Paper – 15: Business Strategy & Strategic Cost Management

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

Whenever necessary, suitable assumptions should be made and indicate in answer by the candidates.

Working Notes should be part of your answer

(Section A)
Question No. 1 & 2 are compulsory. Answer any two questions from the rest.

Question 1.
The formation of Delta Pride Catfish in 1981 is an example of the power that a group of suppliers can attain if they exercise the threat of forward integration. Catfish farmers had historically supplied their harvest to processing plants run by large agribusiness firms such as ConAgra and Farm Fresh. When the farmers increased their production of catfish in response to growing demand, they found that processors were holding back on their plans to increase their processing capabilities in hopes of higher retail prices for catfish. Delta Pride responded by forming a cooperative and constructing their own processing plant, which they supplied themselves. Within two years, ConAgra's market share had dropped from 35 percent to 11 percent and Farm Fresh's market share fall by over 20 percent.

Answer the following questions:
(a) "Strategic business manager seeking to develop an edge over rival firms can use Porter's five forces model to better understand the industry" — State the industry characteristics for which the intensity of rivalry is influenced. [10]
(b) Describe the actions, which can be taken by the Delta Pride Catfish in order to make them a powerful supplier. [5]

Answer:
(a) The intensity of rivalry is influenced by the following industry characteristics:

1. **A larger number of firms:** It increases rivalry because more firms must compete for the same customers and resources. The rivalry intensifies if the firms have similar market share, leading to a struggle for market leadership.

2. **Slow market growth:** It causes firms to fight for market share. In a growing market, firms are able to improve revenues simply because of the expanding market.

3. **High fixed costs:** It result in an economy of scale effect that increases rivalry. When total costs are mostly fixed costs, the firm must produce near capacity to attain the lowest unit costs. Since the firm must sell this large quantity of product, high levels of production lead to a fight for market share and results in increased rivalry.

4. **High storage costs or highly perishable products:** This cause a producer to sell goods as soon as possible. If other producers are attempting to unload at the same time, competition for customers intensifies.

5. **Low switching costs:** It increases rivalry. When a customer can freely switch from one product to another there is a greater struggle to capture customers.

6. **Low levels of product differentiation:** This is associated with higher levels of rivalry. Brand identification, on the other hand, tends to constrain rivalry.

7. **Strategic stakes:** These are high when a firm is losing market position or has potential for great gains. This intensifies rivalry.

8. **High exit barriers:** It place a high cost on abandoning the product. The firm must compete. High exit barriers cause a firm to remain in an industry, even when the venture is not profitable. A common exit barrier is asset specificity. When the plant and equipment required for manufacturing a product is highly specialized, these assets cannot easily be sold to other buyers in another industry.

9. **A diversity of rivals:** With different cultures, histories, and philosophies make an industry unstable. There is greater possibility for mavericks and for misjudging rival's moves. Rivalry is volatile and can be intense.

10. **Industry Shakeout:** A growing market and the potential for high profits induce new firms to enter a market and incumbent firms to increase production. A point is reached where the industry becomes crowded with competitors, and demand cannot support the new entrants and the resulting increased supply. The industry may become crowded if its growth rate slows and the market becomes saturated, creating a situation of excess capacity with too many goods chasing too few buyers. A shakeout ensues, with intense competition, price wars, and company failures.

(b) The actions can be taken by the Delta Pride Catfish in order to make them a powerful supplier are as follows:

1. The supplier group is dominated by a few companies and is more concentrated (few firms dominate the industry) than the industry it sells to. Suppliers selling to fragmented industries influence prices, quality, and terms. In the present case, the Delta Pride Catfish had formed a cooperative and constructing their own processing plant, which they supplied themselves.

2. The supplier group poses a credible threat of forward integration. This provides a check against the industry's ability to improve the terms by which it purchases. Delta Pride has now an opportunity to grow by including more value-added products with different features.

3. The supplier group is not obliged to contend with substitute products for sale to the industry. The power of even large, powerful suppliers can be checked if they compete with substitutes.

4. The supplier's product is an important input to the buyer's business. When such inputs are important to the success of the buyer's manufacturing process or product quality, the bargaining power of suppliers is high. The Catfish farmers had supplied their harvest to processing plants run by large agribusiness firms such as ConAgra and Farm Fresh. So these are the important input to run the buyer's business.

5. The supplier group's products are differentiated or it has built up switching costs for the buyer. Differentiation or switching costs facing the buyers cut off their options to play one supplier against another. The inputs supplied by the farmers to the agribusiness firms are important for the processing. As a result, there was a drop in market share of ConAgra from 35 percent to 11 percent, and Farm Fresh's market share fall by over 20 percent.

Question 2.

Industrial Credit & Investment Corporation of India (ICICI) was formed in 1955 by the initiative of the World Bank, the Government of India and representatives of Indian industry. In the 1990s, ICICI transformed its business from a development financial institution offering only project finance to a diversified financial services group offering a wide variety of products and services, both directly and through a number of subsidiaries and affiliates like ICICI Bank. Due to the changing business environment and after the adoption of liberalization, ICICI considered various corporate restructuring alternatives in the context of the emerging competitive scenario in the Indian banking industry. The managements of ICICI and ICICI Bank formed the view that the merger of ICICI with ICICI Bank would be the optimal strategic alternative for both the entities. Consequently, ICICI Bank was promoted in 1994 by ICICI Limited, an Indian financial institution, and was its wholly-owned subsidiary. In October 2001, the Board of Directors of ICICI and ICICI Bank approved the merger of ICICI and two of its wholly-owned retail finance subsidiaries, ICICI Personal Financial Services Limited and ICICI Capital Services Limited, with ICICI Bank. The below mentioned table gives details of all the mergers and amalgamations done by ICICI Bank.

Mergers by ICICI Bank Ltd. in India S. No.	Mergers by ICICI Bank Ltd. in India	Year of Merger
1.	SCICI	1996
2.	ITC Classic Finance Ltd.	1997
3	Anagram Finance	1998
4.	Bank of Madura Ltd.	2001
5.	ICICI Personal Financial Services Ltd	2002
6.	ICICI Capital Services Ltd.	2002
7.	Standard Chartered Grindlays Bank	2002
8.	Sangli Bank Ltd.	2007
9.	The Bank of Rajasthan Ltd. (BoR)	2010

Answer the following questions:

(a) Describe the various issues which are to be dealt with in Mergers. [4]

(b) There are three types of Merger. One of them is Conglomerate Merger. What is Conglomerate Merger? Describe the different types of Conglomerate Merger. State the reasons of Conglomerate Merger. Also state the benefits of the Conglomerate Merger. [2+3+1+1]

(c) What are the factors to be considered in case of merger and acquisition at pre-merger stage? What type of conclusion you can draw from the above case of merger of ICICI Bank? [2+2]

Answer:

(a) There are many issue of importance that has to be dealt with in mergers. These are:

1. **Strategic issues: -** Strategic issues relate to the unity of strategic interests between the buyer and seller firms. It is important to consider the extent to which a merger may lead to positive synergistic effects. A merger should ideally lead to the generation of strengths that would help the post merger organisation to achieve its objectives in a better manner.

