# FINAL EXAMINATION GROUP IV (SYLLABUS 2012)

### SUGGESTED ANSWERS TO QUESTIONS

### **DECEMBER 2017**

### Paper-17: STRATEGIC PERFORMANCE MANAGEMENT

Time Allowed : 3 Hours Full Marks : 100

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

This Question paper has been divided into 2 Sections, viz.,

Section-A (20 marks) and Section-B (80 marks)

### SECTION A (20 Marks)

 (a) From the following information given below relating to XYZ Ltd., calculate Altman's Zscore and comment:

Working capital/Total Assets = 25%

Retained earnings/Total Assets = 30%

Earnings before interest and taxes/Total debt = 15%

Mkt. Value of Equity Book value of total debt = 150%

Sales/Total Assets = 2 times 6

- (b) What is meant by Decision Support System? State four components of Decision Support System.
- (c) The cost (c) of a firm is given by the function C = 4x³ + 9x² + 11x + 27. Find the Average Cost, Marginal Cost, Average Variable Cost and the Average Fixed Cost, 'x' being the output.

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(d) Describe the objectives of Performance Appraisal.

Answer: 1

(a) As per Alt man's Model of Corporate Distress Prediction.

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5.$$

Where Z = overall index of Multiple Index Function.

X<sub>1</sub> = Working Capital to Total Assets(a liquidity measure)

X<sub>2</sub> = Retained Earnings to Total Assets (a measure of reinvestment of earnings)

X<sub>3</sub> = FBIT to Total Assets (a profitability measure)

X<sub>4</sub> = Market Value of Equity & Preference to Book value of Total Debt (a measure of

average)

 $X_5$  = Sales to Total Assets (a measure of Sales-generating ability of the firm's assets)

Here, the five variables are as follows:

 $X_1 = Working capital / Total Assets = 25\%.$ 

X<sub>2</sub> = Retained earnings/Total Assets = 30%

X<sub>3</sub> = Earnings before interest add taxes /Total Assets = 15%

X<sub>4</sub> = Market value of Equity /Book value of

Total debt = 150%

 $X_5$  = Sales /Total Assets = 2 times.

Hence, Z score 
$$(1.2 \times 25\%) + (1.4 \times 30\%) + (3.3 \times 15\%) + (0.6 \times 1::>0\%) + (1 \times 2)$$
  
=  $0.30 + 0.42 + 0.495 + 0.90 + 2.00 = 4.115$ 

<u>Comment</u>: As the calculated value of Z-score is much higher than 2.99, it can be strongly predicted that the company is a non-bankrupt company.

(b) <u>Decision Support System</u> (DSS) are a specific class of computer-based information system that supports the decision making activities. DSS analyzes business data and provide interactive information support to managers and business professionals during the decision-making process, from problem recognition to implementing the required decisions.

Components of a typical DSS:

<u>Data Management Components-</u> It performs the function of storing and maintaining information for DSS.

<u>Model Management Component</u> - It consists of both the DSS's models -and the DSS model management system.

<u>User interface Management Components</u>. It consists of the user interface management system. It combines the know-how with the storage and processing capabilities of the computer.

<u>Knowledge Management Components</u> — It is an expert system, providing information about the relationship among data that is too complex for a database to represent.

A key component to any DSS is Business Intelligence reporting tools, processes, and methodologies.

(c) Cost function 
$$C = 4x^3 + 9x^2 + 11x + 27$$
  
Average Cost =  $C/x = 4x^2 + 9x + 11 + 27/x$   
Marginal Cost =  $dC/dx = 12x^2 + 18x + 11$   
Variable Cost =  $4x^3 + 9x^2 + 11x$   
Average Variable Cost = Variable Cost /  $x = 4x^2 + 9x + 11$   
Fixed Cost = 27.

Average Fixed Cost = 27/x

(d) To review the performance of employees over a period of time.

To judge the gap between actual and desired performance.

To help management exercise organizational control.

Helps to strengthen the relationship and communication between superior-subordinates and management- employees.

