PAPER – 15: BUSINESS STRATEGY AND STRATEGIC COST MANAGEMENT

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL C	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence
	SYNTHESIS How you are expected to utilize the information gathered to reach an optimum conclusion by a process of reasoning	Discuss	Examine in detail by argument
		Interpret	Translate into intelligible or familiar terms
		Decide	To solve or conclude
	EVALUATION How you are expected to use your learning to evaluate, make decisions or recommendations	Advise	Counsel, inform or notify
		Evaluate	Appraise or asses the value of
		Recommend	Propose a course of action

Paper 15 - Business Strategy and Strategic Cost Management

Full Marks: 100 **Time allowed: 3 hours**

This paper contains 4 questions. All questions are compulsory, subject to instruction provided against each questions. All workings must form part of your answer. Assumptions, if any, must be clearly indicated.

1. **Read the case and answer the following questions**

JET Airways (JA) Attempted Acquisition of Air Sahara (AS)

When AS announced that it was exploring opportunities for private placement of its equity, airline companies such as Spice Jet showed an interest in acquiring a stake in the company. At this time, however, JA did not express any interest in acquiring a stake in AS. Instead, Kingfisher Airlines, an airline owned by Vijay Mallya, chairman of the UB group, was considered a serious contender for AS. Mallya intended to speed up his growth plan in the aviation industry and believed that a merger with AS would help him achieve this objective. He negotiated with the company for a while but ultimately pulled out saying that the price set for AS was too high.

By this time, price had become the main concern for most of the potential acquirers. Analysts too opined that a valuation of around US$1 billion for an airline that was in debt was a bit too much.

Some industry observers believed that JA had overvalued AS and hence overpaid for acquiring the company. According to analysts, AS was not a profitable airline and hence the price paid was more than what the airline was actually worth. Alok Dalal, research analyst, India Infoline, commented, "The deal is favorable to Jet in terms of operational efficiencies but it is not so in terms of financials, as Jet has paid a much higher price." He added, "Sahara's financials are not as strong as compared to Jet." Defending the deal, Goyal said, "We've done serious valuation after studying similar deals done abroad. We've analyzed what happened when TWA sold to American Airlines or when Pan Am sold to United Airlines. We know what we are doing." It was also believed that although JA had gained certain synergies from the acquisition, it also had the difficult task of turning around the loss-making AS. Analysts expressed concern that JA would concentrate on making AS profitable at the cost of its own performance.

After JA's announcement of its decision to acquire AS, a member of the Rajya Sabha (the Upper House of the Indian Parliament) complained that JA would create a monopoly in the domestic airline industry by controlling almost half the market.

This would not be in the best interests of consumers and investors, the member said. The deal between JA and AS also faced opposition from airlines like Kingfisher Airlines and GoAir.

In fact, four airlines, Kingfisher Airlines, GoAir, Air Deccan, and IndiGo formed an alliance called Indian Airline Operators' Association (IAOA) before the formal announcement of the JA and AS deal was made.

The purpose of the alliance was to appeal to the government for equitable allotment of parking slots and prime-time departure slots. Later, however, Air Deccan backed out of the alliance.

Capt. Gopinath, CEO of Air Deccan, said, "I am not part of (Mallya's) alliance. I don't want to be a part of an airline group to take on Jet. What I am not looking at is an association which includes only a segment of the industry, as that would not represent the larger interest of the industry. "

Analysts opined that though JA had acquired a dominant position in the Indian airline industry, it would need to work hard to sustain this position in the long run. This was because several new private carriers were expected to enter the industry in the next few years.

Observed Alok Sharma, vice president, AS, "Traffic is booming, but as we see it, capacity growth will overtake traffic growth in the next few years. Last year, traffic grew by 20 percent to 25 percent, but load factors of full service carriers were still 70 percent or

so."Also, IA and AI were taking steps to improve their operations. IA, which had been making losses since 2000-01, had become profitable in 2004. The airline also undertook a major re-branding exercise in December 2005 with a view to enhancing its image. IA and AI were also expected to go in for Initial Public Offerings by mid-2006. Reportedly, the GoI intended to sell around 20-25 percent of the stakes in these companies.

Required:

(i) Discuss the opinions of analysts expressed after Jet Airways acquired Air Sahara.

(ii) Describe the steps taken by major Airlines of India to improve the operations.

(iii) Discuss the challenge faced by the company after announcement of acquiring the Air Sahara.

(iv) Explain the strategic role of the Management Accountant in reference to merger and acquisition. [5+4+5+6]

Answer:

(i) Some industry observers believed that JA had overvalued AS and hence overpaid for acquiring the company. According to analysts, AS was not a profitable airline and hence the price paid was more than what the airline was actually worth. Alok Dalal, research analyst, India Infoline, commented, "The deal is favorable to Jet in terms of operational efficiencies but it is not so in terms of financials, as Jet has paid a much higher price." He added, "Sahara's financials are not as strong as compared to Jet." Analysts expressed concern that JA would concentrate on making AS profitable at the cost of its own performance.