2. **Financial issues: -** Financial issues relate to the valuation of the seller firm and the sources of financing for mergers to take place. Valuation involves assessing the value of the seller firm. For this purpose discounted cash flow (DCF) method and capital asset pricing method (CAPM) may be used.

   The other major financial consideration is the source of financing. Acquisition of shares through exchange of debt and equity is a method. Bank, stock markets, and financial institutions are also sources but are not encouraged to provide finance for mergers to take place.

3. **Managerial issues: -** Managerial issues in mergers relate to the problems of managing firms after the merger has taken place. It is important to note that the perception of how the management will take place after merger also matters and affects the process of the merger itself. Usually, mergers are followed by changes in staff and top managers. If the merger is threatening, it results in its opposition by groups of managers making the process of merger difficult.

4. **Legal issues: -** Legal issues in mergers relate to the provisions made in law for the purpose of mergers. In India, the provisions relating to mergers and amalgamations and other schemes are contained in the Companies Act, 1956.

(b) Conglomerate Merger: Conglomerate Merger is a type of combination, which a firm established in one industry combines with another firm in another unrelated industry. Conglomerate mergers are affected among firms that are in different or unrelated business activity. Firms that plan to increase their product lines carry out these types of mergers. Firms opting for conglomerate merger control a range of activities in various industries that require different skills in the specific managerial functions of research, applied engineering, production, marketing and so on. This type of diversification can be achieved mainly by external acquisition and mergers and is not generally possible through internal development. These types of mergers are also called concentric mergers.

Types of Conglomerate Merger: There are three types of Conglomerate Merger, such as:

1. **Financial Conglomerates:** These conglomerates provide a flow of funds to every segment of their operations, exercise control and are the ultimate financial risk takers. They not only assume financial responsibility and control but also play a chief role in operating decisions.

2. **Managerial Conglomerates:** Managerial conglomerates provide managerial counsel and interaction on decisions thereby, increasing potential for improving performance. When two firms of unequal managerial competence combine, the performance of the

combined firm will be greater than the sum of equal parts that provide large economic benefits.

3. **Concentric Companies:** The primary difference between managerial conglomerate and concentric company is its distinction between respective general and specific management functions. The merger is termed as concentric when there is a carry-over of specific management functions or any complementarities in relative strengths between management functions.

Reasons of Conglomerate Merger: There are several reasons as to why a company may go for a conglomerate merger. Among the more common reasons are adding to the share of the market that is owned by the company and indulging in cross selling. The companies also look to add to their overall synergy and productivity by adopting the method of conglomerate mergers.

Benefits of the Conglomerate Merger: There are several advantages of the conglomerate mergers. One of the major benefits is that conglomerate mergers assist the companies to diversify. As a result of conglomerate mergers the merging companies can also bring down the levels of their exposure to risks.

(c) The factors to be considered in case of merger and acquisition at pre-merger stage: The following factors can be considered in case of merger and acquisition at pre-merger stage:

- Financial position of transferor company
- Market Value
- Brand Value
- Communication Issues
- Share Holders & other stake holders' view
- Assets & Liabilities

Conclusion about merger of ICICI Bank: Mergers and acquisitions (M&As) are always considered as corporate events which helps an organization to create synergy and provide sustainable competitive advantage, but, simultaneously these sorts of corporate events have the potential to create severe personal trauma and stress which can result in psychological, behavioural, health, performance, and survival problems for both the individuals and companies, whether it is a bank or a non banking financial corporation, involved in it. It is evident from the case of ICICI Bank Ltd. that how an organization can become market leader by adopting some strategic tools like mergers and acquisitions. The post-merger integration process is a difficult and complex task. It comes along with long lists of activities and tasks that have to be fulfilled within a short time and partly with incomplete information (e.g. formation of new teams and departments). There are many opportunities to exploit and many decisions to take.

Question 3.

"An analysis of the strengths, weaknesses, opportunities and threats (SWOT) is very much essential for the business policy formulation." — How SWOT Matrix is used in the context of SWOT Analysis? State all the possible strategies which can be derived from the SWOT Matrix. Also state the criticisms which are associated with the SWOT Matrix. [3+4+3]

Answer:

SWOT Matrix: The relationships in a SWOT analysis are generally represented by a 2 x 2 matrix. The 'strengths' and 'opportunities' are both positive considerations. The 'weaknesses' and 'threats' are both negative considerations. The SWOT matrix is an important matching tool that helps managers in generating four types of strategies i.e. SO, WO, ST and WT. SWOT matrix is a conceptual framework for a systematic analysis for matching opportunities and threats that are external with strengths and weaknesses which are internal for the organization. When these four attributes combine, they result in four sets of different strategic alternatives. The SWOT matrix is shown as follows:

	Internal Strength (S)	**Internal Weaknesses (W)**
External Opportunities (O)	**SO Strategies**	**WO Strategies**
	Maxi - Maxi	Mini - Maxi
	Generate strategies that use strengths to take advantage of opportunities	Generate strategies that take advantage of opportunities by overcoming weaknesses
External Threats (T)	**ST Strategies**	**WT Strategies**
	Maxi - Mini	Mini - Mini
	Generate strategies that use strengths to avoid threats	Generate strategies for retrenchment, divestment and closure

Strategies derived from the SWOT Matrix: There are four strategies which can be discussed as follows:

- **SO Strategies:** The SO strategies try to improve the company's strengths relative to its environmental opportunities. These strategies use firm's internal strengths to take advantage of external opportunities. It is the aim of enterprises to move from other positions of the matrix to this one. When the firm faces a weakness, it strives to overcome it, making such weaknesses into strengths. When a major threat is faced by the firm, it will try to avoid such threat by focusing on opportunities.