To diagnose the strengths and weaknesses of the individuals so as to identify the training and development needs of the future.

To provide feedback to the employees regarding their past performance.

Provide information to assist in other decisions in the organization.

To provide clarity of the expectation and responsibilities of the functions to be performed by the employees.

To judge the effectiveness of the other human resource functions of the organization such as recruitment, selection, training and development.

To reduce the grievances of the employees.

Facilitating layoff or downsizing decisions.

Counseling poor performers.

Determining compensation changes.

Encouraging coaching and mentoring.

Confirming that good hiring decisions are made.

Improving overall organizational performance.

Provide an opportunity for the employee and the supervisor to exchange ideas and feelings about job performance.

#### Section-B (80 Marks)

Five Questions are to be answered out of Seven Questions. (Each question carrying total 16 marks)

2. (a) A Finance Manager is considering drilling a well. In the past, only 70% of wells drilled were successful at 20 meters depth in that area. Moreover, on finding no water at 20 meters, some persons in that area drilled it further up to 25 meters but only 20% struck water at that level. The prevailing cost of drilling is ₹500 per meter. The Finance Manager estimated that in case he does not get water in his own well, he will have to pay ₹15,000 to buy water from outside for the same period of getting water from the well.

The following decisions are considered:

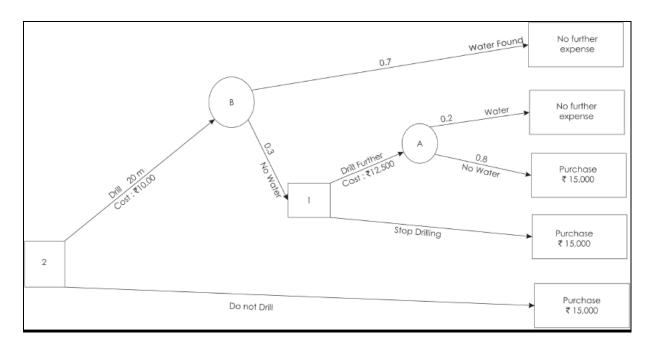
- (i) Do not drill any well;
- (ii) Drill up to 20 meters; and
- (iii) If no water is found at 20 meters, drill further up to 25 meters.

Draw an appropriate decision tree and determine the Finance Manager's optimal strategy. 4+6=10

(b) Briefly state the basic objectives of Competitive Intelligence.

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Answer: 2 (a) Decision Tree



Decision	Details of Outflow	Total Outflow
Do not drill any well.	Purchase Cost ₹ 15000	15000
Purchase		
Drill up to 20 m	Drilling cost for 20 m @ 500 Rs/m = 10,000	10,000 + 0+4500
	0.7 probability of water and 0 further cost	= 14,500
	$= 0.7 \times 0 = 0$	
	0.3 probability of no water and hence	
	purchase for 15000.	
	$Cost = 0.3 \times 15000 = 4500$	
Drill further up to 25 m	Drilling cost for first 20m = 10,000	10,000 + 12,500+
	Drill further up to 25 m = 12,500	12,000 = 34,500
	If water is found, no further cost.	
	If 0.8 chance of no water, purchase Cost	
	$= 15,000 \times 0.8 = 12,000$	

### Alternatively; for the last part,

Drill further up to 25m	Drilling cost for first 20m = 10,000	10,000
	Drill further up to 25 m	+ 2500
	If water is found, no further cost. Then, cost	+ 22,000
	$= (12,500 + 0) \times 0.2 = 2500$	
	If no water, purchase.	= 34,500
	$Cost = (12,500 + 15,000) \times 0.8$	
	$= 27,500 \times 0.8 = 22,000$	

Choice: Drill 20m. If there is no water, do not drill further. Purchase.

### Answer: 2 (b)

Competitive Intelligence (C.I) - Objectives:

To obtain information from the external business environment to utilize in business decision making.

To enable early signal analysis, i.e. early identification of risks and opportunities in the market before they become obvious.

