Paper 15 - Business Strategy and Strategic Cost Management

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

This paper contains 4 questions, representing two separate sections as prescribed under syllabus 2012. All questions are compulsory, subject to the specific guidance/ instructions stated against each question. All workings, wherever necessary, must form a part of your answer. Assumptions, if any, should be clearly stated.

Question No. 1. (Read the Case and Answer the following Questions)

1. **Lenovo Group is one of the leading IT companies in China and it has now become the 3rd PC provider in the world market after the acquisition of IBM's Personal Computing Division. As a global company after the alliance with IBM, it has a number of more than 19,000 employees worldwide. Lenovo has always aspired to become a global company. On December 8th, 2004, Lenovo announced that it would acquire IBM's global PC business for US$ 1.25 billion and a five-year brand licensing agreement. According to the terms of the agreement, the acquisition included IBM's desktop and notebook computer business, as well as its PC-related R&D centers, manufacturing plants, global marketing networks, and service centers. As part of the transaction, Lenovo and IBM also entered a broad-based, strategic alliance of warranty and maintenance services and preferred supplier of customer leasing and channel financing services to Lenovo. On April 30th, 2005, Lenovo completed the landmark acquisition with IBM and entered a new era of globalization, making the new Lenovo a PC leader in the global market, with approximately 8 per cent of the worldwide PC market by shipments, followed after Dell (16.4%) and HP (13.9%).**

   Answer the following questions —

   (1) Describe the motives of a company toward Strategic Alliances.
   (2) What are reasons can be considered for the failure of strategic alliance among different companies? State in details.
   (3) What was the necessity to form the strategic alliance between Lenovo and IBM? Also state the motives toward Lenovo & IBM's Strategic Alliance. [7+5+(2+6)]

Answer:

(1) Motives toward Strategic Alliances:

Most important reason for the surge in strategic alliance has been under the recognition of the fact that no corporation has enough capital to acquire all of the companies and assets needed to compete everywhere in the world. While with alliances, companies can access global markets and contribute to economic development without steep exposure to market and political turmoil. The motivations for the formation of an alliance can range from purely economic reasons (e.g., search for scale, efficiency, or risk sharing) to more complex strategic ones (e.g., learning new technologies, seeking political advantage).

Forces that drive the formation of strategic alliances can be categorized into three aspects. Firstly, companies are seeking for co-option during its globalizing process. Co-option turns potential competitors into allies and providers the complementary goods and services that allow new business to develop and usually multinational companies seek partners with similar products who have a good knowledge of local market and channels of distribution in order to share the risk during the expansion of the global market. The privileged market access of some countries sometimes can be a reason for MNC to search for alliance under the globalization movement.

Secondly, co-specialization has become a more and more attractive force behind the strategic alliance. It is the synergistic value creation that results from the combination of previously separate resources, positions, skills and knowledge sources. By bringing the resources of two or more companies together, strategic alliances often provide the most efficient size to conduct a particular business. Through the way of alliances, partners can contribute their unique and differentiated resources to the success of their allies, i.e. skills, R&D, brands, networks, as well as tangible and intangible assets.

Alliance may also be an avenue for learning and internalizing new skills from its partners, in particular those that are tacit, collective and embedded. Therefore, it is self-evident that strategic alliance is central to the corporate strategy and it is significant and unavoidable for the global reaching step in the world economy. To international managers, the strategic benefits are compelling under the synergy effects among partners; and it is a flexible and efficient channel to crack new markets, to gain skills, know-how, or products, and to share risks or resources.

(2) Reasons for the failure of strategic alliance —

The initial stage of an alliance is a critical shakeout period fraught with uncertainties and ambiguities, managers need to find ways to tackle the early shown or potential problems to lay the foundation for a good relationship later. Studies have shown that two thirds of all alliances experience severe leadership and financing problems during the first two years.

There are many reasons for the high rate alliance failures. An inadequate capability to manage the alliance is the main reason. Leadership played a key role to the success of alliances. Drawing specially trained strategic alliance leaders from outside the organization, as many companies do, can be problematic; strategic alliance managers need the knowledge, relationship and credibility that only an insider can bring to the table. Another frequently cited reason is poor selection of alliance partners; due to competitive pressures, many firms rush into alliances without adequate preparation or understanding of their needs, the in compatibility of partners will lead to insurmountable problems. Other reasons that are often cited for the alliances failure include lack of trust between partners, cultural conflicts, incompatible chemistry, and unique risks inherent in strategic alliances, and lastly focusing on alliance formation rather than sustaining the alliance.

International alliances are increasingly central to the corporate success; however, they often end up in divorce. In many cross-border alliances, the failure stems from the deal maker's concentration on strategies, financial, and legal complexities, while largely ignoring issues of "cultural compatibility" among the alliance partners. Therefore, cultural differences could become a barrier to success, especially at the initial stage. Besides that, the failure to build trust between partners in the early stage of the alliance could be detrimental to further development to the next stage. Trust building is also closely linked to the cultural compatibility between partners. If partners lack compatible cultures and expectations, the trust between partners employees may not materialized, which will lead to inter-partner employee conflicts.

