) Financial
- (B) Customer satisfaction
- (C) Internal processes
- (D) Gap Analysis

(vii) Value analysis aims at:

- (A) Increasing sales by economizing expenditure and increasing productivity
- (B) Reducing cost by economizing expenditure and increasing productivity
- (C) Reducing profit by increasing expenditure and increasing productivity
- (D) Reducing cost by economizing expenditure and increasing manpower

(viii) Forecasting models like Regression analysis and Economic modeling fall in the category:

- (A) Naive Quantitative model
- (B) Casual Quantitative model
- (C) Delphi model
- (D) Normal group technique

(ix) An increase in productivity, augmented by automation, as one of the environmental factors that can affect an organization's strategy, should be classified as the:

- (A) Economic change in environment
- (B) Demographic change in environment
- (C) Technological change in environment
- (D) Industry change in environment

(x) The corporate governance framework should ensure:

(A) Equitable treatment of all shareholders

(B) Rights of stakeholders as established by law

(C) Timely and accurate disclosure of all material matters including finance, performance and ownership of the company

(D) All of the above and social responsibility

(b) State whether the following statements, based on the quoted terms, are 'TRUE' or 'FALSE' with justifications for your answer. If any statement is false, you are required to give the correct terms, duly quoted. No credit will be given for any answer without justification: [1×5]

(i) Cash Reserve Ratio (CRR) refers to the cash which banks have to maintain with RBI as a percentage of their demand and time liability.

(ii) Ansoff proposed that for filling the corporate planning gap, one follows four strategies, namely, market penetration, product differentiation, market identification and diversification.

(iii) Delphi can never be useful as a sales forecasting tool though it may be a reasonably good tool for demand estimating.

(iv) Blue Ocean Strategy is concerned with moving into new market with new product.

(v) CVP model is a simple break-even model.

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

(i) Barriers to entry

(ii) Value tests

(iii) Turnaround management

(iv) Direct Product Profitability (DPP)

(v) Strategic Advantage Profile (SAP)

Answer to Question: 1(a) :

(i) (C) They are well managed brands

(ii) (D) All of the above

(iii) (A) Horizontal integration

(iv) (A) may result in overlooking competitor's efforts to differentiate what has traditionally been an undifferentiated commodity like product

(v) (A) Market driven

(vi) (D) Gap Analysis

(vii) (B) Reducing cost by economizing expenditure and increasing productivity

(viii) (B) Casual quantitative model

(ix) (B) Demographic change in environment

(x) (D) All of the above and social responsibility

Answer to Question: 1(b) :

(i) True

(ii) False. These are market penetration, product development, market development and diversification.

(iii) True

(iv) False – It refers to creating a new market place where there is no competition.

(v) True

Answer to Question: 1(c) :

(i) The expression indicates the factors like economies of scale, product differentiation and capital requirements, which make it difficult for a new entrant to enter and gain a foothold in an industry.

  a. Value tests are a set of tests, being the first step in the development of systematic approach for value engineering that needs to be applied to a product, which is slated for value engineering.

(ii) The term refers to the management measures, which reverse the trends in the performance indicators of an organization thereby turning a sick enterprise back to a healthy one.

(iii) The concept of DPP is used in dealing with the marketing costs. It identifies the cost drivers so as to manage them. They are the size of the product, probability of demand, delivery cycle and the mode of ordering.

(iv) SAP is a tool for making a systematic evaluation of the enterprise's strategic advantage factors, which are significant for the company and its environment.

Question :

2.(a) Discuss in brief the elements of a meaningful mission statement of a corporate organization

(b) Explain the linkage between environmental analysis and strategic management.

(c) What is 'Profit Planning'? What is 'Boston classification'? Why the Public Sector Insurance Companies have started using BCG Services of late? [5+5+(2+6+2)]

Answer to Question: 2(a)

The major elements of an effective corporate mission statement are :

(i) Clearly articulated: The mission statement should be succinct and easy to understand so that the values, purposes and goals of the organization are clear to everybody in the organization and will serve as a guide to them.

(ii) Relevant: A mission statement should be appropriate to the organization in terms of its history, culture and shared values.