- **WO Strategies:** The WO strategies will enable the firm to overcome weaknesses and focus to tap its opportunities. WO strategies are evolved to improve internal weaknesses by taking advantage of external opportunities. The firm with internal weaknesses in certain areas may overcome them by developing such competencies internally or acquire from outside to take advantage of opportunities available in the external environment.

- **ST Strategies:** The ST strategies try to gear up the internal strengths to reduce the vulnerability of external environmental threats. The basic objective of these strategies is to maximize the advantage of internal strengths while minimizing the external environmental threats.

- **WT Strategies:** The WT strategies are the defensive strategies used to counter the internal weaknesses as well as external threats. In this situation retrenchment, joint ventures and liquidation strategies need to be evolved to up or out.

The criticisms which are associated with the SWOT Matrix: Although SWOT matrix is widely used as a strategic planning tool and used to generate several strategic alternatives but the SWOT matrix is criticized for the following reasons:

(i) It does not show how to achieve a competitive position.

(ii) It is a static assessment of the organization on a particular time.

(iii) It leads the firm to overemphasize a single internal or external factor in formulating strategies. To analyze the business situation, a strategist needs to prepare several SWOT matrixes for different points of time.

Question 4.
"BCG Growth-Share Matrix is developed to analyze the problem of resource deployment among the business units or products of multi-business firms." — Describe BCG Growth-Share Matrix on the basis of the significance of its four cells – Stars, Question Marks, Cash Cows and Dogs. List out the problems which can be found in using this matrix. [6+4]

Answer:
BCG Growth-Share Matrix: Companies that are large enough to be organized into strategic business units face the challenge of allocating resources among those units. In the early 1970's the Boston Consulting Group developed a model for managing a portfolio of different business units (or major product lines). BCG matrix is developed on the basis of two factors: (a) Relative market share, and (b) Business growth rate. These two factors are used to plot all the business (products) in which the firm is involved. It can be depicted by the following diagram:

		Relative market Share	
		High	Low
Market Growth Rate	High	Stars	Question Marks
	Low	Cash Cows	Dogs

In the above figure the vertical axis measure the annual growth rate of the market and the horizontal axis shows the relative market share of the firm. Each of these dimensions is divided into two categories of high and low, making up a matrix of four cells; and the products are graphed as Stars, Question Marks, Cash Cows and Dogs in these four cells.

Resources are allocated to business units according to where they are situated on the grid as follows:

High Growth-High Market Share: Stars — Star represents those products, which have successfully passed the introduction stage and are on the path of growth. They are self sufficient for cash requirements i.e. cash generated is almost equal to cash used. Stars are the products that are rapidly growing with large market share. They earn high profits but they require substantial investment to maintain their dominant position in a growing market. Stars are usually profitable and would be the future cash cows. Since the stars are growing rapidly and have the advantage of already having achieved a high share of the market, they provide the firms best profit and growth opportunities. Stars are leaders in the business and generate large amounts of cash. The stars will entail huge cash outflows to maintain the market share and to ward off competition. Star is a market leader (i.e. high market share) in a high growth market. When the market growth rate slows, stars become cash cows.

Low Growth-High Market Share: Cash Cows — A cash cow produces a lot of cash for the company. The company does not have to finance for capacity expansion as the market's growth rate has slowed down. It enjoys economies of scale and higher profit margins. When a market's annual growth rate falls, a star becomes a cash cow if it still has the largest relative market share. The important strategic feature of cash cows is that they are generating high cash returns, which can be used to finance the stars or for use elsewhere in the business. Cash cows have a strong market position in the industry that has matured. In comparison with the position of the star performer, cash cows can expect little serious competition because of their relatively low expected industry growth rate. Cash cows are units with high market share in a slow-growing industry. Cash cows are ideal for providing the funds needed to pay dividends and debts, recover overheads and supply of funds for investment in other growth areas. Cash cows are established, successful and need less investment to maintain their market share.

High Growth-Low Market Share: Question Marks — Question marks are the products/ businesses whose relative market share is low but have high growth potential. The area question mark identifies those products which are at introduction stage in the market and the cash generated is less than cash used for these products. Their competitive position is weak but they work for long-term profit and growth. These products require additional funds to improve their market share so that the question mark becomes a star. If no improvement is made in market share, question marks will absorb large amount of cash and later, as the growth stops, turn into dogs. If the question mark business becomes successful, it becomes a star. A question mark denotes a new entrant into the market and growth prospects will be tremendous but will have a very low market share and its success or failure cannot be judged easily. Question marks are yet to establish their competitive viability although they usually operate in a rapidly growing market. Therefore, they require huge cash outflow. Strategy must be evolved whether to try for a star or hold the current position or divest. Question marks must be analyzed carefully in order to determine whether they are worth the investment required to achieve market share.

Low Growth-Low Market Share: Dogs — Dogs describe company business that has weak market shares in low-growth markets. Products with low market share and limited growth potential are referred to as dogs. It is better to phase them out rather than continue with them. Dogs should be allowed to die or should be killed off. Although they will show only a modest net cash outflow or even a modest cash inflow, they are cash traps. They provide a poor return on investment and not enough to achieve the organization's target rate of return. These units are typically 'break-even', generating barely enough cash to maintain the market share. They depress the company's overall 'return on assets ratio', used by the investors, financial institutions and banks in judging how well the company is being managed. Since Dogs hold little promise for the future and may not even pay their own way, they are prime candidates for divestiture. The only way for dog is to increase its rate of sales growth by taking sales away from competitors.

Problems in using BCG Matrix — The BCG matrix is criticized for the following reasons:

(i) It does not talk about profitability at all.
(ii) It fails to correctly define market share and market growth.
(iii) It ignores competition factors and trends in markets.
(iv) It considers only two factors viz., market growth rate and market share, ignoring all other factors.
(v) It does not say how long a product will continue in each phase.
(vi) It fails to consider globalization factor, where markets are not limited to a particular area or place.

(vii) It overlooks other important strategic factors that are a function of the external competitive environment.

(viii) It fails to consider that, a business with a low market share can be profitable too.

Question 5.