(3) The necessity to form the strategic alliance between Lenovo and IBM:

Lenovo was known as one of China's most promising companies in the early 1990s. Before the declaration of the alliance with IBM, the company had encountered with obstacles for its further expansion and development. Though Lenovo is the largest PC maker in China with more than a quarter of the market share, it does little business outside the country. The increasing fierce competition from aggressive foreign rivals such as Dell and HP in the past few years in Chinese market has put further pressures on Lenovo's margins. Apart from that, the company might also suffer financial problems and its performance over the past years might have fallen short of internal targets.

The motives toward Lenovo & IBM's Strategic Alliance:

Lenovo's takeover of IBM's PC division has been described as "snake ate the elephant", and the deal pulls Lenovo to the third-largest just behind Dell and HP. The two computer firms have formed a strategic alliance in PC business worldwide. The motivations that drive the formation of the strategic alliance between Lenovo and IBM can be analyzed from three perspectives.

For Lenovo's aspect, though Lenovo is the largest IT Company in China, its products are mainly within China. Lenovo's distribution network is its biggest problem, and it is not well adapted to serving the small and medium-sized companies who usually buy directly. Thus, in the first place, with an intention to expand its business globally, the firm needs a well-developed worldwide distribution network, which happens to be the advantage of IBM. As what has been announced by Lenovo, the agreement between the two firms includes broad-based strategic alliance under which Lenovo's products will be integrated into IBM's global service offerings, which also became the impetus to the deal.

Secondly, as a world-leading company like IBM, it has specialized and advanced skills in sales and marketing functions, for Lenovo, the sales and marketing support, as well as the R&D support are significant and of a necessity in its way to a multinational enterprise, which is also part of the agreement. Lenovo could get access to some of the world's most popular laptop designs, access to the U.S. market, and technological centers as advanced as any of its rivals after the establishing the alliance with IBM. Strategic alliance comes along with the learning from its partners and the internalization of the new knowledge, thereby benefits the firm. In this case, IBM provides such model and as an iconic enterprise for Lenovo, who is heading its way globally.

Thirdly, the use of IBM's globally recognized brand is an impetus to accelerate the alliance. The local brand 'Lenovo' will become more valuable in the market after its association with the IBM. And also, Lenovo's right to use the IBM brand on the computers for five years adds more value and trustworthiness to the brand.

Through acquiring IBM's global PC business and forming a strategic alliance with IBM, Lenovo would absorb and integrate the skills from both sides and acquire global brand recognition, an international and diversified customer base, a world-class distribution network with global reach, more diversified product offerings, enhanced operational excellence and leading-edge technology. The alliance with IBM would also help establish Lenovo's international recognition by leveraging IBM's powerful global brand through a five-year brand licensing agreement.

For IBM's aspect, it expects that the deal with Lenovo, China's largest PC maker will further consolidate its presence in the world's fastest growing IT market. The strategic alliance with Lenovo might become a move towards the shifting of demographics. As a market, China is a tough nut to crack especially for outsiders. Much of the competition comes from Lenovo, which is far and away the market leader in China in order to expand Chinese market and enjoy a slice of Lenovo ownership, IBM chooses Lenovo as its strategic partner. Therefore, the driving forces behind the alliance reflect the two company's desires of seeking for co-option, co-specialization during its globalizing process, with an attempt to learn and internalize within its own organization, which are also the main three motivations for strategic alliances.

Question No. 2. (Answer **any two** questions. Each question carries **15 marks**)

2.(a) (i) What do you mean by strategic leadership? What are two approaches to leadership style? [2+2+2=6]

Answer:

Strategic leadership is the ability of influencing others to voluntarily make decisions that enhance prospects for the organization's long-term success while maintaining short-term financial stability. It includes determining the firm's strategic direction, aligning the firm's strategy with its culture, modeling and communicating high ethical standards, and initiating changes in the firm's strategy, when necessary. Strategic leadership sets the firm's direction by developing and communicating a vision of future and inspire organization members to move in that direction. Unlike strategic leadership, managerial leadership is generally concerned with the short-term, day-to-day activities.
Two basic approaches to leadership can be transformational leadership style and transactional leadership style.

Transformational leadership style use charisma and enthusiasm to inspire people to exert them for the good of the organization. Transformational leadership style may be appropriate in turbulent environments, in industries at the very start or end of their life-cycles, in poorly performing organizations when there is a need to inspire a company to embrace major changes. Transformational leaders offer excitement, vision, intellectual stimulation and personal satisfaction. They inspire involvement in a mission, giving followers a "dream" or "vision" of a higher calling so as to elicit more dramatic changes in organizational performance. Such a leadership motivates followers to do more than originally affected to do by stretching their abilities and increasing their self-confidence, and also promote innovation throughout the organization.

Whereas, **transactional leadership** style focus more on designing systems and controlling the organization's activities and are more likely to be associated with improving the current situation. Transactional leaders try to build on the existing culture and enhance current practices. Transactional leadership style uses the authority of its office to exchange rewards, such as pay and status. They prefer a more formalized approach to motivation, setting clear goals with explicit rewards or penalties for achievement or non-achievement. Transactional leadership style may be appropriate in settled environment, in growing or mature industries, and in organizations that are performing well. The style is better suited in persuading people to work efficiently and run operations smoothly.