(iii) Current: A mission statement may become obsolete after some time. As such it should be reviewed and updated on a regular basis taking into consideration the changes in environmental and organizational factors.

(iv) Written in a positive tone: A mission statement should be capable of inspiring and encouraging commitment towards fulfilling the mission.

(v) Unique: An organization's mission statement should established the individually, if not uniqueness, of the company.

(vi) Enduring: A mission statement should continually guide and inspire and be challenged in the pursuit of the mission of the organization, never achieving the ultimate goal.

(vii) Acceptable to the target audience: Ideally, the mission statement should define the customers, product/services, markets, technology, philosophy and self-concept.

Answer to Question: 2(b)

Environmental analysis has three basic goals.

(i)The analysis should provide an understanding of current and potential changes taking place in the environment. It is important that one must be aware of the existing environment and at the same time have a long-term perspective too.

(ii) Environmental analysis should provide inputs for strategic decision-making. Mere collection of data is not enough. The information collected must be used in strategic decision-making.

(iii) Environmental analysis should facilitate and foster strategic thinking in organization, typically, a rich source of ideas and understanding of the context within which a firm operates. It should challenge the current wisdom bringing fresh viewpoints into the organization.

The following are the specific benefits of environmental study:

(i) Development of broad strategies and long-term policies of the firm.

(ii) Development of action plans to deal with development of technological advancements.

(iii) To foresee the impact of socio-economic changes at the national and international levels on the firm's stability.

(iv) Analysis of competitor's strategies and formulation of effective counter measures,

(v) To keep oneself dynamic.

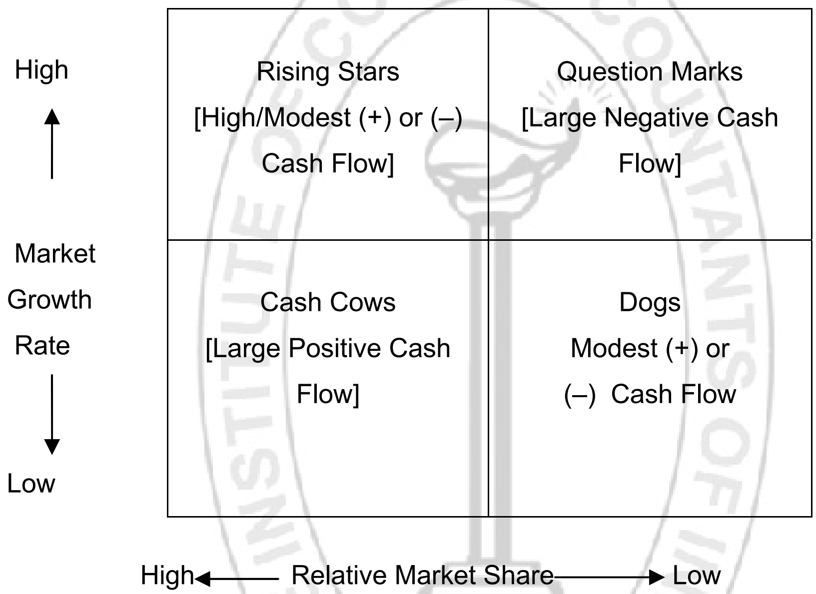
Answer to Question: 2(c)

Profit planning is a term used in describing methods of analyzing a product-market portfolio with the following aims:

(i)To identify the current strengths and weakness of an organization's product in its markets and the state of growth or decline in each of these markets.

(ii) To identify what strategy is needed to maintain a strong position or improve a weak one.

BCG classification : The Boston Consulting Group (BCG), popularly known as the BCG Matrix or Growth-Share Matrix, have developed a matrix for evaluation of business portfolio, which analyses products and business by market share and market growth. BCG model is based on two variables, viz., the rate of growth of the product-market and the market share in that market held by the firm relative to its competitors. This growth/share matrix for the classification of products into four groups, like Rising Stars, Question Marks, Cash Cows and Dogs is known as Boston classification.



a) Stars are the promising products with high share and high growth. These require capital expenditure, possibly in excess of the cash they generate, in order to maintain their market position, but promise high returns in the future. In this case of stars the high volume is likely to yield the benefits of the experience curve and a reduction in the cost.