To make planners aware of the levels and trends in competitors' performance to determine the ideal strategy for their own divisions and parent corporations.

To help test and validate an organisation's own assumptions.

To enable adaptation of best practice

To help formulate strategy through understanding of the organization, industry, competitors and strategic business analysis.

To isolate performance gaps in relation to competition.

To provide an early warning of opportunities and threats, such as new acquisitions or alliances and future competitive products and services;

To ensure greater management awareness of changes among competitors, making the organization better able to adapt and respond appropriately;

To ensure that the strategic planning decisions are based on relevant and timely Competitive Intelligence:

To provide a systematic audit of the organization's competitiveness that gives the CEO an unfiltered and unbiased assessment of the firm's relative position.

### 3. (a) From the following given information, calculate EVA:

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	(₹)
Equity Share Capital	10,00,000
13% Preference Share Capital	4,00,000
Reserves and Surplus	12,00,000
Non-trade investments (Face Value ₹ 1,00,000) Rate of Interest	10%
20% Debentures	6,00,000
Profit before tax	6,00,000
Tax Rate	40%
WACC	13%

### (b) What is "Balanced Scorecard? Briefly state its advantages.

2+6=8

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### Answer: 3 (a)

Economic Value Added = NOPAT - WACC × CE

(NOPAT = Net Operating Profit After Tax. WACC Weighted average cost of capital.

CE = Capital employed)

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Items	₹
Profit before tax	6,00,000
Less: Income from Non Trade Investments 10 % × 1,00,000	(10,000)
Add: Interest on debentures 20% × 6,00,000	1,20,000
Net Operating Profit Before Tax	7,10,000
Taxes 40 %	2,84,000
NOPAT	4,16,000

Capital Employed:	
Equity Share Capital	10,00,000
Preference Share Capital	4,00,000
Reserves and Surplus	12,00,000
20% Debentures	6,00,000
Sub total	32,00,000
Less: Non Trade Investments	1,00,000
Capital Employed	31,00,000
WACC × CE = 13% × 31,00,000	4,03,000
$EVA = NOPAT-WACC \times CE$	13,000

### Answer: 3 (b)

Balanced Score Card and its Advantages:

Balanced Score Card is a management system, which goes beyond measurement, to setting and achieving the strategic goals and objectives for an organization.

It is a method of implementing a business strategy by translating it into a set of performance measures derived from strategic goals that allocate rewards to executives and managers based on their success of meeting or exceeding the performance measures.

It is a strategic planning and management system that is used extensively in business and industry. Government and non-profit organisations to align business activities to the vision and strategy of the organization.

It is a performance measurement frame work that added strategic non-financial performance measures to traditional financial metrics to give managers and executives a more balanced view of organisational performance.

It helps planners identify what should be done and measured.

In addition to the core financial performance measures, it incorporates in its scheme, customer perspective, shareholders' perspective, internal business perspectives and the learning and growth perspectives, with key parameters to be monitored.

### **Advantages of Balanced Score Card:**

Holistic approach: It brings strategy and vision as the center of Management focus. It helps companies to assess overall performance, improve operational processes and enable Management to develop better plans for improvement. It provides Management with a comprehensive picture of business operations.

Overall Agenda: It brings together in a single Management Report various aspects like customer orientation, shortening response time and improving quality etc., of competitive agenda.

Objectivity: It emphasizes the need to provide the user with a set of information. which addresses all relevant areas of performance in an objective and unbiased manner.

Management by Objectives: The methodology of Balanced Score Card facilitates communication and understanding of business goals and strategies at all levels of the firm. Thus it enables Management by Objectives.

Feedback and learning: It provides strategic feedback and learning. Balanced Score Card guards against subordination. It emphasizes an integrated combination of traditional and non-traditional performance measures.

Systems Approach: The Balanced Score Card helps Senior Managers to consider all the important performance measures together and allows them to see whether an

improvement in one area has been achieved at the expense of all other.

It broadens the view of divisional managers as to what represents good performance rather than a solely financially oriented view.