(a) Write about the four perspectives of Balanced Scorecard. [4]

(b) What is Strategic Planning? State the features of Strategic Planning. Also state the usefulness of Strategic Planning. [1+2+3]

Answer:

(a) Balanced scorecard is a framework of financial and non financial measures that can be made ahead of the traditional financial measures. The four perspectives associated with it are as follows:

1. **Financial** — satisfying the stakeholders in the company - owners, employees, suppliers. The objectives of this perspective would be to achieve a certain level of profitability, or growth.
2. **Customer or Market** — satisfying the customers such that they buy product and services to support the financial perspective. e.g. increase customer satisfaction, introduce a new product.
3. **Internal Business Processes** — supporting the Financial and Customer perspectives through having appropriate and well operated processes or procedures e.g. the sales process, the product implementation process etc.
4. **Learning, Innovation and Growth** — supporting the Financial, Customer and Internal Business Process perspectives through having the ability to change, improve and innovate through the acquisition of new knowledge, skills and technology.

(b) Strategic Planning: Strategic planning refers to the formulation of a unified, comprehensive and integrated plan to get the strategic advantages by challenging the environment. It is concerned with appraising the environment in relation to the firm, identifying the strategies for the future with the best possible knowledge of their probable outcome. Thus strategic planning provides the framework within which future activities of firm are expected to be carried out.

Features of Strategic Planning: Strategic planning has the following features —

(i) Strategic planning is a forward-looking exercise, which determines the future condition and attitude of the firm with special reference to its product market, profitability, size, rate of innovation etc.

(ii) It is a systematic and disciplined exercise to formulate two types of plans—operating and strategic plan. The different units in an organisation implement the operating plans.

(iii) Strategic plans are implemented through projects.

(iv) It relates to the enterprise as a whole or to particular unit.

Usefulness of Strategic Planning: The usefulness of Strategic Planning are as follows —

(i) According to different research studies, strategic planning contributes positively to the performance of enterprise and predicts better outcomes and isolates key factors of the firm.

(ii) It is concerned with the allocation of resources to product market opportunities and concerned to realise the company's profit potential through selected strategies.

(iii) It measures the strengths and weaknesses of the firm.

(iv) It selects the optimum strategy from the alternatives considering the interest of the firm, personal values of top management and social responsibility of the firm.

(v) With fast changing product market condition, technology economic condition the strategic planning is the only means by which future opportunities and problems can be anticipated by company executives.

(vi) It enables executives to provide necessary direction for the firm, to take full advantage of new opportunities and to minimise the risk.

(Section-B)

Question No. 6 is Compulsory. Answer any two questions from the rest.

Question 6.

(a) ABC Ltd. supports the concept of Life Cycle Costing for new investment decisions covering its engineering activities. The final side of this philosophy is now well established and its principles extended to all other areas of decision-making.

The company is to replace a number of its machines and the Production Manager is torn between the Exe Machine, a more expensive machine with a life of 12 years, and the Wye machine with an estimated life of 6 years. If the Wye machines chosen it is likely that it would be replaced at the end of 6 years by another Wye machine. The pattern of maintenance and running costs differs between the two types of machine and relevant data are shown below.

	Exe	**Wye**
Purchase price	**₹19,000**	**₹13,000**
Trade – in value	**3,000**	**3,000**
Annual repair costs	**2,000**	**2,600**
Overhaul costs	**(at year 8) 4,000**	**(at year 4) 2,000**
Estimated financing costs averaged over machine life	**10% p.a.**	**10% p.a.**

You are required to:

Recommend, with supporting figures, which machine to purchase, stating any assumptions made. **[6]**

Answer:

Machine Exe – Life 12 years

	Year	**Cost**	**Discount Factor**	**Discounted Cost**
Purchase price	0	₹ 19,000	1.00	₹19,000
Overhead cost	8	4,000	0.47	1,880
Trade-in-value	12	(3,000)	0.32	(960)
Annual repair cost	1-12	2,000	6.81	13,620
				33,540

Annualised equivalent ₹ 33,540 ÷ 6.81 = ₹ 4,925

Machine Wye – Life 6 years

	Year	Cost	Discount Factor	Discounted Cost
Purchase price	0	₹ 13,000	1.00	₹ 13,000
Overhead cost	4	2,000	0.68	1,360
Trade-in-value	6	(3,000)	0.56	(1,680)
Annual repair cost	1—6	2,600	4.36	11,336
				24,016

Annualised equivalent ₹ 24,016 ÷ 4.36 = ₹ 5,508

Recommendation: Purchased Exe Machine

Assumptions:

(i) Same performance, capacity and speed.

(ii) No inflation.

(iii) 12-year estimates are as accurate as 6-year estimates.

(iv) Cash flow at the year end.

(b) List out the benefits of Business Process Outsourcing. [4]

Answer:

Benefits of Business Process Outsourcing

Organizations can gain a number of benefits by outsourcing or using a business process outsourcing company.

- **Saving money:** Most companies that provide BPO services are able to carry out the work for considerably less. This is generally achieved through having lower operational costs themselves because labour is less expensive, social costs are lower and they don't have to provide benefits to their workers. Typically, BPO should save companies in the region of 40-50%.
- **Quality of service:** It is also possible in some instances to improve the quality of service through being able to have more resources and better qualified personnel.
- **Productivity improvements:** It allows executives and management to focus on critical functions of the business. For example, it will allow expensive and skilled personnel to focus on sales and marketing strategy rather than operational issues such as preparing a VAT return or payroll. You normally find that executives spend 80% of their time in management of day-to-day issues and only 20% on strategy. Outsourcing certain processes can in many instances reverse this statistic. Giving management time to carry out other functions can enable an organization to become more profitable and find other ways of generating income.
- **Access to a wider array of skills:** BPO enables an organization to access different skills sets and expertise that their company would not normally have access to. Many BPO companies have access to skills and intellectual assets that generally take several years to generate.
- **Allocation of resources:** Organizations that use BPO can effectively reallocate personnel into areas that will have a positive impact upon other projects, such as expansion or opening offices in new territories.
- **Operational expertise:** BPO Companies are able to provide the relevant expertise that most companies don't have access to or would be difficult and expensive to develop in-house.

Question 7.

(a) The performance of Company at two levels of operations during a financial year is as under –

Capacity utilization	50%	60%
Direct Materials	₹ 1,00,000	₹ 1,20,000
Direct Wages	₹ 1,60,000	₹ 1,92,000
Production Overheads	₹ 6,00,000	₹ 6,50,000
Administration Overheads	₹ 1,20,000	₹ 1,20,000
Selling Overheads	₹ 2,20,000	₹ 2,40,000

The Company produced 12,000 units at 60% capacity utilization. The profit margin is 20% on sales.

During the next financial year, the Company is poised for increasing the capacity utilization to 75%. The Company desires to have the same profit margin as in the last financial year. The following percentage changes in costs are expected to be applicable in the next year.