2.(a) (ii) Under what conditions would you recommend the use of Turnaround strategy in an organization? [4]

Answer:

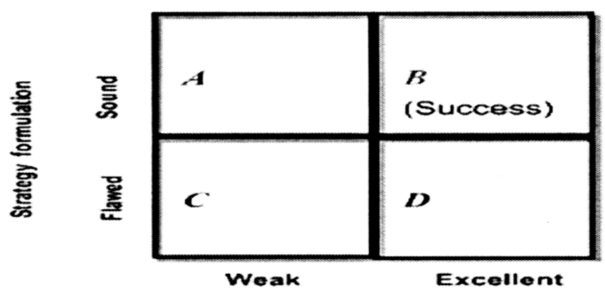
Rising competition, business cycles and economic volatility have created a climate where no business can take viability for granted. Turnaround strategy is a highly targeted effort to return an organization to profitability and increase positive cash flows to a sufficient level. Organizations those have faced a significant crisis that has negatively affected operations requires turnaround strategy. Turnaround strategy is used when both threats and weaknesses adversely affect the health of an organization so much that its basic survival is a question. When organization is facing both internal and external pressures making things difficult then it has to find something which is entirely new, innovative and different. Being organization's first objective is to survive and then grow in the market; turnaround strategy is used when organization's survival is under threat. Once turnaround is successful the organization may turn to focus on growth. Conditions for turnaround strategies when firms are losing their grips over market, profits due to several internal and external factors, and if they have to survive under the competitive environment they have to identify danger signals as early as possible and undertake rectification steps immediately. These conditions may be, inter alia cash flow problems, lower profit margins, high employee turnover and decline in market share, capacity underutilization, low morale of employees, recessionary conditions, mismanagement, raw material supply problems and so on.

2.(a) (iii) An important part of strategic management process is implementation of strategy. Discuss the relationship of soundness of strategy with the quality of implementation. [5]

Answer:

Strategy implementation concerns the managerial exercise of putting a freshly chosen strategy into place. Strategy execution deals with the managerial exercise of supervising the ongoing pursuit of strategy, making it work, improving the competence with which it is executed and showing measurable progress in achieving the targeted results. Strategic implementation is concerned with translating a decision into action, with presupposes that the decision itself was made with some thought being given to feasibility and acceptability.

It is crucial to realize the difference between strategy formulation and strategy implementation because they both require very different skills. Also, a company will be successful only when the strategy formulation is sound and implementation is excellent. There is no such thing as successful strategic design. This sounds obvious, but in practice the distinction is not always made. The matrix in the figure below represents various combinations of strategy formulation and implementation:



2. (b)(i) Define Strategic Alliance. [5]

Answer:

Strategic Alliance is an agreement for cooperation among two or more independent firms to work together toward common objectives. A Strategic Alliance is a relationship between two or more parties to pursue a set of agreed upon goals or to meet a critical business need while remaining independent organizations. This form of cooperation lies between mergers & acquisitions and organic growth.

Partners may provide the strategic alliance with resources such as products, distribution channels, manufacturing capability, project funding, capital equipment, knowledge, expertise or intellectual property.

There are four types of strategic alliances: joint venture, equity strategic alliance, non-equity strategic alliance and global strategic alliances.

(1) Joint Venture: It is a strategic alliance in which two or more firms create a legally independent company to share some of their resources and capabilities to develop a competitive advantage.

(2) Equity Strategic Alliance: It is an alliance in which two or more firms own different percentages of the company they have formed by combining some of their resources and capabilities to create a competitive advantage.

(3) Non-Equity Strategic Alliance: It is an alliance in which two or more firms develop a contractual relationship to share some of their unique resources and capabilities to create a competitive advantage.

(4) Global Strategic Alliances: Working partnership between companies (often more than two) across national boundaries and increasingly across industries, sometimes formed between company and a foreign government or among companies and governments.

2.(b) (ii) What do you understand by "Strategy"? Explain the four generic strategies as discussed by Glueck and Jauch. [2+8=10]

Answer:

Businesses have to respond to a dynamic and often hostile environment for pursuit of their mission. Strategies provide an integral framework for management and negotiate their way through a complex and turbulent external environment. Strategy seeks to relate the goals of the organisation to the means of achieving them. A company's strategy is the game plan management is using to stake out market position and conduct its operations. A company's strategy consists of the combination of competitive moves and business approaches that managers employ to please customers compete successfully and achieve organisational objectives. Strategy may be defined as a long range blueprint of an organisation's desired image, direction and destination what it wants to be, what it wants to do and where it wants to go. Strategy is meant to fill in the need of organisations for a sense of dynamic direction, focus and cohesiveness.

The Generic Strategies: According to Glueck and Jauch there are four generic ways in which strategic alternatives can be considered. These are stability, expansion, retrenchment and combinations.

(1) **Stability strategies:** One of the important goals of a business enterprise is stability to safeguard its existing interests and strengths, to pursue well established and tested objectives, to continue in the chosen business path, to maintain operational efficiency on a sustained basis, to consolidate the commanding position already reached, and to optimize returns on the resources committed in the business.