(ii) Observed Alok Sharma, vice president, AS, "Traffic is booming, but as we see it, capacity growth will overtake traffic growth in the next few years. Last year, traffic grew by 20 percent to 25 percent, but load factors of full service carriers were still 70 percent or so."Also, IA and AI were taking steps to improve their operations. IA, which had been making losses since 2000-01, had become profitable in 2004. The airline also undertook a major re-branding exercise in December 2005 with a view to enhancing its image. IA and AI were also expected to go in for Initial Public Offerings by mid-2006. Reportedly, the GoI intended to sell around 20-25 percent of the stakes in these companies.

(iii) After JA's announcement of its decision to acquire AS, a member of the Rajya Sabha (the Upper House of the Indian Parliament) complained that JA would create a monopoly in the domestic airline industry by controlling almost half the market.

This would not be in the best interests of consumers and investors, the member said. The deal between JA and AS also faced opposition from airlines like Kingfisher Airlines and GoAir.

In fact, four airlines, Kingfisher Airlines, GoAir, Air Deccan, and IndiGo formed an alliance called Indian Airline Operators' Association (IAOA) before the formal announcement of the JA and AS deal was made.

The purpose of the alliance was to appeal to the government for equitable allotment of parking slots and prime-time departure slots.

(iv) The approach of many businesses in considering Mergers and Acquisitions will be a more strategic and reasoned procedure with special consideration of the ethical consequences on the many parties affected. The management accountant is in a position to contribute his expertise in the analysis of acquisition strategy. The need to determine whether acquisition or internal growth is more efficient in reaching long term goals requires accounting expertise and studied analysis of each company's situation. In certain instances, synergies may be obtained or developed which may result in creating an even more advantageous position for the acquiring company. The management accountant should be poised to provide insight into the determination of an appropriate strategy during the various stages of analysis from the defining of objectives to the integration of the companies, if a merger is consummated.

Mergers and acquisitions received a great deal of attention in the 1980's when mega deals such as the acquisition of RJR Nabisco by Kohlbert Kravis Roberts & Company sent shockwaves through the corporate world. While the great majority of activity prior to the 1990's took place within national boundaries, the last decade has seen a sharp increase in the rate of global merger activity. The international complexities require a more sophisticated analysis involving foreign exchange rates and social, political and economic environments.

An important aspect of merger and acquisition strategy focuses on strengths and goals before taking actions. Managers and management accountants, as partners in the strategic planning process, must take a cautious view of potential activity, to observe a basic compatibility between the two companies, to determine whether the product mix makes sense, and to determine if the companies' core beliefs are the same. While quantitative factors provide the identifiable aspects that make the merger attractive, they do not portray the whole picture. Many qualitative factors must also be considered before the real value of a company can be estimated.

Whatever the rationale or goals of the combining businesses, the success or failure of the merger is based largely upon financial considerations. Because success or failure is ultimately measured in value, the target company's financial position must be measured carefully so as to quantify as many expected benefits and costs as possible. This process provides the framework wherein a management accountant can make an important contribution. The Management Accountant can utilize his or her expertise to analyze financial data relevant to the acquisition process and provide an informed opinion of valuation with due consideration to all of the qualitative factors and differing parties affected by the potential merger.

2. Answer any two questions from (a), (b) and (c): [2 x 15 =30]

(a)

(i) Define Strategic Drift. Describe how an organization prevents strategic drift?

(ii) Discuss Contingency Planning and its seven steps process. [(1+5)+(2+7)]

Answer:

(i) Strategic drift is a management concept in which an organizations' response to the changing environment is often within the parameters of the organizations culture. Culture is traditionally seen as opposition to change, which stifles innovation and results in a momentum of strategy that can lead to strategic drift.

A subtle and unnecessary shift from an intended course or direction to another one –that is usually undesirable, at least in a long-term perspective.

- First, start with creating a culture that is not only openly tolerant of feedback (both positive and negative) but welcomes it.
- Make sure the organization can both
  a. Embrace change when necessary, and
  b. NOT hesitate to question it when is seems unnecessary.
- Clarify C-suite leadership responsibilities and execute within a formal senior decision-making model. Many unwanted surprises are nothing more than tactical or operational challenges that should be handled within individual business functions and cross-functional leadership team.
- Senior executives who align their individual ROI with the long-term success of the organization will be able to quickly identify the nature of the incoming challenge as well as create contingencies to combat it when and if it occurs. This way, the organization continues along its intended direction without unnecessarily deviating.
- Finally, the best way to combat strategic drift is to have a Grand Strategy. A comprehensive set of corporate strategies that are designed to be durable and flexible, tailored to the strengths of the senior decision-makers and organization.

(ii) Contingency Planning

Planning is made on the basis of certain assumptions and conditions. If the conditions change drastically, the selected plans may have to be discarded altogether. The business firms are exposed to continuous changing economic environmental conditions. Therefore, a business organization should be well prepared to deal with contingencies i.e. unforeseen and other critical developments. A contingency plan is a plan to cope with such unforeseen consequences which mark major deviations from the strategic planning process. Such contingency plans are formulated in advance to take care of unknown events and unexpected challenges. They make the future through their proactive planning and advanced preparation. The advantage of contingency planning is that when external opportunities occur contingency plans could allow an organization to capitalize on them quickly.