b) Cash Cows with a high share of a low growth market. It need very little capital expenditure and generates high level of cash income. In this case the high volume would lead to the benefits of the experience curve yielding higher potential profits. Being in slow growth industries, they do not normally require significant reinvestment.

c) A Question Mark sometime called Problem Child. It is a product in high/fast growing market but has a low market share. A decision needs to be taken about whether the product justifies. Considerable expenditure in the hope of increasing its market share. The benefit of Stars and Cash Cows would not be available in case of Question Marks.

d) Dogs are the products with a low market share of a low growth market. They may be ex-cash cows that have now fallen on hard times. Dogs should be allowed to die or should be killed off. Dogs are the worst of all combinations. It may produce low profit or loss. They are often a cash drain and use up a disproportionate share of management time and resources. It may be harvested before liquidation.

There are also other three stages:

a) Infants – products in an early stage of development;
b) Warhorse – products that have been cash cows in the past and still are making acceptable sales and profits even now;
c) Dodos – low share, negative growth and negative cash flow.

The product life cycle concept can be added to market share/market growth classification of products.

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 today's market competition the BCG matrix services are being used by the public sector Insurance Companies to analyze their market share, service levels and its improvements.

Question :

3(a) The following data are available from the records of a company:

Capital: ₹ 10,000

NOPAT: ₹ 2,000

Cost of Capital (C*****) : 15 Percent

Return on Capital (r): 20 Percent

Economic Value Added (EVA) = Capital x (r – C*) =10,000(0.20 – 0.15) = 500.

Illustrate and quantify the impact of the four strategies [Improvement in operating performance, Profitable investment, Withdrawal of unproductive capital and Reduction in the cost of capital] on improving EVA using above recorded data.

(b) Define a PPP in the context of developmental efforts in infrastructure in India.

(c) What is meant by Strategic Total Cost Management? Mention the specific tools with which the Management Accountant should associate himself in the implementation of Strategic TCM in an organization. [(2½ x 4)+2½+(2½+5)]

Answer to Question: 3(a)

Strategy I: Improvement in operating performance.

i) NOPAT increase from 2000 to 2250, due to greater operating efficiencies. This rises to 22.5 %. As a result EVA rises to 750.

ii) EVA = Capital x (r – C*) = 10,000 (0.225 – 0.150) = 750.

Strategy II: Profitable investment.

i) A new project requiring 10,000 is expected to earn a return of 18 % thereby adding 1800 to NOPAT. This project will increase EVA, even though the consolidated return will decline to 19% (the average of 20% and 18%).

ii) EVA = Capital x (r – C*) = 20,000 (0.19 – 0.15) =800.

iii) Note that maximizing EVA is more important, not maximizing return on capital. Hence, the project should be accepted.

Strategy III: Withdrawal of unproductive capital.

i) 1000 of working capital can be liquidated with only a margin decline of NOPAT. The NOPAT will fall by just 50 withdrawing this working capital would increase the rate of return to 21.67% (2000 – 50) / (10000 – 1000) and EVA to 600.

ii) EVA = 9000 x (0.216 – 0.150) = 600

Strategy IV: Reduction in the cost of capital

i) The capital structure of the firm is altered and its change lowers the cost of capital to 13%, without affecting anything else. As a result EVA rises from 500 – 700.

ii) EVA = Capital x (r – C*) =10000 (0.20 – 0.13) = 700

Answer to Question: 3(b)

Public-Private Partnership (PPP or P_3) involves a long-term contractual agreement between a public sector authority and a private party. According to the Viability Gap Funding (VGF) scheme and guidelines for the India Infrastructure Development Fund, issued by the Ministry of Finance, GoI, a public-private partnership occurs when government agencies share resources and revenue with a non-government company. These partnership arrangements are used to meet specific niche requirements and are legally binding.

According to the Asian Development Bank, PPP is a range of possible relationship between public entity and the private party in the context of infrastructure and core services. This partnership is a mutually beneficial long-term relationship between the public and private sectors, which are an effective way to bridge gaps between demand and available resources, quality and accessibility, and risk and benefit.