- **Direct Material prices will increase by 5%**
- **Direct Wage rates will increase by 3%**
- **Direct Labour efficiency will fall by 4%**
- **Variable Production Overheads will increase by 6%**
- **Fixed Production Overheads will increase by 10% up to 80% capacity utilization and by 22% thereafter.**
- **Variable Selling Expenses will increase by 10%.**
- **Fixed Selling Expenses will increase by 8%.**
- **Administrative Overheads will increase by 15%.**

The Company expects to receive an export order for 3,000 units while operating at 75% capacity utilization. The anticipated export price offer is ₹ 92 per unit.

Required:

- **Prepare a flexible budget for the next year and determine the cost per unit of output at the capacity utilization levels of 75% and 90%.**
- **Calculate the sales value and profit for the next year at 75% capacity.**
- **Advise Management as to whether or not the export orders at the price of ₹ 92 per unit should be accepted. [4+1+1+2+2]**

Answer:

1. Analysis of Semi-Variable OH into fixed and variable elements

Particulars	50% Capacity	60% Capacity	Difference
Production Quantity	10,000 units	12,000 units (given)	2,000 units
Total Production OH	₹ 6,00,000	₹ 6,50,000	₹ 50,000
Total Selling OH	₹ 2,20,000	₹ 2,40,000	₹ 20,000

Hence, Variable POH = Change in POH ÷ Change in Output
= ₹ 50,000 ÷ 2,000 units
= ₹ 25 per unit.
Fixed POH = ₹ 6,00,000 – (10,000 units x ₹ 25) = ₹ 3,50,000
Also, Variable SOH = Change in SOH ÷ Change in Output
= ₹ 20,000 ÷ 2,000 units
= ₹ 10 per unit.
Fixed SOH = ₹ 2,40,000 – (12,000 units x ₹ 10) = ₹ 1,20,000

2. Flexible budget for next year

Particulars	Cost at 60%	Increase	Revised at 60%	75%	90%
Sales Quantity in Units	12,000		12,000	15,000	18,000
Materials	1,20,000	5%	1,26,000	1,57,500	1,89,000
Labour	1,92,000	3%	(= 1,97,760)		
	Efficiency fall	4%	2,06,000	2,57,500	3,09,000
			(1,97,760÷96%)		
Production Overheads					
Variable	3,00,000	6%	3,18,000	3,97,500	4,77,000
Fixed	3,50,000	10%	3,85,000	3,85,000	(22%)4,27,000
AOH Fixed	1,20,000	15%	1,38,000	1,38,000	1,38,000
SOH Variable	1,20,000	10%	1,32,000	1,65,000	1,98,000
Fixed	1,20,000	8%	1,29,600	1,29,600	1,29,600
Total Costs				16,30,100	18,67,600
Cost per unit				**108.67**	**103.75**

Note: Revised Labour Cost at 60% capacity = (₹ 1,92,000 + 3% thereon) ÷ 4% = ₹ 2,06,000

3. Computation of sales Value at 75% Capacity:

Since Profit is 20% on Sales = 1/5 on Sales = ¼ on Cost.

Sales Value at 75% Capacity level = ₹16,30,100 + ₹ 16,30,100 x ¼ = ₹ 20,37,625

Profit at 20% thereon = ₹ 20,37,625 x 20% = ₹ 4,07,525

4. Incremental cost of 3,000 units = (16,30,100 – 18,67,600) = ₹ 2,37,500

Average Incremental cost per unit = ₹ 2,37,500 / 3,000 units = ₹ 79.17 per unit.

Since the export price offered ₹ 92 is more than the incremental costs per unit, it may be accepted.

Additional profit = (₹ 92 x 3000) – ₹ 2,37,500 = ₹ 38,500.

(b) A Company using a detailed system of standard costing finds that the cost of investigation of variances is ₹ 20,000. If after investigation an out of control situation is discovered, the cost of correction is ₹ 30,000. If no investigation is made, the present value of extra cost involved is ₹ 1,50,000. The probability of the process being in control is 0.82 and the probability of the processes being out of control is 0.18. You are required to advice:

(i) Whether investigation of the variances should be undertaken or not;

(ii) The probability at which it is desirable to institute investigation into variances. [3+4]

Answer:

(i) Whether investigation should be undertaken or not:

Situation	Cost (a)	Probability (b)	Effective Cost (a) × (b)
Process under control	20,000	.82	16,400
Process out of control (20,000+30,000)	50,000	.18	9,000
Total cost to investigate:			25,400

Cost of not to investigate:

Extra cost of correction × Probability of processing being out of control

= 1,50,000 × .18

= 27,000

Since cost when investigation is undertaken is less than the cost of no investigation it should be done.

(ii) Probability at which Investigation into Variance should be instituted

Finding out the probability at which both costs are equal.
Let x be the probability of process being in control.
Therefore,
(1-x) is probability of process being out of control.

Process	Cost of Investigation		Effective Cost	Cost of No Investigation
	Cost (1)	Probability (2)	(1) × (2)	
In Control	20,000	x	20,000x	1,50,000 × (1-x)
Out of Control	50,000	1-x	50,000 – 50,000x	
Net Cost			50,000-30,000x	1,50,000-1,50,000x

Equating two cost:
$50,000 - 30,000x = 1,50,000 - 1,50,000x$
⇨ $1,20,000x = 1,00,000$
or, $x = 0.833$.
At the probability level of 0.83 (Process-in-control), both costs are equal. As this probability level decline, the cost of not investigating will be greater than cost of investigating. If probability level is anywhere below 0.83, investigation should be instituted.

(c) XYZ Ltd. has been approached by a customer who would like a special job to be done for him, who is willing to pay ₹ 22,000 for it. The job would require the following materials.