It creates a longer term strategic view of performance rather than a short term myopic view.

Organisations can develop performance measures that are explicitly aligned to the corporate strategy and in support thereof.

It considers customer view point which is critical in any business.

It helps to promote accountability as each performance measure could be the responsibility of a nominated individual or individuals.

### 4. (a) The Operating Performance of the three divisions of ABC Co. Ltd., for 2017 is as follows:

Particulars	Division A (₹)	Division B (₹)	Division C (₹)
Sales	38,00,000	1,70,00,000	2,00,00,000
Operating Profit	2,00,000	5,00,000	10,00,000
Investment	20,00,000	62,50,000	80,00,000

- (i) Using the Operating Profit Margin Percentage as the criterion, which is the most profitable division?
- (ii) Using the rate of return on investment as the criterion, which is the most profitable division?
- (iii) Which of the two measures, do you think, gives the better indication of overall operating performance? Explain your reasoning. 2+2+2=6
- (b) Discuss the benefits of Branding to the Buyers and to the Sellers.

5

(c) Explain the objectives of "Transfer Pricing".

5

#### Answer: 4 (a)

The Return on Investment (ROI), Profit Margin Percentage and Asset Turnover Ratio of the three divisions are as follows:

	Return on Investment	Profit Margin Percentage
Division A	₹2,00,000/₹20,00,000 = 10%	₹2,00,000/₹38,00,000 = 5.26%
Division B	₹5,00,000/₹62,50,000 = <b>8%</b>	₹ 5,00,000/Rs.1,70,00,000 = 2.94%
Division C	₹10,00,000/₹80,00,000 = 12.5%	₹10,00,000/₹2,00,00,000 = 5%

i. Using the profit margin percentage

The most profitable Division is A.

- ii. Using ROI, the most profitable Division is C
- iii. The ROI is a better measure of overall performance because it relates profits to the investments or capital, requires more capital to generate sales than did Division C. Thus its overall profitability is less. Note that Division B has the largest asset turnover ratio. But it generates the smallest amount of net income per Rupee of sales, resulting in the lowest ROI amongst the three divisions.

### Answer: 4 (b)

Branding provides the following benefits to the Buyers and the Sellers:

### To the Buyers:

Helps the buyers identify the product that they like/dislike.

Identify seller

Helps reduce the time needed for purchase

Helps buyers evaluate quality of products especially if unable to judge a product

Helps reduce buyers perceived risk of purchase

Buyers may derive a psychological reward from owning the brand i.e. Rolex or Mercedes.

### To the Sellers:

Differentiate product offering from competitors

Helps segment market by creating tailored images i.e.. Contact Lenses

Brand identifies the companies' products making repeat purchase easier for customers.

Reduces price comparisons

Brand helps firm introduce a new product that carries the name of one or more of its existing products half as much as using a new brand, lower designs, advertising and promotional costs.

### Answer: 4 (c)

### Objectives of Transfer Pricing:

It measures the performances of individual divisions and fixes responsibility.

Ensure that resources are allocated in an optimal manner Promote goal congruence Motivate divisional managers Facilitate the assessment of management performance

Retains divisional autonomy

The transfer price should be objectively determinable

Transfer price should compensate the transferring division and charge the buyer with the value of the functions performed and /or the value of the product exchanged.

#### 5. (a) What are the different Strategic Responses to the Environment?

6

(b) Briefly discuss regarding Michael Porter's "Five Forces Model".

10

#### Answer: 5 (a)

The different Strategic responses /approaches to the environment are as listed below:

### I. Least resistance:

Lew businesses just involves to manage and survive by way of coping and adjusting with their dynamic external environment. These are simple and goals are to be maintained. These are very passive behaviour and are solely guided and supervised by the signals of the external environment.

#### II. <u>Proceed with caution:</u>

It is the next level of strategic response to the environment. Strategists are responsible to take an intelligent interest to adapt with the changing environment. Strategic Managers in the company promptly seek and monitor changes in the environment. Its analysis, impact on their own goals and activities will be translated for assessment in terms of

specific strategies survival, stability and strength. These are regarded as the pervasive complexity and turbulence of the external environmental elements as prescibed with the framework of which they have to function like adaptive organic sub system. It is open to suitable changes in strategies and to changes in business.

