Paper 15- Business Strategy & Strategic Cost Management

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

Section A
Answer Question No. 1 which is compulsory and Carries 20 Marks.

1.(a) Describe about the internal and competitive bench marking. [8]

Answer:

Internal Benchmarking

It involves looking within the organization to determine other departments, locations and projects which have similar activities and then defining the best practices amongst them. It involves seeking partners from within the same organization. For example, from business units located in different areas. The main advantages of internal benchmarking are that access to sensitive data and information are easier; standardized data is often readily available; and usually less time and resources are needed. There may be fewer barriers to implementation as practices maybe relatively easy to transfer across the same organization. However real innovation may be lacking and best in class performance is more likely to be found through external benchmarking.

Competitive Benchmarking

It involves examining the products, services and processes of competitors and then comparing them with their own. It involves the comparison of competitors' products, process and business results with own. It requires that the company perform a detailed analysis of its competitors' products, services, and processes. Benchmarking partners are drawn from the same sector. However to protect confidentiality it is common for the companies to undertake this type of benchmarking through trade associations or third parties.

(b) A company has developed a new product and just completed the manufacture of the first four units of the product. The first unit took 3 hours to manufacture and the first four units together took 8.3667 hours to produce. The learning curve rate is: [3]

(i) 69.5%
(ii) 59.6%
(iii) 75.0%
(iv) 83.5%

Answer:

(iv)83.5%

Let the learning curve rate be X.

Since the first unit took 3 hours, the average time for the first 2 units = 3 × X and the average time for the first 4 units = 3 × X × X

So, $3X^2 = 8.3667/4 = 2.0917$

Or, $X^2 = (2.0917/3)$

Therefore, $x = \sqrt{2.0917/3} = .8325$ or 83.5%

(c) A concern sells three products. The budgeted fixed cost for the period is ₹ 6,00,000. The budgeted contribution to sales ratio (C/S ratio) and the sales mix are as under

Product	C/S ratio	Mix
Super	25%	20%

Premium	**40%**	**40%**
Best	**30%**	**40%**

What is the Break Even sales revenue? **[3]**
(i) ₹ 30,10,181
(ii) ₹ 15,23,312
(iii) ₹ 18,18,181
(iv) ₹ 17,60,500

Answer:
(iii) ₹18,18,181

$$\text{Break even sales} = \frac{₹6,00,000}{33\%} = 18,18,181$$

$$\text{Pv Ratio} = \left[25 \times \frac{20}{100}\right] + \left[40 \times \frac{40}{100}\right] + \left[30 \times \frac{40}{100}\right] = 33\%$$

(d) Nulook Ltd. Uses a JIT system and back flush accounting. It does not use a raw material stock control account During May, 8000 units were produced and sold. The standard cost per unit is ₹ 100; this includes materials of ₹ 45. During May, ₹ 4,80,000 of conversion costs were incurred.
The debit balance on cost of goods sold account for May was: **[3]**
(i) ₹ 8,00,000
(ii) ₹ 8,40,000
(iii) ₹ 8,80,000
(iv) ₹ 9,20,000

Answer:
(ii) ₹8,40,000
Cost of Goods Sold = Material cost + Conversions Cost
= [8,000 units × ₹45] + 4,80,000
= ₹8,40,000

(e) B Ltd. Has earned net profit of ₹ 1 lakh, and its overall P/V ratio and margin of safety are 25% and 50% respectively. What is the total fixed cost of the company? **[3]**
(i) ₹ 2,50,000
(ii) ₹ 2,00,000
(iii) ₹ 3,00,000
(iv) ₹ 1,00,000

Answer:
(iv) ₹1,00,000
MS=Profit/PV Ratio = ₹4 Lakh:
MS=50%;
BE Sales = (1-0.50) = 0.50
Hence BES = ₹4 lakh
Fixed Cost 25% of ₹ 4,00,000 = ₹1,00,000

Section B

Answer any five questions from the following and each question carries 16 marks.

2.(a) What is Strategic decision? What are its characteristics? [8]

Answer:

Strategic decisions are the decisions that are concerned with whole environment in which the firm operates the entire resources and the people who form the company and the interface between the two.

The characteristics of strategic decision are as follows:

(i) Strategic decisions are likely to affect the long-term direction of an organisation.

(ii) Strategic decisions are normally about trying to achieve some advantage for the organisation.

(iii) Strategic decisions are likely to be concerned with the scope of an organisation's activities: Does (and should) the organisation concentrate on one area of activity, or does it have many? The issue of scope of activity is fundamental to strategic decisions because it concerns the way in which those responsible for managing the organisation conceive its boundaries. It is to do with what they want the organisation to be like and to be about.

(iv) Strategy is to do with the matching of the activities of an organisation to the environment in which it operates.

(v) Strategy can also be seen as 'stretching' an organisation's resources and competences to create opportunities or capitalise on them. It is not just about countering environmental threats and taking advantage of environmental opportunities; it is also about matching organisational resources to these threats and opportunities. There would be little point in trying to take advantage of some new opportunity if the resources needed were not available or could not be made available, or if the strategy was rooted in an inadequate resource-base.

(vi) Strategic decisions therefore often have major resource implications for an organisation. In the 1980s a number of UK retail firms had attempted to develop overseas with little success and one of the major reasons was that they had underestimated the extent to which their resource commitments would rise and how the need to control them would take on quite different proportions. Strategies, then, need to be considered not only in terms of the extent to which the existing resource-base of the organisation is suited to the environmental opportunities but also in terms of the extent to which resources can be obtained and controlled to develop a strategy for the future.

(vii) Strategic decisions are therefore likely to affect operational decisions, to 'set off waves of lesser decisions'.