Answer to Question: 3(c)

(1st Part): This is a new world-class approach to cost management in a manufacturing enterprise which would require understanding the Total Production Management (TPM), Total Quality Management (TQM) and align the Total Cost Management (TCM) on the lines of the other two strategies. This will ensure that all the aspects of the corporate strategies are translated in term of values and control in the total cost management strategy. When Total Cost Management strategy is to be implemented, it is necessary that certain new concepts be understood.

(2nd Part): As an important member of the strategic management team in an organization, the Management Accountant plays a very significant role in the introduction of Total Cost Management strategy which can embrace many different areas in business and as such there are specific tools to be employed for the implementation as follows:

(i) Enterprise wide cost system: Depicts beginning to end costs starting from designing, sourcing, manufacturing and delivering a product or set of products to the customer;

(ii) Production Cost Management: Aims at reduction of total cost of design, material management, production by Kaizen method of optimizing each cost component;

(iii) Marketing Cost Management: Identifies products, brands, segments and markets that augur greater growth with least incremental marketing costs;

(iv) Support Cost Management: Aims at improving productivity and efficiency of all line functions while reducing the resources needed to provide such improvements, and

(v) Transformation Cost Management: Identifies and drives the efforts of change management towards avenues where they will have the maximum impact on costs for reduction.

Question :

4. Write short notes on the following: [5×4]

(a) Conglomerates and Diversified Majors

(b) Kaizen Costing

(c) McKinsey's 7_S Framework

(d) J. Strauss and R. Frost's E-marketing model

Answer to Question: 4(a)

A conglomerate is firm which has at least five or six divisions, which sales different products principally to market rather than to each other. Conglomerates diversified quickly, primarily through mergers, and usually into product or service lines, unrelated to their prior business.

A diversified major is a firm, which developed their diversification over a long period of time primarily through internal expansion into products or services related to their prior business.

The conglomerate management style is different. Their central offices are much smaller than those of diversified majors. Usually they have no staff officials (e.g. for R & D). They tend to place most major operating decisions at decentralized levels. This is often because the central managers are autonomous as long as divisions 'deliver'. Diversified major have better opportunities for synergy than conglomerates.

Answer to Question: 4(b)

The word ***"Kaizen"*** has originated from a Japanese word meaning continuous improvement or enhancement estimation during production. This involves setting up annual targets for improvement in elements of costs in conversion as part of production.

Kaizen costing is a costing technique to reflect continuous improvement efforts in small steps to the following;

(i) Control, reduce and eliminate various elements of costs in conversion as part of production. Each element of this cost is subject to continuous improvement.
(ii) Improve with quality assurance technology,
(iii) The effective responsiveness to the target customers
(iv) Improve the production process after manufacturing activities have begun (i.e., optimization of production by reducing the wasteful activities), and
(v) Financial endurance of business enterprises.

Any continuous improvement project in a Shop-Floor is known as Gemba Kizen where Gemba refers shop-floor and Kaizen refers continuous improvement. Japanese expert Yashuhiro ***Monden*** defines Kaizen costing as the maintenance of present cost levels for the products currently being manufactured through systematic structured efforts to achieve the desired cost level. For example, optimization of total cycle cost is a typical Kaizen attempt. (Total cycle time cost = Set up time cost + Process time cost + Move time cost + Delay time cost).

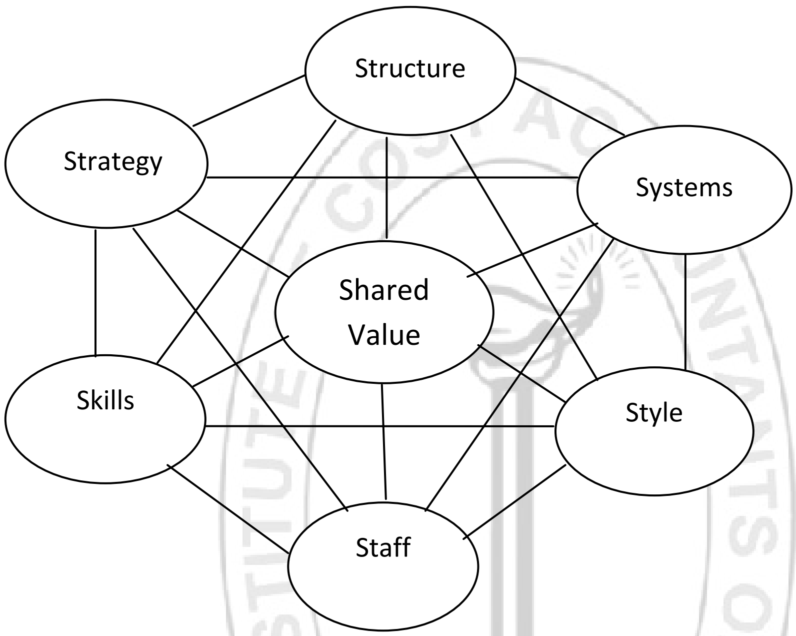
Answer to Question: 4(c)