(2) **Expansion Strategy:** Expansion strategy is implemented by redefining the business by adding the scope of business substantially increasing the efforts of the current business. Expansion is a promising and popular strategy that tends to be equated with dynamism, vigor, promise and success. It is often characterised by significant reformulation of goals and directions, major initiatives and moves involving investments, exploration and onslaught into new products, new technology and new markets, innovative decisions and action programmes and so on. Expansion includes diversifying, acquiring and merging businesses.

(3) **Retrenchment Strategy:** A business organisation can redefine its business by divesting a major product line or market. Retrenchment or retreat becomes necessary or expedient for coping with particularly hostile and adverse situations in the environment and when any other strategy is likely to be suicidal. In business parlance also, retreat is not always a bad proposition to save the enterprise's vital interests, to minimise the adverse environmental effects, or even to regroup and recoup the resources before a fresh assault and ascent on the growth ladder is launched.

(4) **Combination Strategies:** Stability, expansion or retrenchment strategies are not mutually exclusive. It is possible to adopt a mix to suit particular situations. An enterprise may seek stability in some areas of activity, expansion in some and retrenchment in the others. Retrenchment of ailing products followed by stability and capped by expansion in some situations may be thought of. For some organisations, a strategy by diversification and/or acquisition may call for a retrenchment in some obsolete product lines, production facilities and plant locations.

2.(c) (i) Dramatic cost advantages can emerge from finding innovative ways to restructure processes and tasks, cut frills and provide the basics more economically

(1) List the primary ways by which companies can achieve a cost advantage by reconfiguring their value chains.

(2) Explain the way a cost leadership strategy can help a firm in handling the five competitive forces.

(3) Identify the elements in the marketing mix that would be particularly relevant to a manufacturer of domestic washing machine. [4+4+4=12]

Answer:

(1) **Cost advantages by reconfiguring value chains:**

Dramatic cost advantages can emerge from finding innovative ways to restructure processes and tasks, cut out frills, and provide the basics more economically. The primary ways companies can achieve a cost advantage by reconfiguring their value chains include:

Simplifying the product design

Stripping away the extras and offering only a basic, non-frills product or service, thereby cutting out activities and cost associated with multiple features and potions.

Re-engineering core business processes to cut out needless work step, and low-value added activities.

Shifting to a simpler, less capital-intensive or more streamlined technological process.

Finding ways to bypass the use of high-cost raw materials or component parts.

Using direct-to-end-user sales and marketing approaches that cut out large costs and margins of wholesalers and retailers.

Relocating facilities closer to suppliers, customers or both to curtail inbound & outbound logistical costs.

Achieving a more economical degree of forward or backward vertical integration, relative to competitors.

Dropping the something for everyone approach and focusing on a limited product/ service to meet a special, but important, need of the target buyer, thereby eliminating activities and costs associated with numerous product versions.

(2) Cost leadership strategy in handling five competitive forces:

Being the low-cost provider in an industry, a firm can provide some attractive defences against the five competitive forces:

In meeting the challenges of rival competitors, the low cost firm is in the bet position to compete offensively on the basis of price, to defend against price war conditions, to use the appeal of lower price to grab sales (and market share) from rivals, and to earn above-average profits (based on bigger profit margins or greater sales volume). Low cost is a powerful defence in markets where price competition thrives.

In defending against the power of buyers, low costs provide a company with partial profit margin proaction since powerful customers is rarely able to bargain price down past the survival level of the next most cost-efficient seller.

In countering the bargaining leverage of suppliers, the low-cost producer is more insulated than competitors from powerful suppliers if the primary source of its cost advantage in greater internal efficiency.

As regards potential entrants, the low-cost leader can use price-cutting to make it harder for a new rival to win customers; the pricing power of the low-cost provider acts as a barrier for new entrants.

In competing against substitutes, a low-cost leader is better positioned to use low prices as a defence against companies trying to gain market inroads with a substitute product or service.

(3) Elements in the Marketing Mix: A manufacturer of domestic washing machine is a supplier of consumer durables to the consumer market. Here, the marketing mix has to be consumer-oriented, so that the main principles behind the marketing mix and the smaller sales mix must be such that the arrangement and the allocation of resources maximise returns per unit of outlay washing machines are bought for use, and also for personal satisfaction, and individual buyers purchase them in single units.

Product: With a consumer capital good like a washing machine, the product itself will be important. The consumer will want quality, a wider variety of features and a well-known name with good reliable service backup and guarantees. Packing may be important, but technological specifications will certainly be. Under Place, ready availability, good service cover and prompt delivery will be important.

Promotion: An individual buys washing machine infrequently (e.g. motor car). So, promotion is necessary. The customer will look at all promotional literatures, want demonstration and possibly consult an adviser.

Price: It is an expensive product. Price discounts, trade-in allowances and bonuses will be important Credit terms and payment periods will also be important.

Software restructuring involves cultural and process changes required creating collaborative environment for a firm's growth. Suggested steps are:

- Business strategy communication
- Co-ordination
- Trust
- Stretch
- Empowering people
- Industry foresight
- Training.

2.(c) (ii) How emergent strategy is different from deliberate strategy? [3]

Answer:

Deliberate strategy is top-down, akin to strategic planning, and much needed for coordinating action upon 3 conditions:

(i) Management has to address all critical details in order for the strategy to succeed. Those implementing the strategy have to be aware of these details in light of the larger picture of senior management's deliberate strategy.