#### III. Dynamic Response:

This level is highly sophisticated level In this level, external forces in business are efficiently and partially manageable and controllable by their actions in company. Feed system is highly dynamic and powerful system adopted by the organization. These things not only recognise threats and weakness and are ready to convert into their threats into opportunities in business environment. These are highly conscious and confident of their strengths and weaknesses of the external environment constraints. Dynamic response have to generate a contingent set of alternatives course of action, which are picked up in tune with the changing shape of business environment.

### Answer: 5 (b)

### Michael Porter's "Five Force Model:

Michael Porter's "Five Force Model focuses on five forces, which shape to create competition within an industry. The five Forces are as below:

The risk of new entry by potential competitors

Rivalry among established firms

Bargaining power of buyers

Bargaining power of suppliers

Threat of substitute products

The character, mix and subtleties of compete it vie forces are never the same and shall vary from one industry to another. Five force model is a powerful and widely used tool for systematically diagnosing the principles of competitive pressures in a market and it should be assessing the strength.

### 1. Risk of entry by potential competitors:

Potential competitors are firms, which currently are not competing in an industry but the have the capability to do if they choose. Established firms try to discourage potential competitors from entering the industry, since it would put strain on their continuing to hold on to their share in the market and threaten their generation of profits. Thus high risk of entry by potential competitors represents a threat to the profitability of established firms.

The three main sources of baniers to new entry are:

- Brand loyalty: Significant brand loyalty makes it difficult for new entrants to take market share away from well established firms. Thus it reduces the threat of entry by potential competitors.
- Absolute cost advantage: Absolute cost advantages can be achieved from superior production techniques and arising due to reasons like past experience, patents, etc..
   If established firms have an absolute cost advantage, then again the threat of entry shall decrease.

• Economies of scale are the cost advantages associated with large and established firm's size, sources of large scale economies include cost reductions gained through mass production of a standard output, discount on bulk purchase of raw material inputs. the spreading of fixed costs over a large volume etc.. Large Scale economies of scale gives distinct advantages to established existing trims and a new entrant faces the dilemma of entering on a small scale and suffering a significant cost disadvantages with those existing and established firms.

### 2. Rivalry among established firms:

This is the second of Porter's five competitive forces. It exhibits the extent of rivalry amongst the established firms within the industry. When this competitive force is weak, firms have an opportunity to raise prices to earn greater profits. But if it is strong, established firms have an opportunity to reduce prices to earn fewer profits. It is significant due to price competition, including price wars and may result into intensive rivalry.

### 3. Bargaining Power of buyers:

This is the third of Potter's five competitive forces. Buyers can be influenced as competitive threat when they force down prices of the products and service. It means that when buyer demands a higher quality and better service, the operating costs of the products shall automatically increase. According to Porter, the buyers are more-powerful under the following situations:

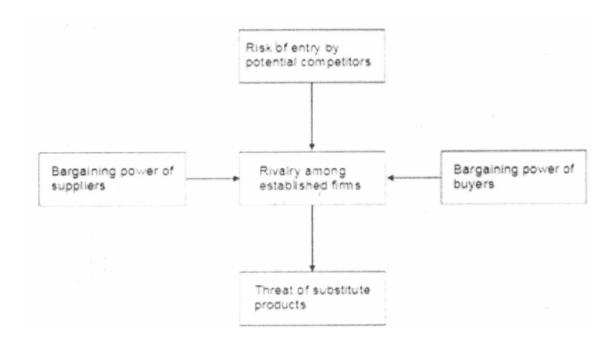
The supply industry may consist of many small firms, whereas the buyers are few in number and are large. These situations allow the buyers to dominate supply firms.