Tom Peters and Waterman's research has shown that any intelligent approach to organizing had to encompass, and treat as interdependent, at least seven variables: Structure, people, management style, systems and procedures, guiding concepts and shared values (i.e. culture). They defined this idea more precisely and elaborated what came to be known as the M_CKinsey7$_S$ Framework. This framework has considered on around the world as a useful way to think about organizing and has helped in forcing explicit thought about not only the hardware – strategy and structure – but also about the software of organization – style, systems, staff (people), skills and shared values. This model considers the important criteria in success of a business organization and forms an interconnected framework of the above-mentioned seven elements.

Of these, shared values, system, style all relate to behevaioral patterns involving staff (people) and their skill. This behavioral patterns act as the binding fabric that successfully holds the company's cohesive activities and strategies together. Four major aspects of the behevioral fabric are of crucial importance. They are: Power, Leadership, Culture and Risk.

Shared values the central core of the framework, give spirit among organizational members regarding 'who we are and where we can heeded.' The spirit permitting in the organization in turn is reflected in the values, attitudes and philosophy of its members.

Thus, 7_S Framework is a powerful expository tool. However, it may be stated that changing the culture of the organization, which is pivotal to the MC Kinsey7S model, is difficult task.



McKinsey 7s Framework

Answer to Question: 4(d)

E-marketing is the result of information technology applied to traditional marketing. It evolves from the company's overall E-business strategies and selected business models. It's application of a broad range of information technologies in marketing functions, to achieve the following:

(i) Transform marketing strategies to create more customer value.

ii) More efficient planning and execution of conception, distribution, promotion, and pricing of goods/services.

iii) Create exchanges that satisfy individual consumer and business customer's needs and wants.

Judy Sreauss and Raymond Frost's **E-marketing model** defines E-business as a continuous optimization of a firm's business through digital technology.

EB = EC+BI+CRM+SCM+ERP

Where, EB is electronic business, EC is electronic commerce (to enable buying/selling through digital technology), BI is business intelligence (for collecting primary/secondary data or information), CRM is customer relationship manager (to satisfy customers and build long lasting relationship), SCM is supply chain management (to delivery of products/services efficiently and effectively) and ERP is enterprise resource planning (optimization of business process and lowering costs, application of EDI, i.e. electronic data interface).

E-marketing is normally carried out in the following types:

i) **B2B**–This involves business-to-business marketing of inter-company business done online.

ii) **B2C**–This involves business-to-consumer marketing, where goods/services are directly marketed by business organizations directly to the ultimate consumers using the Internet.

iii) **C2C**–This involves consumer-to-consumer marketing, where consumers directly sell the goods/services to other consumers, using the Internet system.

Among these types, the maximum E-marketing activities take place, and the maximum online marketing opportunities lie in B2C where marketers sell directly to ultimate consumers.