Steps in Contingency Planning

Robert Linnemam and Rajan Chandran have suggested that a seven step process as follows:

Step 1 - Identify the beneficial and unfavourable events that could possibly derail the strategy or strategies.

Step 2 - Specify trigger points. Calculate about when contingent events are likely to occur.

Step 3 - Assess the impact of each contingent event. Estimate the potential benefit or harm of each contingent event.

Step 4 - Develop contingency plans. Be sure that contingency plans are compatible with current strategy and are economically feasible.

Step 5 - Assess the counter impact of each contingency plan. That is, estimate how much each contingency plan will capitalize on or cancel out its associated contingent event. Doing this will quantify the potential value of each contingency plan.

Step 6 - Determine early warning signals for key contingency event. Monitor the early warning signals.

Step 7 - For contingent event with reliable early warning signals, develop advance action plans to take advantage of the available lead time.

(b)

(i) Explain the objectives of SWOT Analysis and its Advantages and Criticisms.

(ii) "Many organizations in order to achieve quick growth use strategies such as mergers and acquisitions."- Justify. Also discuss various types of mergers. [(2+3+2)+(3+5)]

Answer:

(i) The objectives of SWOT Analysis are:

- To identify the shortcomings in the company's present skills and resources.
- To exploit the strengths of the company to achieve its objectives.
- To focus on profit-making opportunities in the business environment and for identifying threats.
- To highlight areas within the company, which are strong and which might be exploited more fully and weaknesses, where some defensive planning might be required to prevent the company from downfall.

Advantages

- It provides a logical framework to be used for systematic discussion of various issues bearing on the business situation, alternative strategies and finally the choice of strategy.
- Another application of SWOT analysis is the structured approach whereby key external threats and opportunities may be systematically compared with internal strengths and weakness.
- A business may have several opportunities but also face some serious threats in the environment. It may have likewise several weaknesses along with one or two major strength. In such situations, the SWOT analysis guides the strategist to visualise the

overall position of the firm, and helps to identify the major purpose of the grand strategy being considered.

Criticisms

- It is subjective in nature and varying from person to person.
- It places verities problem in terms of S.W.O.T. without stating solutions.
- There is no method to increase the accuracy of measurement.
- There is no method of verifying the information.

(ii) Many organizations in order to achieve quick growth, expand or diversify use strategies such as mergers and acquisitions. This also helps in deploying surplus funds.

Merger and Acquisition Strategy

Merger and acquisition in simple words are defined as a process of combining two or more organizations together. There is a thin line of difference between the two terms but the impact of combination is completely different in both the cases.

Some organizations prefer to grow through mergers. Merger is considered to be a process when two or more organizations join together to expand their business operations. In such a case the deal gets finalized on friendly terms. Owners of pre-merged entities have right over the profits of new entity. In a merger two organizations combine to increase their strength and financial gains.

When one organization takes over the other organization and controls all its business operations, it is known as acquisition. In the process of acquisition, one financially strong organization overpowers the weaker one. Acquisitions often happen during recession in economy or during declining profit margins. In this process, one that is financially stronger and bigger establishes it power. The combined operations then run under the name of the powerful entity. A deal in case of an acquisition is often done in an unfriendly manner, it is more or less a forced association where the powerful organization takes over a weaker entity.

Types of Mergers

There are three types of Merger: - 1.Horizontal Merger, 2.Vertical Merger and 3. Conglomerate Merger

- **Horizontal merger:** Horizontal mergers are combinations of firms engaged in the same industry. It is a merger with a direct competitor. The principal objective behind this type of mergers is to achieve economies of scale in the production process by shedding duplication of installations and functions, widening the line of products, decrease in working capital and fixed assets investment, getting rid of competition and so on. For example, formation of Brook Bond Lipton India Ltd. through the merger of Lipton India and Brook Bond.
- **Vertical merger:** It is a merger of two organizations that are operating in the same industry but at different stages of production or distribution system. This often leads to increased synergies with the merging firms. If an organization takes over its supplier/producers of raw material, then it leads to backward integration. On the other hand, forward integration happens when an organization decides to take over its buyer organizations or distribution channels. Vertical merger results in operating and financial economies. Vertical mergers help to create an advantageous position by restricting the supply of inputs or by providing them at a higher cost to other players.
- **Conglomerate merger:** Conglomerate mergers are the combination of organizations that are unrelated to each other. There are no linkages with respect to customer groups, customer functions and technologies being used. There are no important common factors between the organizations in production, marketing, research and development and technology. In practice, however, there is some degree of overlap in one or more of these factors.

  Conglomerate mergers have been sub-divided into:
  - Financial Conglomerates
  - Managerial Conglomerates

- Concentric Companies

(c)
(i) Distinguish between Vertical Integration and Horizontal Integration.
(ii) Discuss the limitations of Value Chain Analysis.
(iii) Enumerate the Important characteristics of Corporate level strategy.
(iv) "The process of Strategy formulation basically involves six main steps." – Explain these six steps. **[3+3+3+6]**

Answer:

(i) In vertically integrated diversification, firms opt to engage in businesses that are related to their existing businesses. The firm remains vertically within the same process. The firm remains vertically within the same process. Sequence moves forward or backward in the chain and enters specific product/ process steps with the intention of making them into new business for the firm.