### 4. Bargaining Power of suppliers:

This is the fourth of Porter's five competitive forces. Supplier influence can become a threat when they are capable of forcing up the price that firm must pay for products and service or reduce the quality of goods supplied thereby, reducing the firm's profitability. In other words, weak supplier gives opportunity to firm lo force down the prices and demand higher quality. As with the buyer, the capability of supplier to make demands on an organization depends on power relative to firm.

### 5. The threat of substitute products:

The fifth and final force in the Porter's model is the threat of substitute products-the product of industries that serve identical consumer needs as those of the industry being analyzed, for instance, firms in the coffee industry may compete directly with those in the tea and soft drink industries. In the case of substitute products, if the price of the coffee rises too much relative to that of tea or soft drinks, then coffee drinkers will switch from coffee to those substitutes. The existence of close substitute creates a strong competitive threat, limiting the price of a firm.



- 6. (a) Point out the basic differences between the two terms, viz., Duopoly and Oligopoly. 4+4=8
  - (b) The total revenue from the sale of 'x' units is given by the equation  $R = 100x 2x^2$ . Calculate the point price elasticity of demand, when the marginal revenue is 20?

# Answer: 6 (a) Duopoly:

This is the case where there are only two firms in an industry. Each duopolist can choose his production in such a way as to maximize his income for a given value of output. Each duopolist has no interest in modifying his behaviour as long as the other does not modify his.

If both duopolists attempt to take one another's reactions into account, the problem is no longer predetermined. Duopoly is often characterized by instability. Duopolists eliminate their competitors through price wars or through agreements. Economic efficiency of the firminact analysis on performance by cooperating, a total income greater than the sum of the revenues that each can ensure for himself by non-cooperative behaviour.

### Oligopoly:

In oligopolistic situations, entrepreneurs attempt to avoid price wars which are ruinous for the industry. Being aware of the fact that their rivals can do the same, they refrain from seeking to increase their share of the market through price cuts. As a result, oligopoly can attain a certain stability characterized by: a) the 'price leadership' of a firm, b) the reduction of hidden prices and c) competition in fields other than that of price (like competition in fields other than that of price (like promotion, packaging, etc.)

The lowering of hidden prices can assume various forms. It is contingent upon the customer, upon the size of the order, upon the geographical area and the existence of inferior brands. This policy has the advantage that it precedes adjustments of official prices and in this way contributes to the stability of oligopolists.

Finally, non-price competition is a substitute for price competition. It is much less dangerous because its effects are felt in the long run. So the possibilities of reactions from competition are more limited.

### Answer: 6 (b)

- 7. (a) Does successful growth strategies automatically lead to a boost to profits?
  - (b) State the various causes for Corporate Failure.

### Answer: 7 (a)

Mere growth may not boost profits if the emerging market trends are not adequately addressed. For example, if the market trend is in favour of low carb diets, a growth strategy for a product not conforming to this market expectation will not generate profits. In fact, sales may decline.

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Some growth strategies by acquisition or expansion or diversification may fail to generate profits if the products begin to compete with each other. This was the case with Volkswagen embarked on a burst of growth in the late '90s by acquiring other well- known automobile brands, only to find these began competing against each other as competition intensified. Revenue growth may not also translate into growth in shareholders' value as in the case of multinational media giants like Disney, Warner, etc.

Companies in the global market tend to have lower returns than traditional companies operating in local markets, restricted to a domain or a product.

Competitive advantage occurs through capturing customers, proprietary technology or economies of scale, which are easier in narrow local markets than on a global scale.

Thus, if advantage depends on economies of scale and this requires a producer to operate above a certain level of production-this minimum efficient scale is more likely to be achieved in large-scale markets.

In a restricted market, on the other hand, economies of scale are much less easy to achieve, as they tend to require a much larger percentage of the market. This can be difficult to reach without competing against incumbents. Indeed, they would maintain that many sustainable sources of advantage are based upon locator regional presence, even in industries such as retail, pharmaceuticals and consumer goods, which are ostensibly global. Moreover, more and more of what we purchase is made up of services rather than products and as services tend more often to be provided on a local basis, so strategy and competitive advantage will increasingly depend on a local presence.