SECTION – II (40 marks)

(Risk Management)

Answer Question No. 5 and any other two more from the rest in this section

(Please answer all part of the question at one place)

Question :

5 (a) In each of the cases/statements given below, one of four alternatives is correct. Indicate the correct answer. [1x5]

(i) ECOR in risk management means:

(A) Expected Cost of Ruin

(B) Expected Cost of Opportunity Loss

(C) Economic Cost of Ruin

(D) Economic Cost of Opportunity Loss

(ii) Post-loss objectives in risk management are:

(A) Survival of the organization, continuance of organization's operations

(B) Initiate and improve the income / earnings

(C) Obligation to the society

(D) All of the above

(iii) Physical risk arising out of social, political, economical and legal environments is often identified :

(A) Through the performance of lead indicators

(B) Through the performance of lagging indicators

(C) Through the performance of lead and lag indicators

(D) Through the performance of the government

(iv) Often analysts focus on characteristics of loss distribution such as:

(A) Expected loss

(B) Standard deviation of loss

(C) Maximum probable loss

(D) All of the above

(v) Risk management strategies are:

(A) Avoid risk, Reduce risk, and Retain risk

(B) Combine risks, Transfer risk, and Share risk

(C) Hedge risk

(D) All 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 statement is false, you are required to give the correct terms, duly quoted. No credit will be given for any answer without justification: [1×5]

(i) EPD in risk management means 'Expected Policy holder Deficit'.

(ii) Performance related risk measures include shortfall risk.

(iii) Interest rate risk refers to the uncertainty of market volumes in the future and the quantum of future income caused by the variations in the interest rates.

(iv) The IRDA regulates all kinds of insurance related activities in India.

(v) 'Future' a derivative, is used as a hedging mechanism against 'Risk'.

Answer to Question: 5(a)

(i) (C) Economic Cost of Ruin

(ii) (D) All of the above

(iii) (A) Through the performance of lead indicators

(iv) (D) All of the above

(v) (D) All of the above

Answer to Question: 5(b)

(i) True

(ii) False: Performance related risk measures do not include shortfall risk

(iii) True

(iv) False: The IRDA regulates the general insurance only and life insurance related activities are excluded from its purview

(v) True

Question :

6(a) In today's environment, financial firms operate in increasingly complex, competitive and global challenging market. In the light of this statement, can you briefly describe the various risks prevalent in the financial services?

(b) What types of risks a firm may face while developing a new product / market?

(c) Explain the concept of 'Risk Pooling' and 'Diversification of Risk'. [5+4+(3+3)]

Answer to Question: 6(a)

In the light of Basel II Guidelines, the following risks is identified in banking and financial sectors:

i) **Credit Risk:** Risk resulting from uncertainty in counterparty's ability or willingness to meet its contractual obligations, e.g. a bank gives a house-building loan to a customer and his default triggers a total or partial financial loss to the bank.

ii) **Operational Risk:** Risks associated with their back office operations – what came to be called operational risks (i.e. risks other than credit or market risks). A bank office staff fails to catch a discrepancy between a reported trade and a confirmation from the counterparty. Ultimately, the trade could be disputed running into litigation and causing a loss.

iii) **Market Risk:** Such a risk arises due to uncertainty in the future market value of a portfolio of assets and/or liabilities and possible decline in value. Market risk exists in many forms some of which are as follows:

a) Liquidity risk: It is a financial risk from a possible loss of liquidity. There are two types of liquidity risks: (i) Specific liquidity risk – it is the risk that particular firms will loss liquidity. This might happen if the firm's credit rating fell or something else happened which might cause counterparties to avoided trading with or lending to the firm, and (ii) System liquidity risk – which affecting all participants in the market. It is the risk that entire markets will loss liquidity. Financial markets tend to loss liquidity during the periods of crisis or high volatility.

Answer to Question: 6(b)

Developing a new product/market exposes a firm to a combination of four kinds of risks. These risks are particularly acute where diversification is concerned because of the simultaneous novelty of both product and market.

i) Market risk: The firm has entered in a new market where established firms already operate. The risks involved are:

a) Not correctly understanding the culture of the market or the needs of the consumer;

b) High distribution costs due to lack of economies of scale;

c) Failure to be seen as credible by the buyers in the market due to the lack of track record or brand;

d) Exposure to retaliation by established firms with more entrenched position.

ii) Product risk: the firm is involving itself in a new production process, which is already being conducted by the rival firms. The risks this poses are:

a) Higher production costs due to lack of experience;
b) Initial quality problems or below quality products causing irreparable harm to the reputation in the market;
c) Lack of established production infrastructure and supply-chain relations, which will make costs higher and may limit product innovation and quality.

iii) Operational and Managerial Risk: this boils down to the danger that management will not be able to run the new business properly. This carries with it with the second danger that management will also be distracted from running the original business effectively too.

iv) Financial risk: this relates to the share price of the business. Shareholders are generally suspicious of 'radical' (and particular diversification) for the following reasons:

a) The product and market risks lead to volatile returns;
b) The firm may need to write off substantial new net assets if the venture fails;
c) The investment needed will reduce dividend and/or necessitate new borrowing;
d) A diverse and unique portfolio makes it harder to compare the firm with others in the same industry when trying to evaluate its risks and returns.