(ii) Management has to stress collective action and paint the picture of the strategy to align everyone so that actions will be consistent and appropriate.

(iii) Management has to take in account that there are some external influences that cannot be fully anticipated, arising from political, technological, and market forces. As such preparations must be made to as far as possible allow for the realisation of strategy with these influences in mind.

Emergent strategy on the other hand is more of a cumulative effect from bottom-up – the ground engineers, salespeople, and other executive staff. These are daily tactical operations decisions made by those who are not in the position or state of mind to conceptualise such strategies.

Question No. 3. (Read the Case and Answer the following Questions)

3. Hero Cycles has two divisions, A and B, which manufacture expensive bicycles. Division A produces the bicycle frame, and Division B assembles the rest of the bicycle onto the frame. There is a market for both the subassembly and the final product. Each division has been designated as a profit center. The transfer price for the subassembly has been set at the long-run average market price.

The following data are available for each division:

	₹
Selling price for final product	**3,000**
Long-run average selling price for intermediate product	**2,000**
Incremental costs for completion in Division B	**1,500**
Incremental costs in Division A	**1,200**

The manager of Division B has made the following calculation:

	₹	₹
Selling price for final product		**3,000**
Transferred-in costs (market)"	**2,000**	
Incremental costs for completion	**1,500**	**3,500**
Contribution (loss) on product		**(500)**

Required:

(1) Should transfers be made to Division B if there is no unused capacity in Division A? Is the market price the correct transfer price? Show your computations.

(2) Assume that Division A's maximum capacity for this product 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 what transfer price? Assume that for a variety of reasons, Division A will maintain the ₹ 2,000 selling price indefinitely. That is, Division A is not considering lowering the price to outsiders even if idle capacity exists.

(3) Suppose Division A quoted a transfer price of ₹ 1,500 for up to 200 units. What would be the contribution to the company as a whole if a transfer were made? As manager of Division B, would you be inclined to buy at ₹1,500? Explain. [8+5+7]

Answer:

(1) No, transfers should not be made to Division B if there is no excess capacity in Division A. An incremental (outlay) cost approach shows a positive contribution for the company as a whole.

	₹	₹
Selling price for final product		3,000
Incremental costs in Division A	1,200	
Incremental costs in Division B	1,500	2,700
		300

However, if there is no excess capacity in Division A, any transfer will result in diverting products from the market for the intermediate product. Sales in this market results in a greater contribution for the company as a whole. Division B should not assemble the bicycle since the incremental revenue Hero Cycles can earn, ₹1,000 per unit (₹3,000 from selling the final product – ₹2,000 from selling the intermediate product) is less than the incremental costs of ₹1,500 to assemble the bicycle in Division B. Alternatively put, Hero Cycles's contribution margin from selling the intermediate product exceeds Hero Cycles's contribution margin from selling the final product.

	₹
Selling price of intermediate product	2,000
Incremental (outlay) costs in Division A	1,200
Contribution	800

Minimum transfer price

$$= \begin{pmatrix} \text{Additional incremental costs per unit} \\ \text{incurred up to the point of transfer} \end{pmatrix} + \begin{pmatrix} \text{Opportunity costs per unit to the} \\ \text{supplying division} \end{pmatrix}$$

= ₹1,200 + (₹2,000 – ₹1,200)

= ₹2,000, which is the market price

The market price is the transfer price that leads to the correct decision, that is, do not transfer to Division B unless there are extenuating circumstances for continuing to market the final product. Therefore, B must either drop the product or reduce the incremental costs of assembly from ₹1,500 per bicycle to less than ₹1,000.

(2) If (a) A has excess capacity, (b) there is intermediate external demand for only 800 units at ₹2,000, and (c) the ₹2,000 price is to be maintained, then the opportunity costs per unit to the supplying division are ₹0. The general guideline indicates a minimum transfer price of: ₹1,200 + ₹ 0 = ₹1,200, which is the incremental or outlay costs for the first 200 units. B would buy 200 units from A at a transfer price of ₹1,200 because B can earn a contribution of ₹300 per unit [₹3,000 - (₹1,200 + ₹1,500)]. In fact, B would be willing to buy units from A at any price up to ₹1,500 per unit because any transfers at a price of up to ₹1,500 will still yield B a positive contribution margin.

Note, however, that if B wants more than 200 units, the minimum transfer price will be ₹2,000 as computed in requirement 1 because A will incur an opportunity cost in the form of lost contribution of ₹800 (market price, ₹2,000 - outlay costs of ₹ 1,200) for every unit above 200 units that are transferred to B.

The following schedule summarizes the transfer prices for units transferred from A to B:

Units	**Transfer Price**
0 - 200	₹1,200 - ₹1,500
200 -1,000	₹2,000

(3) Division B would show zero contribution, but the company as a whole would generate a contribution of ₹300 per unit on the 200 units transferred. Any price between ₹1,200 and ₹1,500 would induce the transfer that would be desirable for the company as a whole. A motivational problem may arise regarding how to split the ₹300 contribution between Division A and B. Unless the price is below ₹1,500, B would have little incentive to buy.