On the other hand, horizontal Integrated Diversification is the acquisition of one or more similar business operating at the same stage of the production – marketing chain that is going into complementary products, by-products or taking over competitors' businesses.

(ii) Limitations of Value Chain Analysis

The important drawbacks of value chain analysis are as follows:

- Finding the costs, revenues and assets for each value chain activity poses/gives rise to serious difficulties. There is no scientific approach and much depends upon trial and error and experimentation methods.
- Value chain analysis is not easily understandable to all employees and hence may face resistance from employees as well as managers.
- Internal data on costs, revenues and assets used for value chain analysis are derived from financial information of a single period. For long-term strategic decision-making changes in cost structures, market prices and capital investments etc. may not be readily available.
- Isolating cost drivers for each value creating activity, identifying value chain linkage across activities and computing supplier and customer profit margins present serious challenges.
- Identifying stages in an industry's value chain are limited by the ability to locate at least one firm that particulars in a specific stage.
- Value chain analysis is not an exact science. It is more an 'art' than preparing precise accounting reports. Certain judgment and factors of analysis are purely subjective and differ from person to person.

(iii) Important characteristics of corporate level strategy

- The corporate level strategy is formulated by the top management of the organization.
- It is formulated on the basis of a clear and collective point of view about the future.
- The corporate level strategy defines the overall direction of the organization and the broad boundaries based on which the business unit strategy and functional strategy are formulated.
- It is formulated on the basis of an analysis of available resources on the one hand and environmental opportunities on the other.
- The corporate level strategy deals with decision relating to the two-way flow of resources and information between corporate level and product/service lines and businesses. This is done through a coordination mechanism formulated by the top management with inputs from top management of SBUs.
- It is applicable for a long period of time.

(iv) The process of strategy formulation basically involves six main steps. Though these steps do not follow a rigid chronological order, however they are very rational and can be easily followed in this order.

- **Setting Organizations' objectives -** The key component of any strategy statement is to set the long-term objectives of the organization. It is known that strategy is generally a medium for realization of organizational objectives. Objectives stress the state of being there whereas Strategy stresses upon the process of reaching there. Strategy includes both the fixation of objectives as well the medium to be used to realize those objectives. Thus, strategy is a wider term which believes in the manner of deployment of resources so as to achieve the objectives.
  While fixing the organizational objectives, it is essential that the factors which influence the selection of objectives must be analyzed before the selection of objectives. Once the objectives and the factors influencing strategic decisions have been determined, it is easy to take strategic decisions.
- **Evaluating the Organizational Environment -** The next step is to evaluate the general economic and industrial environment in which the organization operates. This includes a review of the organizations competitive position. It is essential to conduct a qualitative and quantitative review of an organizations existing product line. The purpose of such a review is to make sure that the factors important for competitive success in the market can be discovered so that the management can identify their own strengths and weaknesses as well as their competitors' strengths and weaknesses.
  After identifying its strengths and weaknesses, an organization must keep a track of competitors' moves and actions so as to discover probable opportunities of threats to its market or supply sources.
- **Setting Quantitative Targets -** In this step, an organization must practically fix the quantitative target values for some of the organizational objectives. The idea behind this is to compare with long term customers, so as to evaluate the contribution that might be made by various product zones or operating departments.
- **Aiming in context with the divisional plans -** In this step, the contributions made by each department or division or product category within the organization is identified and accordingly strategic planning is done for each sub-unit. This requires a careful analysis of macroeconomic trends.
- **Performance Analysis -** Performance analysis includes discovering and analyzing the gap between the planned or desired performance. A critical evaluation of the organizations past performance, present condition and the desired future conditions must be done by the organization. This critical evaluation identifies the degree of gap that persists between the actual reality and the long-term aspirations of the organization. An attempt is made by the organization to estimate its probable future condition if the current trends persist.
- **Choice of Strategy -** This is the ultimate step in Strategy Formulation. The best course of action is actually chosen after considering organizational goals, organizational strengths, potential and limitations as well as the external opportunities.

3. Read the case and answer the following questions.

Motorola manufactures wireless telephones. Motorola is deciding whether to implement a JIT production system, which would require annual tooling costs of ₹15,00,000. Motorola estimates that the following annual benefits would arise from JIT production:

- **Average inventory would decline by ₹ 70,00,000, from ₹ 90,00,000 to ₹ 20,00,000.**
- **Insurance, space, materials-handling, and setup costs, which currently total ₹ 20,00,000, would decline by 30%.**
- **The emphasis on quality inherent in JIT systems would reduce rework costs by 20%. Motorola currently incurs ₹ 35,00,000 on rework.**
- **Better quality would enable Motorola to raise the selling prices of its products by ₹ 30 per unit. Motorola sells 30,000 units each year.**

Motorola's required rate of return on inventory investment is 12% per year.

(i) Calculate the net benefit or cost to the Motorola from implementing a JIT production system.
(ii) What other nonfinancial and qualitative factors should Motorola consider before deciding whether it should implement a JIT system?
(iii) Suppose Motorola implements JIT production, (I) Give examples of performance measures Motorola could use to evaluate and control JIT production, (II) What is the benefit to Motorola of implementing an enterprise resource planning (ERP) system?