The effect will be for the share price to decline to reflect the uncertainties created by the strategy.

Answer to Question: 6(c)

Risk Pooling: 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 and diversifying risk can be implemented easily.

Monitoring become easier when the specific agency put in charge knows that all the risks have been identified and being monitored accordingly to the system drawn up to quantify the total risk through pooling and with a control figure. Process is as follows:

Step I – plan the way to monitor

Step II – monitoring executed

Step III – controlling and checking whether there is any variation from monitoring exercise, and

Step IV – act to corrective measures for deviation. This correction act can be combining or integrating or diversifying risks.

Diversification of risk: Diversifiable risk (also known as unsystematic risk) represents the portion of asset's risk that is associated with random causes that can be eliminated through diversification. It's attributable to firm specific events, such as strikes, lawsuit, regulatory actions and loss of a key account. Unsystematic risk is due to factors specific to an industry or a company like labour unions, product categories, R&D, pricing & marketing strategy etc.

While the non-diversifiable risk (also known as systematic risk) is the relevant portion of an asset's risk attributed to market factors that affect the firms such as war, inflation, international incidents, and political issues. It cannot be eliminated through diversification. These risks are unavoidable and the market does not compensate for taking exposure to such risks.

The systematic risk, which is the market risk is external to an organization and also termed as market risk. The identification of characteristics of market risk through statistical correlation "Beta" (β_i), which is a measure of market risk.

Question :

7(a) An Automobile Insurance Company computes the premiums for a motor vehicle (INR 3 lakhs) on the following basis [rates are typically per thousand of sum insured unless otherwise specified. The rating parameters are the (i) age of the vehicle, and (ii) age of the driver]:

A) The rates for the age of the vehicle are as follows:

If age of vehicle < 5 years, then rate is 0.5

If age of vehicle > 5 years, then rate is 0.8

Premium I = 0.5/ 1000 X 300000 = ₹150

B) The rates of the age of the driver are as follows:

For driver age 30 years, rate is 7.5/1000

For driver age 35 years, rate is 7.9/1000

So the premium for a vehicle with ages less than 5 years and the age of driver is 35, the premium can be calculated as;

Premium I = 0.5/1000 X 300000 = ₹150

Premium II = 7.9/1000 X 300000 = ₹2,370

Total Premium = Premium I + Premium II = ₹ (150 +2,370) = ₹2,520

Based on the above details, briefly answer to the following issues:

(i) What are the variables considered for computation of premium?

(ii) Tariff rates as indicated by the insurance company vary with the age of vehicle and the age of driver. Why?

(b) Define Enterprise Risk Management.

(c) What are the performance related measures for risk measurement? [(3+5)+3+4]

Answer to Question: 7(a)

(i) The variables involved are the following:

- The insured value;
- Age of the vehicle, and
- Age of the driver.

(ii) Tariff rate varies according as the experience of the insurance companies in regard to claims settlement. If there have been too many accidents and the claims have been a large loss, then the premium rates will have to take into consideration the following:

- Cost of payments for losses;
- Cost of operation and maintenance of insurance pool;
- Reserve for contingencies, and
- Return on investment.

Increase in age of the car and increase in age of the driver are directly proportional to increase in risk. Again a change in model also brings in obsolescence and this will lower the insurance value.

Answer to Question: 7(b)

Enterprise Risk Management (ERM): It is the discipline by which an organization in any industry assesses control, exploits finances and monitors risks from all sources for the purpose of increasing the organization's short-term and long-term value to its stakeholders.

Answer to Question: 7(c)

Performance Related Measures (PRM): These measures concentrate on the mid-region of the probability distribution i.e. the region near the mean, and are relevant for determination of the volatility around expected results.