Material	Total units required	Units already in stock	Book value of units in stock	Realizable Value	Replacement Cost
P	**1,000**	**0**	**-**	**-**	**₹ 6 p.u**
Q	**1,000**	**600**	**₹ 2 p.u**	**₹ 2.50 p.u**	**₹ 5 p.u**
R	**1,000**	**700**	**₹ 3 p.u**	**₹ 2.50 p.u**	**₹ 4 p.u**
S	**200**	**200**	**₹ 4 p.u**	**₹ 6.00 p.u**	**₹ 9 p.u**

Material Q is used regularly by XYZ Ltd. and if units of Q are required for this job, they would need to be replaced to meet other production demand.
Material R and S are in stock as the result of previous over – buying and they have a restricted use. No other use could be found from material R, but the units of material S could be used in another job as substitute for 300 units of material T, which currently costs ₹ 5 per unit (of which the Company has no units in stock at the moment).Compute the Relevant Costs of Materials. [3]

Answer:

Computation of Relevant Cost of Material

Material	Nature and Computation	₹
P	To be purchased – Out of Pocket Cost is relevant – 1,000 units × ₹6	6,000
Q	Regularly used – Replacement Cost is relevant – 1,000 units × ₹5	5,000
R	700 units already in stock – NRV ₹ 2.50 is relevant as opportunity cost. 300 units to be purchased – Out of Pocket Cost ₹ 4 is relevant	1,750 1,200
S	Realisable Value of S 200 × ₹6 = ₹ 1,200 Substitution Benefit 300 × ₹ 5 = ₹ 1,500 Highest of Opportunity Costs is relevant.	1,500
	Total Relevant Cost of Materials	15,450

Question 8.

(a) State the reasons for implementation of Enterprise Resource Planning (ERP). [5]

Answer:

Reasons for the Implementation of ERP by Companies

1. **Improve a company business performance**: ERP automates the tasks involved in performance a business process – such as order fulfilment which involves taking an order from a customer, shipping it and billing for it. With ERP, when a customer service representative takes an order from a customer, he or she has all the information necessary to complete the order (the customer's credit rating and order history, the company's inventory levels and the shipping dock's trucking schedule). Everyone else in the company sees the same computer screen and has access to the single database that holds the customer's new order. When one department finishes with the order is at automatically routed via the ERP system to the next department. To find out where the order is at any point, one needs only to log into the ERP system and track it down. With luck, the order process moves like a bolt of lightning through the organisation, and customers get their orders faster and with fewer errors than before. ERP can apply that same magic to the other major business processes, such as employee benefits or financial reporting.
2. **Standardize manufacturing processes** : Manufacturing companies --- especially those with an appetite for mergers and acquisitions --- often find that multiple business units across the company make the same widget using different methods and computer systems, Standardizing those processes and using a single, integrated computer system can save time, increase productivity & reduce headcount.
3. **Integrate Financial data**: As the CEO tries to understand the company's overall performance, he or she may find many different versions of the truth. Finance has its own set of revenue numbers, sales has another version, and the different business units may each have their own versions of how much they contributed to revenues. ERP creates a single version of the truth that cannot be questioned because everyone is using the same system.
4. **To standardise HR information** : Especially in companies with multiple business units, HR may not have a unified, simple method for tracking employee time and communicating with them about benefits and services. ERP can fix that.
5. **Reduction in cycle time:** Cycle time is the time between receipt of the order and delivery of the product. ERP systems are helpful in both make-to -order and make-to-stock situations. In both cases, cycle time can be reduced by the ERP systems, but the reduction will be more in the case of make-to-order systems. ERP packages go a long way in reducing the cycle times due to automation achieved in material procurement, production planning and the efficiency achieved through the plant maintenance and production systems of the ERP packages.
6. **Better Customer Satisfaction:** Customer satisfaction means meeting or exceeding Customers requirements for a product or service. The customer could get technical support by either accessing the company's technical support knowledge base or by calling the technical support. Since all the details of the product and the customer are available to the person at the technical support department, the company will be able to better support the customer. All this is possible because of use of latest developments in information technology by the ERP systems.
7. **Improved Supplier Performance:** The Quality of the raw materials or components and the capability of the vendor to deliver them on time are of critical importance for the success of any organisation. For this reason, organisations chooses its supplier or vendors very carefully and monitor their activities very closely. To realise these benefits, corporations rely heavily on supplier management and control systems to help, plan, manage and control the complex process associated with global supplier partnerships.

(b) A Company has two Divisions, viz., LD and KD. LD operates at full capacity and KD operates at 50% capacity.

LD produces two products, LX and LY using the same labour force for each product. The direct wage rate per production hour is ₹ 5. During the next year, its budgeted capacity of 42,000 direct labour hours involves a commitment to sell 6,000 kg. of LY. The balance capacity will be used for the production of LX. Cost data are:

	LX ₹/Kg	LY ₹/Kg
Direct materials	**36**	**28**
Direct wages	**30**	**20**

The Company's overheads amount to ₹ 7,56,000 per annum relating to LX and LY in proportion to other direct wages. At full capacity ₹ 4,20,000 of this overhead is variable. LD prices its products with 50% mark-up on its total costs.

KD wishes to buy 2,000 kg. of LX from LD for being processed into KX to be sold at ₹ 300 per kg. The processing materials and wage cost are ₹ 30 per kg. and the variable overheads amount to ₹ 4 per kg. The fixed costs amount to ₹ 1,00,000 per annum.

Prepare a report showing the profitability of LD and KD and the Company as a whole for each of the following transfer price methods:

(i) LD transfers LX at a price applicable to outside customers on the basis of total cost.

(ii) LD transfers LX at a price based on total costs less credit for selling and distribution expenses of ₹ 4 per kg. which will not be incurred in respect of the sale of KD.

(iii) LD transfers LX at a price based on marginal cost as reduced by ₹ 4 per kg. of selling and distribution expenses.

(iv) LD manufactures the quantity of LX required by KD by employing overtime payable at double the normal wage rate and transfers at marginal cost less ₹ 4 per kg. being selling and distribution costs not incurred in respect of sale to KD. LD sells the entire regular production to outside customers at the usual price. **[3+3+3+3+3=15]**

Answer:

For the budgeted level of activities and expenses of LD various costs and prices have been determined as follows:

Total Overhead per year	₹ 7,56,000
Less: Variable Overhead	4,20,000
Fixed Overhead per year	3,36,000

Variable Overhead per hour = ₹ 4,20,000 ÷ 42,000 = ₹ 10 per hour

Fixed Overhead per hour = ₹ 3,36,000 ÷ 42,000 = ₹ 8 per hour

The costs and selling prices of products of LD for normal sale to outside parties will be as under:

(₹ per kg.)