[5+6+(5+4)]

Answer:

(i) Annual Relevant Costs of Current Production System and JIT Production System for Motorola:

Relevant Items	Relevant Costs under Current Production System	Relevant costs under JIT Production system
Annual tooling costs	-	₹15,00,000
Required return on investment:		
12% per year × ₹.90,00,000 of average inventory per year	₹10,80,000	
12% per year × ₹20,00,000 of average inventory per year		2,40,000
Insurance, space, materials handling, and setup costs	20,00,000	14,00,000 [a]
Rework costs	35,00,000	28,00,000[b]
Incremental revenues from higher selling prices	-	(9,00,000)[c]
Total net incremental costs	₹65,80,000	₹50,40,000

Annual difference in favour of JIT production ₹15,40,000

[a] ₹20,00,000 (1 – 0.30) = ₹14,00,000
[b] ₹35,00,000 (1 – 0.20) = ₹28,00,000
[c] ₹30 × 30,000 units = ₹9,00,000

The annual net benefit of ₹15,40,000 to Motorola of implementing a JIT production system.

(ii) Other nonfinancial and qualitative factors that Motorola should consider in deciding whether it should implement a JIT system include:

- The possibility of developing and implementing a detailed system for integrating the sequential operations of the manufacturing process. Direct materials must arrive when needed for each sub assembly so that the production process functions smoothly.
- The ability to design products that use standardized parts and reduce manufacturing time.
- The ease of obtaining reliable vendors who can deliver quality direct materials on time with minimum lead time.
- Willingness of suppliers to deliver smaller and more frequent orders.
- The confidence of being able to deliver quality products on time. Failure to do so would result in customer dissatisfaction.
- The skill levels of workers to perform multiple tasks such as minor repairs, maintenance, quality testing and inspection.

(iii)

(I) Personal observation by production line workers and managers is more effective in JIT plants than in traditional plants. A JIT plant's production process layout is streamlined. Operations are not obscured by piles of inventory or rework. As a result, such plants are easier to evaluate by personal observation than cluttered plants where the flow of production is not logically laid out.
Besides personal observation, nonfinancial performance measures are the dominant methods of control. Nonfinancial performance measures provide most timely and easy to understand measures of plant performance. Examples of nonfinancial performance measures of time, inventory, and quality include:

- Manufacturing lead time
- Units produced per hour
- Machine setup time ÷ manufacturing time
- Number of defective units ÷ number of units completed

In addition to personal observation and nonfinancial performance measures, financial performance measures are also used. Examples of financial performance measures include:

- Cost of rework
- Ordering costs
- Stock out costs
- Inventory turnover

(II) The success of a JIT system depends on the speed of information flows from customers to manufacturers to suppliers. The Enterprise Resource Planning (ERP) system has a single database, and gives lower-level managers, workers, customers, and suppliers access to operating information. This benefit, accompanied by tight coordination across business functions, enables the ERP system to rapidly transmit information in response to changes in supply and demand so that manufacturing and distribution plans may be revised accordingly.

4. Answer any two questions from (a), (b) and (c): [2×15=30 marks]

(a)

(i) A company has just completed the manufacture of 40 units of a new product. The manufacturing costs are –

Direct materials	**2,00,000**
Direct Labour : 8000 hours at ₹ 20 per hour	**1,60,000**
Variable Overheads	**80,000**
Special Tools (re-usable)	**10,000**
Fixed Overhead apportioned	**1,00,000**
Total	**5,50,000**

The Company's policy is to add a profit of 12% on Selling Price.

The Company received another order for 120 units of this product for which the Company quoted, based on its policy on absorption cost basis, a price of ₹ 15,625 per unit. The Customer struck the order to ₹ 11,000 per unit. The company is short of work and so is keen to take up more orders but it is reluctant to accept this order price because it is against the policy to accept any price before its cost. The Company experiences a Learning Curve of 90%.

Compute the gain or loss arising from acceptance of the order or ₹ 11,000 p.u. and advise the Company suitably. [5+1]

Answer:

1. Computation of selling price of First Order for 40 units.

(a) Total Costs (as given above)	₹ 5,50,000
(b) Number of units	40 units
(c) Average Cost per unit = (a ÷ b)	₹ 13,750
(d) Since Profit is 12% on Price, it is 12/88 on Cost of ₹ 13,750	₹ 1,875
(e) Price Quoted (Cost + Profit) (c + d)	₹ 15,625

2. Computation of Time required for 120 units

No. of units	Time Required Per Unit	Total time required	Cumulative Time
40	8,000 hours ÷ 40 units = 200 hours	(given) 8,000 hours	8,000 hours
80	200 × 90% = 180 hours	80 units × 180 hours pu	14,400 hours
160	180 × 90% = 162 hours	160 units × 162 hours pu	25,920 hours

3. Cost Sheet for order of 120 units

Particulars	Computation	₹
Direct Materials	₹ 2,00,000 ÷ 40 = ₹ 5,000 × 120 units	6,00,000
Direct Labour	17,920 hours × ₹ 20 per hour	3,58,400
Variable Overheads	17,920 hours × ₹ 10 per hour	1,79,200
Special Tools (Re-usable)	Hence, relevant cost is Nil	Nil
Fixed Overheads	Idle Capacity, hence Not Relevant	Nil
Total Cost		11,37,600
Cost per unit	₹ 11,37,600 ÷ 120	9,480
Price offered		11,000
Hence, Profit per unit		1,520

Decision: total Profit from 120 units ₹ 1,520 × 120 units = ₹ 1,82,400. Hence, the order should be accepted.