Note. The transfer price that may appear optimal in an economic analysis may, in fact, be totally unacceptable from the viewpoints of (1) preserving autonomy of the managers, and (2) evaluating the performance of the divisions as economic units. For instance, consider the simplest case discussed previously, where there is idle capacity and the ₹2,000 intermediate price is to be maintained. To direct that A should sell to B at A's variable cost of ₹1,200 maybe desirable from the viewpoint of B and the company as a whole. However, the autonomy (independence) of the manager of A is eroded. Division A will earn nothing, although it could argue that it is contributing to the earning of income on the final product.

If the manager of A wants a portion of the total company contribution of ₹300 per unit, the question is: How is an appropriate amount determined? This is a difficult question in practice. The price can be negotiated upward to somewhere between ₹1,200 and ₹1,500 so that some "equitable" split is achieved. A dual transfer-pricing scheme has also been suggested, whereby the supplier gets credit for the full intermediate market price and the buyer is charged with only variable or incremental costs. In any event, when there is heavy interdependence between divisions, such as in this case, some system of subsidies may be needed to deal with the three problems of goal congruence, management effort, and subunit autonomy. Of course, where heavy subsidies are needed, a question can be raised as to whether the existing degree of decentralization is optimal.

Question No. 4. (Answer **any two** questions. Each question carries **15 marks**)

4.(a) (i) Shoaib Ltd. makes tow products – X and Y, with the following cost patterns.

	Product X	Product Y
Direct materials	**27**	**24**
Direct Labour at ₹ 5 per hour	**20**	**25**
Variable production overheads at ₹ 6 per hour	**3**	**6**
	50	**55**

Production fixed overheads total ₹3,00,000 per month and these are absorbed on the basis of direct labour hours. Budgeted direct labour hours are 25,000 per month. However, the company has carried out an analysis of its production support activities and found that its 'fixed cost' actually vary in accordance with non-volume-related factors.

Activity	Cost-driver	Product X	Product X	Total cost (₹)
Set-ups	**Production runs**	**30**	**20**	**40,000**
Materials handing	**Production runs**	**30**	**20**	**1,50,000**
Inspection	**Inspections**	**880**	**3,520**	**1,10,000**
				3,00,000

Budget Production is 1,250 units of product X and 4,000 units of product Y.

Required:

Given that the company wishes to make a profit of 20% on full production costs calculate the prices that should be charged for products X and Y using the following.

(1) Full cost pricing
(2) Activity based cost pricing
(3) Offer your comments on the figures arrived at (1) and (2). [2+4+2=8]

Answer:

(1) The full cost and mark-up will be calculated as follows.

	Product X (₹)	**Product Y (₹)**
Variable Costs Fixed Production overhead (₹3,00,000/25,000 = ₹12 per direct labour hour)	50.00 <u>48.00</u>	55.00 <u>60.00</u>
 Profit mark-up (20%)	98.00 <u>19.60</u>	115.00 <u>23.00</u>
Selling Price	117.60	138.00

(2) Using activity based costing, overheads will allocated on the basis of cost drivers.

	Product X (₹)	**Product Y (₹)**	**Total (₹)**
Set-ups (30:20) Materials handling (30:20) Inspections (880:3,520)	24,000 90,000 <u>22,000</u>	16,000 60,000 <u>88,000</u>	40,000 1,50,000 <u>1,10,000</u>
	1,36,000	1,64,000	3,00,000
Budget units Overheads per unit (₹)	1,250 units 108.80	4,000 units 41.00	

The price is then calculated as before

	Product X (₹)	**Product Y (₹)**
Variable Costs Production overhead	50.00 <u>108.00</u>	55.00 <u>41.00</u>
 Profit mark-up (20%)	158.80 <u>31.76</u>	96.00 <u>19.20</u>
	190.56	115.20

(3) Comments. The result in (ii) is radically different from those in (i). On this basis it appears that the company has previously been making a huge loss on every unit of Product X sold for ₹117.60. If the market will not accept a price increase, it may be worth considering ceasing production of product X entirely. It also appears that there is scope for a reduction in the price of product Y, and this would certainly be worthwhile if demand for the product is elastic.

4.(a) (ii) A Company has sales of 1,00,000 units at a price of ₹200.00 per unit and profit of ₹40.00 Lakhs in the current year. Due to stiff competition, the Company has to reduce its price of product next year 5% to achieve same volume target of sales. The cost structure and profit for the current year is given as below:

Particulars	(₹ Lakhs)
Direct Materials	**60.00**
Direct Wages	**45.00**
Variable Factory Overheads	**20.00**
Fixed Overheads including Sales & Admin Expenses	**35.00**
Total Cost	**160.00**

To achieve the Target Cost to maintain the same profit, the Company is evaluating the proposal to reduce Labour Cost and Fixed Factory Overheads. A Vendor supplying the Machine suitable for the Company's operations has offered an advanced technology Semi-Automatic Machine of ₹20 Lakhs as replacement of Old Machine worth ₹5.0 Lakhs. The Vendor is agreeable to take back the Old Machine at ₹2.70 Lakhs only. The Company's policy is to charge depreciation at 10% on WDV. The Maintenance Charge of the Existing Machine is ₹1.20 Lakhs per annum whereas there will be warranty of services free of cost for the New Machine first two years. There are ten (10) Supervisors whose Salary is ₹1.50 Lakhs per annum. The New Machine having Conveyor Belt is expected to help in cost cutting measures in the following ways –