	LX	**LY**
Direct materials	36	28
Direct wages	30	20
Variable Overhead		
₹ 10 x 6 hrs.	60	
₹ 10 x 4 hrs.		40
Total Variable costs	126	88
Fixed Cost:		
₹ 8 x 6 hrs	48	
₹ 8 x 4 hrs		32
Total Costs	174	120
Add: Mark – up 50%	87	60
Selling Price	261	180

Committed production of LY of 6,000 kg. would involve labour hours of 24,000. i.e., 6,000x4hrs.
Balance labour hrs. for production of LX = 42,000 - 24,000 = ₹ 18,000 hrs
Production of LX = 18,000 ÷ 6 = 3,000 kg.
Cost estimate of KX, if KD purchase LX from LD at normal prices:

Cost of LX	261
Processing materials and wage costs	30
Variable overheads	4
Total variable Costs	295

Profit Statements of LD and KD

(i) Transfer price based on total cost

LD	₹	KD	₹
Sales LX 3,000 x ₹ 261	7,83,000	Sales KX	
LY 6,000 x ₹ 180	10,80,000	2,000 kg. x ₹ 300	6,00,000
Total sales	18,63,000		
Variable cost		Variable Cost	
LX 2,000 x ₹ 122*	2,44,000	2,000 x ₹ 295	5,90,000
1,000 x 126	1,26,000		
LY 6,000 x 88	5,28,000		
Total variable Cost	8,98,000		
Fixed Cost	3,36,000	Fixed Cost	1,00,000
Total Cost	12,34,000	Total cost	6,90,000
Profit	6,29,000	Loss	(90,000)

Total Profit for the company ₹ 6,29,000 – 90,000 = ₹ 5,39,000
*₹ 126 – ₹ 4 (selling expenses will not be incurred in case sale to KD)

(ii) Transfer Price based on total cost after adjustment for selling expenses.

LD	₹	KD	₹
Sales LX 2,000 x ₹ 257 @	5,14,000	Sales 2,000 x ₹ 300	6,00,000
1,000 x 261	2,61,000		
LY 6,000 x 180	10,80,000	Total costs [(6,90,000 – (4 x 2000)]	6,82,000
Total sales	18,55,000		
Less: Cost as above	12,34,000		
Profit	6,21,000		82,000
		Loss	

Total Profit to the company = ₹ 6,21,000 – 82,000 = ₹ 5,39,000
@ ₹ 261 – ₹ 4, i.e. selling expenses not incurred in case of sale to KD.

(iii) Transfer price based on marginal cost after adjustment for selling expenses.

LD	₹	KD	₹
Sales LX 2,000 x ₹ 122	2,44,000	Sales KX 2,000 x ₹ 300	6,00,000
1,000 x ₹ 261	2,61,000		
LY 6,000 x ₹ 180	10,80,000	Less variable cost:	
	15,85,000	2,000 x (122 + 30 + 4)	3,12,000
Less: Total costs as above	12,34,000	Fixed	1,00,000
Profit	3,51,000	Total Cost	4,12,000
		Profit	1,88,000

Total profit for the company = ₹ 3,51,000 + 1,88,000 = ₹ 5,39,000

(iv) Manufacture of LX by using overtime and transfer price based on adjusted marginal cost.

LX	₹	KD	₹
Sales LX		Sales 2,000 x ₹ 300	6,00,000
2,000 x (₹126 + 30 – 4)	3,04,000		
3,000 x ₹ 261	7,83,000	Variable Cost:	
LY 6,000 x ₹ 180	10,80,000	2,000 x ₹ (152 +30 + 4)	3,72,000
Total sales	21,67,000		
Variable Costs:			
LX – 2,000 x ₹ 152	3,04,000		
3,000 x 126	3,78,000		
LY – 6,000 x ₹ 88	5,28,000	Fixed Costs	1,00,000
	12,10,000	Total cost	4,72,000
Fixed Costs	3,36,000		
Total Cost	15,46,000		
Profit	6,21,000		1,28,000

Total profit for the company = ₹ 6,21,000 + 1,28,000 = ₹ 7,49,000

Question 9.

(a) You are the management accountant of publishing and printing company which has been asked to quote for the production of programme for the local village fair. The work would be carried out in addition to the normal work of the company. Because of existing commitments, some weekend working would be required to complete the printing of the programme. A Trainee Accountant has produced the following cost estimate based upon the resources required as specified by the production manager:

Direct material	**- Paper (book value)**	**₹ 5,000**
	- Inks (purchase price)	**2,400**
Direct labour	**- Skilled 250 hours @ ₹ 4.00**	**1,000**
	- Unskilled 100 hours @ ₹ 3.50	**350**
Variable overhead	**350 hours @ ₹ 4.00**	**1,400**
Printing press depreciation	**200 hours @ ₹ 2.50**	**500**
Fixed production costs	**350 hours @ ₹ 6.00**	**2,100**
Estimating department cost		**400**
		13,150

You are aware that considerable publicity could be obtained for the company if you are able to win this order and the price quoted must be very competitive.

The following notes are relevant to the cost estimate above:

(i) The paper to be used is currently in stock at a value of ₹ 5,000. It is of an unusual colour which has not been used for some time. The replacement price of the paper is ₹ 8,000, whilst the scrap value of that in stock is ₹ 2,500. The production manager does not foresee any alternative use for the paper if it is not used for the village fair programmes.

(ii) The inks required are not held in stock. They would have to be purchased in bulk at a cost of ₹ 3,000. 80% of the ink purchases would be used in printing the programmes. No other use in foreseen for the remainder.

(iii) Skilled direct labour is in short supply, and to accommodate the printing of the programmes. 50% of the time required would be worked at weekends for which a premium of 25% above the normal hourly rate is paid. The normal hourly rate is ₹ 4.00 per hour.

(iv) Unskilled labour is presently under-utilised, and at present 200 hours per week are recorded as idle time. If the printing work is carried out at a weekend, 25 unskilled hours would have to occur at this time, but the employees concerned would be given two hours time off (for which they would be paid) in lieu of each hour worked.

(v) Variable overhead represents the cost of operating the printing press and binding machines.
(vi) When not being used by the company, the printing press is hired to outside companies for ₹ 6.00 per hour. This earns a contribution of ₹ 3.00 per hour. There is unlimited demand for this facility.
(vii) Fixed production costs are those incurred by and absorbed into production, using an hourly rate based on budgeted activity.
(viii) The cost of the estimating department represents time spent in discussions with the village fair committee concerning the printing of its programme.