(ii) AB Cycles Ltd has 2 divisions, A and B which manufacture bicycle. Division A produces the bicycle frame and Division B assembles rest of the bicycle on the frame. There is a market for both the sub – assembly and the final product. Each division has been treated as a profit center. The Transfer Price for the sub-assembly has been set at the long run average market price. The following data are available to each division –

Estimate Selling Price for Final Product	**₹ 3,000 p.u.**
Long-run Average Market Price for sub-assembly	**₹ 2,000 p.u.**
Incremental Costs of completion sub-assembly in Division B	**₹ 1,500 p.u.**
Incremental Costs in Division A	**₹ 1,200 p.u.**

Required:

1. **If Division A's maximum capacity is 1,000 units per month and sales to the intermediate market are now 800 units. Should 200 units be transferred to Division B at the long run average price basis?**
2. **Calculate the Transfer Price, if the Manager of Division B should be kept motivated?**
3. **It outside market increases to 1,000 units, should Division A continue to transfer 200 units to Division B or sell entire product to outside market? Discuss. [2+2+3]**

Answer:

1. When External Sales = 800 units

I. Since External Sales of Sub-Assembly by Division A is only 800 units, there is a spare capacity of 200 units, which does not involve any Opportunity Costs.

II. Cost of Final Product from Company angle = Variable Costs of A + Variable Costs of B = ₹ 1,200 + ₹ 1,500 = ₹ 2,700 p.u. Since Final Selling Price (₹ 3,000) is above cost (₹ 2,700), there is a Net Contribution of ₹ 300 p.u. of the Final product. Hence, 200 units may be transferred by Division A.

2. Range of Transfer Prices will be as under –
   I. Minimum TP (from Divn A viewpoint) = Variable Cost only = ₹ 1,200.

   II. Maximum TP (from Divn B viewpoint) = Least of – (i) Market Price of Sub-Assembly [or] (ii) Ability to pay = ₹ 2,000 [or] (₹ 3,000 – ₹ 1,500) = ₹ 1,500.

   III. A transfer Price in the range of ₹ 1,200 to ₹ 1,500 will be agreeable to both Managers.

   IV. To keep the Manager of Division B motivated, the profit earned ₹ 300 per unit may be shared equally between the two Divisions. Hence, the appropriate Transfer Price for motivating Division B may be Variable Cost of Division A + 50% Share of Profit t6o be given to Division A = ₹ 1,200 + ₹ 150 = ₹ 1,350.

3. When External Sales = 1,000 unit.
   I. If External Sales by Division A increases to 1,000 units, Internal Transfer would involve Opportunity Costs. Hence, Relevant Cost of Internal Transfer = Variable Costs ₹ 1,200 + Opportunity Costs ₹ 800 (being Contribution foregone on External Sales) = ₹ 2,000.

   II. Cost of Final Product from Company angle = Relevant Costs of A + Relevant Costs of B = ₹ 2,000 + ₹ 1,500 = ₹ 3,500 p.u. Since Final Selling Price (₹ 3,000) is below Relevant Cost (₹ 3,500), there is a Net Loss of ₹ 500 p.u. of the Final Product. Hence, Internal Transfers are not worthwhile. Division A has to sell the entire output of 1,000 units to the outside market only.

(iii) Why 'Lean Accounting' is needed? [2]

Answer:

'Lean Accounting' provides accurate, timely, and understandable information that can be used by managers, sales people, operations leaders, accountants, lean improvement teams and other policy makers. The information gives clear insight into the company's performance: both operational and financial. It measures the right things for a company that wants to drive forward with lean transformation.

(b)

(i) The Marketing Director of a Company engaged in the manufacture and sales of a range of products wants to increase the market share and for the purpose proposes to spend ₹5,00,000 on advertisement campaign.

Two alternatives sales budget have been put forward as under:

Products	A	B	C	D
Budget: (Units'000)				
A:Before advertisement	**360**	**560**	**520**	**300**
B:After advertisement	**380**	**590**	**545**	**315**
The selling prices on variable cost data are as under:				
Selling price/Units	**₹20**	**₹24**	**₹50**	**₹42**
Direct materials/Unit	**₹8**	**₹11**	**₹25**	**₹21**
Direct Labour/Units	**₹3**	**₹3**	**₹6**	**₹5**
Variable Overheads/Unit	**₹2**	**₹2**	**₹4**	**₹3**

Direct labour hour rate is ₹5 per hour. Fixed overheads amount to ₹51,40,000 per annum. The production capacity is limited to 15,00,000 direct labour hour for the ensuring year. A and C however, could be bought on subcontract basis at ₹17 and ₹40 per unit respectively for sale.