(1) Improve productivity of workers by 20%
(2) Cut-down Material Wastage by 1%
(3) Elimination of services of Supervisors because of automatic facilities of the machine
(4) Saving in Packaging Cost by 1.5 Lakhs

Assuming Cost of Capital to be 15%, calculate how many supervisors should be removed from the production activities to achieve the Target Cost. [7]

Answer:

For the same quantity, Sales Value will reduce by 5% of (1,00,000 units × ₹200.00) = ₹10.00 lakhs. For maintaining the same amount of profit, cost also has to be reduced by ₹10.00 Lakhs, which can be achieved as under –

Particulars	Lakhs (₹)
Savings: Reduction in Wages (**Note:** Due to higher Labour Productivity, Wages will be $\frac{45}{1.20}$ = ₹37.50 Lakhs)	7.50
Elimination of wastage of Materials = 1% of ₹60 Lakhs	0.60
Savings in Packing Cost (given)	1.50
Saving in Maintenance Cost (given)	1.20
Sub-Total (A)	**10.80**
Costs: Loss in Disposals of Old Machine (₹5 Lakhs – ₹2.70 Lakhs)	-2.30

Difference in Depreciation	(₹20 Lakhs – ₹5 Lakhs) × 10%	-1.50
Cost of Capital Investment	₹20 Lakhs × 15%	-3.00
	Sub-Total (B)	**6.80**
Effective Cost Reduction before considering removal of Supervisors		4.00
Additional Reduction required for meeting Target Cost, by removing Supervisors = (₹10 Lakhs – ₹4 Lakhs)		**6.00**

Hence, number of Supervisors to be removed = $\frac{₹6\text{Lakhs}}{₹150\text{Lakhs per Supervisor}}$ = 4 Supervisors.

4.(b) (i) After observing heavy congestion of customers over a period of time in a petrol station, Mr. Khan has decided to set up a petrol pump facility on his own in a nearby site. He has compiled statistics relating to the potential customers arrival pattern and service pattern as given below. He has also decided to evaluate the operations by using the simulation technique.

Arrivals		**Services**	
Inter-arrival time (minutes)	**Probability**	**Inter-arrival time (minutes)**	**Probability**
2	**0.22**	**4**	**0.28**
4	**0.30**	**6**	**0.40**
6	**0.24**	**8**	**0.22**
8	**0.14**	**10**	**0.10**
10	**0.10**		

Assume:

- **The clock starts at 8.00 hours**
- **Only one pump is set up**
- **The following 12 Random Numbers are to be used to depict the customer arrival pattern.**
  - **78, 26, 94, 08, 46, 63, 18, 35, 59, 12, 97 and 82.**
- **The following 12 Random Numbers are to be used to depict the customer service pattern.**
  - **44, 21, 73, 96, 63, 35, 57, 31, 84, 24, 05 and 37.**

Your are required to find out the

(1) Probability of the pump being idle and

(2) Average time spent by a customer waiting in queue **[8+2=10]**

Answer:

Random no. Table:

Inter-arrival time				Service time			
Minutes	Probability	Cumulative Probability	Range	Minutes	Probability	Cumulative Probability	Range
2	0.22	0.22	00-21				
4	0.30	0.52	22-51	4	0.28	0.28	00-27
6	0.24	0.76	52-75	6	0.40	0.68	28-67
8	0.14	0.90	76-89	8	0.22	0.90	68-89
10	0.10	1.00	90-99	10	0.10	1.00	90-99

Sl.no.	Random no. for inter arrival	Inter arrival time	Entry time in queue	Service start time	Random no. for service	Service time	Service end time	Waiting time of customer	Idle time
1	78	8	8.08	8.08	44	6	8.14	-	8
2	26	4	8.12	8.14	21	4	8.18	2	-
3	94	10	8.22	8.22	73	8	8.30	-	4
4	08	2	8.24	8.30	96	10	8.40	6	-
5	46	4	8.28	8.40	63	6	8.46	12	-
6	63	6	8.34	8.46	35	6	8.52	12	-
7	18	2	8.36	8.52	57	6	8.58	16	-
8	35	4	8.40	8.58	31	6	9.04	18	-
9	59	6	8.46	9.04	84	8	9.12	18	-
10	12	2	8.48	9.12	24	4	9.16	24	-
11	97	10	8.58	9.16	05	4	9.20	18	
12	82	8	9.06	9.20	37	6	9.26	14	
Total time								**140**	**12**

Average waiting time spent by the customer = 140/12 = 11.67 mins.