#### Answer: 7 (b)

Corporate failure is failure of alignment between the organisation and its environmental realities. Since an organisation generally has the time and opportunity to make adjustments

when a misalignment occurs - through, for example, a turnaround strategy - organisational failure must therefore by definition stem from a failure to successively implement the turnaround. Even in industries that are subject to radical unforeseen shocks, such as the airline industry after 9/11, there were some companies which were able to adjust and others which went out of business because they were not properly positioned strategic performance management in the industry or because their turnaround strategies were ineffective.

### Technological causes:

Traditional methods of doing work have been turned upside down by the development of new technology. If within an industry, there is failure to exploit information technology and new production technology, the firms can face serious problems and ultimately fail.

By using new technology, cost of production can be reduced and if the firm continues to use the old technology and its competitors start using the new technology; this can be detrimental to that firm, leading to corporate failure. Due to high cost of production, the firm will have to sell its products at higher prices than its competitors and this will consequently reduce its sales and the firm will slowly die.

### Working Capital Problems:

Firms also face liquidity problems when they are in financial distress. Poor liquidity becomes apparent through the changes in the working capital of the firm, as they have insufficient funds to manage their day-to-day expenses and meet corporate failure.

### **Economic Distress:**

A turndown in an economy can lead to corporate failures across a number of businesses. The level of activity will be reduced, thus affecting negatively the performance of finns in several industries. This cannot be avoided by businesses.

#### Mismanagement:

Inadequate internal management control or lack of managerial skills and experience is the cause of majority of corporate failures some managers may lack strategic capability that is to recognize strengths, weaknesses, opportunities and threats of a given business environment. These managers tend to take poor decisions and leading the firm towards corporate failure.

### Fraud by Management:

Management fraud is another factor responsible for corporate collapse. Influenced by personal greed, they manipulate financial statements and books of accounts and tamper and falsify business records, thereby fooling the shareholders leading to serious consequences like loss of revenue, damage to the credibility of the company, increased operating expenses and decreased operational efficiency.

#### Financial Distress:

Firms that become financially distressed are found to be under performing relative to the other firms in their industry. Corporate failure is a process rooted in the management defects, resulting in poor decisions- leading to financial deterioration and finally corporate collapse

#### Over-expansion and Diversification:

The dominant CEO is driven by the ultimate need to succeed for their own personal benefits They neglect the objectives set for the firm and work towards their own self-interest. They

want to achieve rapid growth of the firm through acquisition and expansion to increase their status and are not bothered how overcapacity would influence its invest men I and the risks associated with it.

### Poorly structured Board:

Board of Directors are handpicked by the CEO. These directors often tack the necessary competence and may not control the business matters properly. Poorly structured Board is the cause of many corporate failures.

### 8. Write a short note on any four out of the following:

4×4=16

- (a) Leading Indicators of Industrial Sickness
- (b) Asset Liability Management Model
- (c) OLAP
- (d) Six Sigma
- (e) Different types of Benchmarking

### Answer: 8

### (a) Leading Indicators of Industrial Sickness: -

Industrial Sickness can be identified by the following symptoms. These symptoms act as leading indicators of sickness and if immediate remedial actions are not taken, the sickness will grow to the extent that the firm will find its natural death:

- Piling up of inventory
- Continuous reduction in turnover
- Continuous reduction of net profit to sales ratio
- Borrowings with high interest rates.
- Continuous cash losses leading to erosion of tangible net worth.
- The 'Sundry debtors' and the 'sundry creditors' keep growing and reaching a high level
- frequent bank borrowings
- High employee turnover ratio
- Window dressing of books of accounts

### (b) Asset Liability Management Model (ALM):

Any financial planning strategy should be such that the mix of asset classes in a portfolio is able to grow and satisfy future goals with the best possible returns. This is the crux of Asset Liability Management Model. ALM applications with the aid of stochastic programming conceptualize the problem of creating a portfolio by allocating a set of assets. The investor needs to decide the three factors, namely:

- \* Amount of assets to buy
- \* Amount of assets to sell
- \* Amount of assets to hold.