Required:

Present a statement showing profitability of the proposed scheme and state weather the investment in the advertisement campaign is worthwhile. [8+4]

Answer:

Calculation of contribution per unit

Particulars	A	B	C	D
Selling Price **(i)**	20	24	50	42
Variable cost:				
Direct material	8	11	25	21
Direct Labour	3	3	6	5
Variable overhead	2	2	4	3
Total Cost (ii)	13	16	35	29
Contribution**(i)-(ii)**	7	8	15	13
Direct Labour Hours p.u.	(3/5) =0.6	(3/5)= 0.6	(6/5)= 1.2	(5/5)= 1.0
Contribution per Direct Labour hr.	(7/0.6) =11.67	(8/0.6) =13.33	(15/1.2) =12.50	(13/1) =13.0
Rank	IV	I	III	II

Calculation of Direct Labour hours required:

As per Budget A (Before advertisement)		**(Hours)**
A	3,60,000 units x 0.6 hr.	=2,16,000
B	5,60,000 units x 0.6 hr.	=3,36,000
C	5,20,000 units x 1.2 hr.	=6,24,000
D	3,00,000 units x 1.0 hr.	=3,00,000
Total		14,76,000
As per Budget B (After advertisement)		**(Hours)**
A	3,80,000 units x 0.6 hr.	=2,28,000
B	5,90,000 units x 0.6 hrs.	=3,54,000
C	5,45,000 units x 1.2 hrs.	=6,54,000
D	3,15,000 units x 1.0 hrs.	3,15,000
Total		15,51,000

Budget B required 51,000 Direct labour hours in excess of 100% capacity of 15,00,000 Direct Labour hours. Therefore product A or C can be purchased from outside to meet the excess demand.

Profitability statement (Before advertisement)

Particulars	A	B	C	D	Total
Units	3,60,000	5,60,000	5,20,000	3,00,000	
Contribution p.u.	7	8	15	13	
Total Contribution	25,20,000	44,80,000	78,00,000	39,00,000	1,87,00,000
Less: Fixed cost profit					51,40,000
					1,35,60,000

Profitability statement if product C is bought on sub-contract basis for balance hours

Particulars	A	B	D	C	C (Bought out)	Total
Units	3,80,000	5,90,000	3,15,000	5,02,500	42,500	--------
Direct Labour hrs. p.u.	0.6	0.6	1.0	1.2	-------	--------
Total D.L. Hours	2,28,000	3,54,000	3,15,000	6,03,000	--------	15,00,000

Contribution p.u.	7	8	13	15	10	-------
Total Contribution	26,60,000	47,20,000	40,95,000	75,37,500	4,25,000	1,94,37,500
Less: Fixed cost						51,40,000
Profit						1,42,97,500

Profitability statement if product A is bought on sub-contract basis for balance hours

Particulars	B	C	D	A	A (bought out)	Total
Units	5,90,000	5,45,000	3,15,000	2,95,000	85,000	---------
Direct Labour hrs. p.u.	0.6	1.2	1.0	0.6	---------	---------
Total D.L. hrs.	3,54,000	6,54,000	3,15,000	1,77,000	---------	15,00,000
Contribution p.u.	8	15	13	7	3	---------
Total contribution	47,20,000	81,75,000	40,95,000	20,65,000	2,55,000	1,93,10,000
Less: Fixed cost						51,40,000
Profit						1,41,70,000

Incremental profit if product C is bought out	=1,42,97,500-1,41,70,000	=₹1,27,500
Therefore product A can be produced		
Profit if advertisement campaign is taken up	=1,42,97,500-5,00,000	=₹1,37,97,500
Profit, if no advertisement campaign is taken up	=₹1,35,60,000	
Incremental profit if advertisement campaign is taken up	=1,37,97,500-1,35,60,000	=₹2,37,500

Suggestion: Hence it is suggested to take up advertisement campaign and procure product A from outside for excess direct labour hours over the normal capacity.

(ii) All-Win Co. manufactures and sells 15,000 units of a product. The Full Cost per unit is ₹ 200. The Company has fixed its price so as to earn a 20% Return on an Investment of ₹ 18,00,000.

Requited:

1. **Calculate the Selling Price per unit from the above. Also, calculate the Mark-up % on the full cost per unit.**
2. **If the Selling Price as calculated above represents a Mark-up % of 40% on Variable Cost per unit, calculate the Variable Cost per unit.**
3. **Calculate the Company's Income if it had increased the Selling Price to ₹ 230. At this price, the Company would have sold 13,500 units. Should the Company have increased the Selling Price to ₹ 230?**
4. **In response to competitive pressures, the company must reduce the price to ₹ 210 next year, in order to achieve sales of 15,000 units. The company also plans to reduce its investment to ₹16,50,000. If, a 20% Return on Investment should be maintained, what is the Target Cost per unit for the next year?** **[(½+½)+½+½+1]**

Answer:

1. Target Sale Price per unit = Full Cost + Target Profit = ₹ 200 + $\frac{₹18,00,000 \times 20\%}{15,000 \text{ units}}$	₹ 224
So, Mark-up on Full cost = ₹ 24 ÷ ₹ 200	12%
2. Above Sale Price ₹ 224 = VC + 40% thereon, i.e., 140% on VC. So, Var. Cost = $\frac{₹224}{140\%}$	₹ 160
3. Present Contribution at 15,000 units = (₹ 224 – ₹ 160) x 15,000 units =	₹ 9,60,000
Revised Contribution at 13,500 units = (₹ 230 – ₹ 160) × 13,500 units =	₹ 9,45,000
Hence, Increase in Sale Price is not beneficial, due to reduction in contribution by	₹ 15,000