Probability of idle time of petrol station = 12/86 = 0.1395 i.e., 14%

4.(b) (ii) A Company produces three products A, B and C. The following information is available for a period:

Product	A	B	C	Throughout Accounting Ratio
Contribution (₹ per unit) (Sales – Direct Materials)	**30**	**25**	**15**	
Machine hours required per unit of production:				
Machine 1	**10 hours**	**2 hours**	**4 hours**	**133.33%**
Machine 2	**15 hours**	**3 hours**	**6 hours**	**200.00%**
Machine 3	**5 hours**	**1 hour**	**2 hours**	**66.67%**

Estimated Sales Demand for A, B and C are 500 units each and machine capacity is limited to 6,000 hours for each machine. You are required to analyze the above information and apply Theory of Constraints process to remove the constraints. How many units of each product will be made? [5]

Answer:

TA Ratio is highest for 'Machine 2'. So, 'Machine 2' is the bottleneck. Total 'Machine 2' hours available = 6,000

Particulars	A	B	C
1. Throughput Contribution per unit (given) (₹)	30	25	15
2. 'Machine 2' hours required per unit	15	3	6
3. Contribution per 'Machine 2' hour (1÷ 2) (₹)	2	8.33	2.5
4. Ranking	III	I	II
5. Maximum Sales Demand (units)	500	500	500
6. 'Machine 2' hours required (2 × 5)	7,500	1,500	3,000
7. 'Machine 2' hours allocated based on ranking	(bal. fig)	(I Rank)	(II Rank)
	1,500	1,500	3,000
8. Possible Output Quantity (7 ÷ 2) (units)	100	500	500

4. (c) (i) X uses traditional standard costing system. The inspection and setup costs are actually ₹ 1,760 against a budget of ₹ 2,000.

ABC system is being implemented and accordingly, the number of batches is identified as the cost driver for inspection and setup costs. The budgeted production is 10,000 units in batches of 1,000 units, whereas actually, 8,800 units were produced in 11 batches.

(1) Find the volume and total fixed overhead variance under the traditional standard costing system.

(2) Find total fixed overhead cost variance under the ABC system. [4+6=10]

Answer:

(1) Calculation of volume and total fixed overhead under Traditional Standard Costing System.

Budgeted overhead cost per unit	₹ 2,000/10,000 units	₹ 0.20
Actual overhead cost per unit	₹ 1,760/8,800 units	₹ 0.20
Total fixed over head variance	Absorbed budgeted overhead – Actual overhead = (₹ 0.20 x 8,800 units) – ₹ 1,760	Nil
Fixed overhead expenditure variance	Budgeted overhead – Actual overhead = 2,000 – 1,760	₹ 240 (F)
Standard absorption rate	₹ 2,000 / 10,000 units	₹ 0.20 per unit
Verification:	Standard absorption rate x (Budgeted units – Actual units) = ₹ 0.20 (10,000 units – 8,800 units)	₹ 240 (A)
Total fixed overhead variance	Expenditure variance + Volume variance = 240 (F) + 240 (A)	Nil

(2) Calculation of fixed overhead cost variance under ABC System

Particulars	Budget	Actual	ABC standard
Total cost (₹)	2,000	1,760	1,800
Production (units)	10,000	8,800	8,800
No. of batches	10	11	9
Batch size (units/batch)	1,000	800	1,000
Cost per batch	200	160	200

Under ABC 8,800 units should have been produced in standard batch size of 1,000 units/ batch.

No. of batches = 8,800/1,000 = 9 approx.

Standard cost under ABC =
(Budgeted cost per batch x ABC standard number of batches)
= ₹ 200 x 9 = 1,800

Under ABC, variability is with respect to batches and not units

Absorbed overheads = 9 batches x Standard rate per batch
= 9 x ₹ 200 = ₹ 1,800

Actual overheads = ₹ 1,760

Total overheads cost variance = ₹ 40 (F)

4.(c) (ii) Write down the quality management principle for improved organization performance. [5]

Answer:

Quality management principles for improved organization performance

The adoption of a QMS should be a strategic decision by top management for survival and growth of the organization. It has been clearly demonstrated and proven that those organizations that focus their efforts firmly onto understanding the needs and expectation of their customers and then systematically set about planning and managing their operations in order to deliver in a consistent and reliable fashion at an overall acceptance cost generally survive and grow.

A Quality Management Principle is a comprehensive and fundamental rule or belief, for leading and operating an organization aimed at continually improving performance over the long-term by focusing on customers while addressing the needs of all other stakeholders,

PRINCIPLE-1: CUSTOMER FOCUS

Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

PRINCIPLE-2: LEADERSHIP

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving organization's objectives.

PRINCIPLE-3: INVOLVEMENT OF PEOPLE

People of all levels are the essence of an organization and their full involvement enables their abilities to be used for the organizations benefit.

PRINCIPLE-4: PROCESS APPROACH

A desired result is achieved more efficiently when activities and related resources are managed as a process.

PRINCIPLE-5: SYSTEM APPROACH TO MANAGEMENT
Identifying, understanding and managing interrelated processes as a system contributes to organization's effectiveness and efficiency in achieving its objectives.

PRINCIPLE-6: CONTINUAL IMPROVEMENT
Continual improvement of the organization's overall performance should be a permanent objective of the organization.

PRINCIPLE-7: FACTUAL APPROACH TO DECISION MAKING
Effective decisions are based on the analysis of data and information.

PRINCIPLE-8: MUTUALLY BENEFICIAL SUPPLIER RELATIONSHIPS
An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.