Requirements:

1. **Prepare a revised cost estimate using the opportunity cost approach, showing clearly the minimum price that the company should accept for the order. Give reasons for each resources valuation in your cost estimate.**
2. **Explain why contribution theory is used as a basis for providing information relevant to decision making.**
3. **Explain the relevance of opportunity costs in decision-making. [3+2+2=7]**

Answer:

Revised Cost Estimate

1. Direct materials:		
- Paper	₹ 2,500	
- Ink	3,000	5,500
2. Direct labour (Skilled):		
Normal (250 hrs. x ₹ 4)	₹ 1,000	
Overtime (125 hrs. x Re.1)	125	1,125
3. Variable overhead (350 hrs. x ₹ 4)		1,400
4. Printing (200 hrs × ₹ 3)		600
Revised cost estimate		8,625

Working Notes:

(i) With no alternative use, the paper would not be replaced; the alternative, therefore, being to scrap the stock receiving proceeds of ₹ 2,500.

(ii) The surplus ink could not be used or sold and therefore the whole cost of the ink purchased should be charged to the cost of the programme.

(iii) The direct employees are currently usefully employed; therefore, their wage cost is being recovered from an existing customer. Before, transferring them to the work on the programme, the ability of the programme work to bear this cost must be determined.

(iv) The overtime premiums are directly caused by the programme work, which should be able to bear this additional cost.

(v) There is no additional cost associated with the employment of the unskilled labour.

Current idle time	200 hrs
Printing work	75 hrs (No additional cost)
	125
Week- end work	25 hrs
Paid time off	50 hrs

The 50 hrs of paid time off is more than covered by the 125 hours of idle time, which is also paid for and, therefore, there is no additional cost.

(vi) Variable overhead is the incremental cost.

(vii) The variable overhead and other variable costs associated with running the printing press have been separately dealt with. The additional recovery required is, therefore, the lost contribution associated with 200 printing press hours.

(viii) Fixed production overheads are not associated with incremental cash flows, and therefore should be ignored.

1. The cost of estimating time is a small cost, since it has already been incurred. It does not involve incremental cash flow. Therefore, it has been ignored.

2. In short-term decision making, resources usage is best measured by using 'variable cost' which change in proportion to changes in output. When variable cost is matched with the sales revenue with which it is associated, the resulting difference or contribution gives a good indication of the expected benefit to the organisation of any course of action. If fixed costs are-unaffected by a decision, contribution will be close approximation of cash flow and, therefore, it is a very real figure which may also be usefully used as a basis for ranking alternatives where limiting factors are involved.

3. For evaluating the economic benefit derived from a product, it is necessary to match the revenue generated with the cost incurred. Opportunity cost represents the benefit foregone for taking one course of action rather than alternative. It gives a measure of sacrifice made in order to generate income. Conventional contribution approach normally extracts variable costs from the internal costing records (i.e., stock accounts, etc.). Opportunity costs may be derived from internal or external sources depending on such factors as whether there are alternative uses for internal resources consumed and whether, if used, they would be replaced.

(b) A small project is composed of seven activities, whose time estimates are listed below. Activities are identified by their beginning (i) and ending (j) node numbers:

Activity	Estimated durations (in days)		
(i-j)	Optimistic	Most likely	Pessimistic
1-2	2	2	14
1-3	2	8	14
1-4	4	4	16
2-5	2	2	2
3-5	4	10	28
4-6	4	10	16
5-6	6	12	30

(i) Draw the project network.

(ii) Find the expected duration and variance for each activity, what is the expected project length?

(iii) If the project due date is 38 days, what is the probability of meeting the due date?

Given:

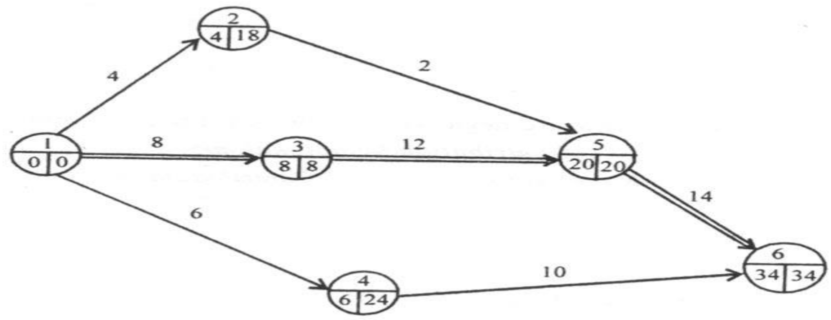
Z	0.50	0.67	1.00	1.33	2.00
P	0.3085	0.2514	0.1587	0.0918	0.0228

[4+1+1+2+2=10]

Answer:

Task	Duration (in days)			Mean $\left(\frac{a+4m+b}{6}\right)$	$S^2 = \left(\frac{b-a}{6}\right)^2$
	Optimistic (a)	Most likely (m)	Pessimistic (b)		
1-2	2	2	14	4	$2^2 = 4$
1-3	2	8	14	8	$\rightarrow 2^2 = 4$
1-4	4	4	16	6	$2^2 = 4$
2-5	2	2	2	2	$0^2 = 0$
3-5	4	10	28	12	$\rightarrow 4^2 = 16$
4-6	4	10	16	10	$\rightarrow 2^2 = 4$
5-6	6	12	30	14	$\rightarrow 4^2 = 16$
					36

(i)



The critical path is 1→ 3 → 5 → 6

(ii) The expected duration of the project=8+12+14+=34 days
Variance of project length is σ^2 = 4+16+16=36
σ = 6
Desired duration = 8 days earlier than expectation
= 34 – 8 = 26 days

$$Z = \frac{\text{Desired duration- Expected duration}}{\sqrt{\text{Variance or } \sigma}}$$

$$= \frac{26 - 34}{6} = \frac{-8}{6} = -1.33$$

Total area=0.0918 or 9.18%
(It is also given in the question.)

(iii) When desired duration is 38 days:

$$Z = \frac{38 - 34}{6} = \frac{4}{6} = 0.67$$

As per information given in question, probability of meeting the date is 0.2514 or 25.14%.

(c) Write two differences between Lean Accounting and Traditional Standard Costing. Where does Lean Accounting Apply? [2+1]

Answer:

Contrasting Lean Accounting and Traditional Standard Costing		
Lean Accounting	Traditional Standard Costing	Why is this important for Lean
Quick, simple and timely	Complex and wasteful process	FLOW: Frequent and simple value stream income statements create much better control.
Clear and easy to understand	Difficult for people to understand	Empowerment: Information people can understand empowers those people for Lean improvement and growth.

As with most lean methods Lean Accounting was developed to support manufacturing companies, and most of the implementation of Lean Accounting has been within manufacturing organizations. Now that lean methods are moving into other industries like financial services, healthcare, government, and education there are some initial examples of the application of Lean Accounting in these industries.