The indices are defined and the problem parameters and decision variables are set out so that the stochastic programming model can develop a solution.

ALM model can also be conceptualized as a method to compute the matching of assets and liabilities to generate a cautbus investment portfolio. The purpose of this model is to optimize risk-adjusted returns to the shareholders over a long-run.

The ALM model can also be employed to manage liquidity risk. Assets and liabilities can be arranged according to their maturity pattern in a time frame. This model can also be

applied to exchange rate risk management, financial institutions match their assets and liabilities at a particular exchange rate.

### (c) OLAP:

OLAP stands for "On-Line Analytical Processing". OLAP is a category of software technology that enables analysts, managers and executives to gain insight into data through fast, consistent, interactive access to a wide variety of possible views of information that has been transformed from raw data to reflect the real dimensionality of the enterprise as understood by the user.

OLAP functionality is characterized by dynamic multidimensional analysis of consolidated enterprise data supporting end user analytical and navigational activities including:

- Calculations and modeling applied across dimensions
- Trend analysis over sequential time periods
- Slicing sub-sets for on-screen viewing
- Drill-down to deeper levels of consolidation
- Reach-through to underlying detail data
- Rotation to new dimensional comparisons in the viewing area

OLAP is implemented in a multi-user client/server mode and offers consistently rapid response to queries, regardless of database size and complexity. OLAF helps the user synthesize enterprise information through comparative, personalized viewing, as well as through analysis of historical and projected data in various' what-if data model scenarios. This is achieved through the use of an OLAP server.

(d) Six Sigma at many firms simply means a measure of quality that strives for near perfection. It is a disciplined, data driven approach and methodology for eliminating defects (driving toward six standard deviations between the mean and the nearest specification limit) in any process-from manufacturing to transactional and from product to service.

The statistical representation of Six Sigma describes quantitatively how a process is performing To achieve Six Sigma, process must not produce more than 3.4 defects per million opportunities. A Six Sigma defect is defined as anything outside of customer specifications. A Six Sigma opportunity is then the total quantity of chances for a defect.

The fundamental objective of the Six Sigma methodology is the implementation of a measurement based strategy that focuses on process improvement and variation reduction through the application of Six Sigma improvement projects.

### (e) Different types of Benchmarking:

The different types of Benchmarking are:

Product Benchmarking (Reverse engineering)

Competitive Benchmarking

**Process Benchmarking** 

Internal Benchmarking

Strategic Benchmarking

Global Benchmarking

Functional Benchmarking Generic Benchmarking

- (i) Product Benchmarking (Reverse Engineering): is an age old practice of product oriented reverse engineering. Every organization buys its rival's products and tears down to find out how the features and performances etc., compare with its products. This could be the styling point for improvement.
- (ii) Competitive Benchmarking: This has moved beyond product-oriented comparisons to include comparisons of process with those of competitors In this type, the process studied max include marketing, finance, HR. R&D etc..
- (iii) Process Benchmarking: is the activity of measuring discrete performance and functionality against organization through performance in excellent analogous business process e.g. for supply chain management.
- (iv) Internal Benchmarking: is an application of process benchmarking, within an organization by comparing the performance of similar business units or business process.
- (v) Strategic Benchmarking: differs from operational benchmarking in its scope. It helps to develop a vision of the changed organizations. It will develop core competencies that with help sustained competitive advantage.
- (vi) Global Benchmarking: is an extension of Strategic Benchmarking to include benchmarking partners on a global scale. E.g. Ford of USA benchmarked its payable functions with that of Mazda in Japan and found to its astonishment that the entire function was managed by 5 persons as against 500 in Ford.
- (vii) Functional Benchmarking An application of process benchmarking that compares a particular business function at two or more organizations.
- (viii) Generic Benchmarking: An application of functional process benchmarking that compares a particular business function at two or more organizations, selected without regard to their industries.