The following are the measures of PRM:

i) Return on equity (ROE);
ii) Operating earnings;
iii) Earnings before Interest, Dividends, Taxes, Depreciation and Amortization (EBITDA);
iv) Cash Flow Return on Investment (CFROI);
v) Weighted Average Cost of Capital (WACC);
vi) Economic Value Added (EVA).

Question :

8. Write short notes on the following: [5×3]

(a) CAPM

(b) Impact of macro-economic factors and risk

(c) Re-insurance

Answer to Question: 8(a)

This model developed by William F. Sharpe and John Linter in the 1960s, wants to show a relationship between the unavoidable risks and expected return from a security. This model takes into account not only the risk differential between common stocks and Government securities, but also the risk differential between common stocks of the firm and the average common stocks of all the firms or broad based market portfolio. The CAPM model is based on the risk-averse behaviour of an investor.

It is concerned with two key questions:

(i) What is the relationship between risk and return for an efficient portfolio?

(ii) What is the relationship between risk and return for an individual security?

The CAPM model is based on the following assumptions:

(i) Capital markets are highly efficient where investors are well-informed;

(ii) The cost of insolvency or bankruptcy is zero;

(iii) There are negligible restrictions on investments;

(iv) No investor is large enough to affect the market price of a stock;

(v) The quantum of risky securities in the market is available;

(vi) There is a perfect competition with no taxes, no transaction costs and securities are totally divisible; and

(vii) There are two types of investment opportunities. The first one is risk-free securities, like treasury bills, government bonds etc.. The market portfolio of common stocks gives the second investment opportunities.

According to the CAPM model, the expected rate of return from any security is calculated as follows:

$$R_i = R_f + (R_m - R_f)\beta_i$$

Where,

R_i = The expected return on i-th securities;

R_f = The rate of return on a risk-free securities;

R_m = The expected rate of return on market portfolio; and

β_i = The risk associated with the i-th securities relative to the stock market as a whole (called as beta coefficient), i.e.,

β_i = risk of i-th securities / risk of stock market as a whole

$\beta_i < 1$, it implies defensive investment,

$\beta_i > 1$, it implies aggressive investment, and

$\beta_i = 1$, it implies neutral investment.

Answer to Question: 8(b)

Relationship between risk and return can never be over emphasized, higher the risk the returns needs to be higher and the computation of the risk premium has always been a million dollar question. However, risk perceptions of investors tend to be different with the onsite of the business cycles. In recession, the investors tend to be conservative as their appetite for risk is reduced and they go after growth sectors, which have lower risk. In a security market, low risk growth sector have always been the biggest gainers in terms of returns. This explains that onset of recession upsets the risk return balance.

Macro economic factors like changes in interest rates, inflation rate, money supply and index of industrial production (IIP data) have a big impact on the investors risk perception. Analysis has shown that in a regime of high interest rates and high inflation rate, low risk sectors perform better than high-risk stocks. As the interest rates and inflation decline the high risk sectors tend to do better.

Answer to Question: 8(c)

Risk cannot be avoided through insurance but may be considered as a means to transfer the risk. It is also a mechanism to compensate the financial and economic loss due to risk.

All insurance companies have a risk appetite i.e., a limit on the amounts that they can settle for any given claim that is made by the insured. Another company referred to as a 'Re-insurance Company' settles any claim made beyond this specified limit by the insured. Thus re-insurance is insurance for insurance companies.

Re-insurance is the direct transfer of part of the risk that a direct insurer assumes by way of an insurance contract on behalf of the insured, to a second insurance carrier, the Re-insurance who has no direct contractual relationship with the insured. Direct insurers need reinsurance to limit annual fluctuations in the losses they must bear on their accounts and to protect the assets of the company in the event of catastrophic losses from natural disasters. Direct insurers take on hazards and risks from policy holders. Re-insurers take on hazards and risks from the direct insurer.

Insurance companies typically enter into an agreement with the re-insurer and sign a re-insurance Treaty which states all the terms and conditions of the agreement. The re-insurer agrees to accept a certain fixed shares of risk upon terms as set in the agreement. The well-known Re-insurance companies in the world are Swiss Re, Munich Re, Zurich Re, and others.