4. Target Profit for next year = $\frac{₹16,50,000 \times 20\%}{15,000 \text{ units}}$ =₹ 22	
So, Target Cost for next year = New Sale Price less Target Profit = ₹ 210 – ₹ 22	₹ 188

(c)

(i) State cost of quality? How it can be reduced? [1+2]

Answer:

The cost of quality is the sum of cost of conformance, cost of non-conformance and cost of lost opportunity. The quality costs amount to somewhere between 5-25% of turnover depending on industry. The quality cost will be much more if we include the potential loss of business from the affected customers. With cost of quality accounting for such a large proportion of turnover any reduction in quality cost will improve profitability and provide competitive edge to the company.

The quality cost reduction can be achieved in the following two stages:

- First, when prevention costs are increased to pay for the right kind of systems engineering work in quality control, a reduction will occur in rejection, defect and rework of output. This defect reduction means a substantial reduction in both types of failure costs.
- Secondly, a reduction in defective output will have a positive effect on appraisal costs because defect reduction means a reduced need for routine inspection and test activities. It follows that as prevention is increased the need for appraisal decreases. The end result is a substantial reduction in the cost of quality and an increase in the level of quality.

(ii) Bharat Consumer products employ 10 trucks of 10 tonnes capacity to deliver products to their distributors. The vehicles return empty on the return journey. The following data refer to the month of May 2014:

	Budget	**Actual**
Load Carried (tones)	**4,000**	**3,800**
No. of truck trips	**500**	**450**
Journey hours	**3,000**	**25,000**
Loading Time (hours)	**1,000**	**800**
Km. Travelled	**25,000**	**25,000**
Diesel used (litres)	**12,500**	**13,000**
No. of drivers	**12**	**12**
No. of mechanics	**5**	**5**
Fixed costs	**₹8,000**	**₹8,000**
Cost per litre of Diesel	**1.00**	**0.95**
Wages per driver per month	**1,000**	**1,050**
Wages per Mechanic per month	**800**	**900**
Shares for Repairs	**2,000**	**2,500**

Prepare statement for management detailing budgeted and actual operating cost. Also give your comments on performance. [5+4]

Answer:

Comparative Statement of Operating Costs

No. of Trucks:10	**Capacity:10 Tonnes**		**Month: May 2013**
	Budget	Actual	Variance
Cost of Diesel	12,500	12,350	150
Spares for Repairs	2,000	2,500	-500
Wages: Drivers	12,000	12,600	-600
Mechanics	4,000	4,500	-500

Total variable costs	30,500	31,950	-1,450
Total Fixed Costs	8,000	8,000	-
Total operating costs	38,500	39,950	-1,450
Load and Distance carried (1,000 tonne-km.)	1,00,000	95,000	-5,000
Operating cost per 1,000 tonne km.	0.385	0.422	0.037
Operating cost per truck trip	77	89	-12
Cost of Diesel per journey hour	4.17	4.94	-0.77
Truck loaded per hour (tone)	4.00	4.75	0.75
Journey hours per trip	6.00	5.55	0.45
Kms travelled per trip	50.00	55.55	5.55

Comments:

I. The actual operating costs are ₹1,450 more than the budgeted costs. Of course, the cost of diesel has come down by ₹150 due to reduction in its price, but the other costs such as spares and wages all together have gone up by ₹1,600.

II. The operation cost per 1,000 tonne km, has gone up from 38.5 paise to 42.2 paise because of two reasons: (a) the actual load carried is less than what was budgeted and (b) total operating cost have gone up as stated in (I) above.

III. There is increase in the operating cost per trip also because of fall in number of trips and rise in operating costs.

IV. In spite of reduction in the cost of petrol and journey hours per trip (both favourable) the cost of fuel per journey hour has gone up. This is due to reduction in number of trips.

V. Loading of trucks per tone-hour is favourable. This has gone up from 4 to 4.75 per tonne-hour.

VI. The same distance has been covered by a smaller number of trips. Thus kms. Travelled per trip is also favourable. It also explains that longer distance was travelled per trip on account of which reduced load was carried. However, increase in consumption of diesel needs explanation because the distance travelled was the same as budgeted.

VII. Increase in the cost of spares indicates a large number of break-downs on account of which there has been a fall in journey hours to some extent.

(iii) State the term Margin of Safety? How it is calculated? **[2+1]**

Answer:

The margin of safety refers to sales in excess of the break-even volume. It represents the difference between sales at a given activity level and sales at break-even point. It is important that there should be a reasonable margin of safety to run the operations of the company in profitable position. A low margin of safety usually indicates high fixed overheads so that profits are not made until there is a high level of activity to absorb the fixed costs. A margin of safety provides strength and stability to a concern.

The margin of safety is an important measure, especially in times of receding sales, to know the real position to operate without incurring losses and to take steps to increase the margin of safety to improve the profitability.

Margin of safety is calculated by using the following formula:

Margin of safety = Actual Sales – Break even Sales