(viii) The strategy of an organisation will be affected not only by environmental forces and resource availability, but also by the values and expectations of those who have power in and around the organisation. In some respects, strategy can be thought of as a reflection of the attitudes and beliefs of those who have the most influence on the organisation. Whether a company is expansionist or more concerned with consolidation, and where the boundaries are drawn for a company's activities, may say much about the values and attitudes of those who influence strategy -- the stakeholders of the organisation. The beliefs and values of these stakeholders will have a more or less direct influence on the organisation.

(b) Define Strategic Drift. Describe how an organization prevents strategic drift. [8]

Answer:

Strategic drift is a management concept in which an organizations' response to the changing environment is often within the parameters of the organizations culture. Culture is traditionally seen as opposition to change, which stifles innovation and results in a momentum of strategy that can lead to strategic drift.
A subtle and unnecessary shift from an intended course or direction to another one – that is usually undesirable, at least in a long-term perspective.

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

3.(a) State the objectives of 'strategic leadership'. [4]

Answer:

Strategic leadership provides the vision, direction, the purpose for growth and context for success of the corporation. Strategic leadership is not about micromanaging business strategies. Rather, it provides the umbrella under which business devise appropriate strategies and creates value. The main objective of the strategic leadership is strategic productivity. Another aim of strategic leadership is to develop an environment in which employees forecast the organization's needs in context of their own job. Strategic leaders encourage the employees in an organization to follow their own ideas. In short, strategic leadership answers two questions: What and How.

(b) Write four applications of 'game theory' in the analysis of business decision. [4]

Answer:

Although the application of game theory in business have been quite limited, the concepts of maxi-min, mixed strategies, game value and game classes shed lights on the competitive situations facing managers in the organization. The following specific applications are noted below:

(i) The game theory technique is designed to evaluate situations where individuals and organizations can have conflicting objectives.

(ii) In wage negotiations between unions and firms, game theory could be used to analyze the bargaining process between two parties.

(iii) Game theory helps in determining the best course of action and for an optimal strategy for a firm in view of the expected counter moves from the competitors.

(iv) It can be used to analyze a broad range of activities.

(c) What are the problems of strategy evaluation? [8]

Answer:

Task of strategy evaluation suffers from the problems arising out of misinterpretation of environmental forces and corporate resources. The evaluator may not always be correct when he questions the validity of the on-going strategy. This is because of the fact that determination of opportunities and threats is often of a function the perception and the attitude of the person making such exercise as it is of the factor itself. For instance, a dynamic and enterprising planner may perceive abundant opportunities emerging due to economic and technological developments and formulate expansion strategy. This approach may not be appreciated by an evaluator with a conservative attitude and closed cognitive style that holds the view that the enterprise should continue to maintain its present product-market posture owing to disquieting political developments.

Inaccurate assessment of financial, marketing, managerial and other resources of the enterprise and existence of synergistic benefits poses another obstacle to the appraisal of strategy. Thus, for instance, a corporate planner chooses a diversification strategy because in his view the firm has adequate financial and managerial resources to support this plan. But the evaluator questions the utility of such a strategy because he doubts the skill and competence of the senior executives of the firm.

Another obstacle that is inherent in strategy appraisal is identification, evaluation and choice of strategic alternatives. In the real world, it has been noted that some organisations without making independent appraisal of opportunities choose a course of action because others in the same line of business have done so. This type of approach renders the product-market strategy weak.

Another source of difficulty involved in appraisal of strategy is misinterpretation of current results. Generally, the central chief executive, without digger deep into the problem, regards the current strategy as unsound if the performance has not been satisfactory and directs the corporate planner to re-examine it. In the same vein, he labels the strategy as sound because of the excellent operating results. But such type of hurried judgment may, at times, be erroneous. Poor results may have been due to improper execution of strategy or outstanding profits were due to certain other factors such as war and product rationing. The management swayed by good results may not take serious note of implications of impending environmental changes and accordingly remain indifferent to any modification in the current plan for the future.

4.(a) Discuss different types of value chain activities. [11]

Answer:

Value chain is defined as “the linked set of value-creating activities all the way from basic raw material sources for component suppliers to the ultimate end-use product or service delivered to the customer.”

Porter depicts the value chain, comprising the above interrelated primary and secondary activities, shown in the above figure. Porter classified the full value chain into nine interrelated primary and support activities. Primary activities can be related to actions which the organization performs to satisfy external demands while secondary activities are performed to serve the needs of ‘Internal Customers’.

Primary activities are the fundamental activities performed by an organization in order to be operative. They are: (a) Inbound logistics, (b) Operations, (c) Outbound logistics, (d) Marketing and sales and (e) Service.

Secondary activities are support activities, i.e. those activities required to ensure the efficient performance of the primary activities. Support activities are: (a) Infrastructure, (b) Human resources management, (c) Technology development, and (d) Procurement.

Primary Activities

- **Inbound Logistics -** Inbound logistics cover all the activities performed to have goods and services available for the operational processes as and when they will be required. This may include buying, transport, receiving, inspection, storage, etc.
- **Operations -** These are the operations the organization performs to convert its raw materials or products into a state for resale. In the case of a manufacturing concern these may be various production-related activities such as production control, machining, finishing, etc. For a retail business these maybe the merchandising and display activities used to offer goods to customers for sale.
- **Outbound Logistics -** These are the activities performed to move merchandise between the seller and the purchaser. They may include selection, scheduling, transport, etc. of deliveries. Some businesses such as cash-and-carry wholesalers may not have such activities as these tasks are performed by the customer.
- **Marketing -** This includes all the activities performed to create demand for the organization's products and services and includes advertising, sales, market research, etc.
- **Service -** It pertains to the services rendered to the customer. These include financing services such as financing the outstanding balance, or after-sales service to products, or services to handle customer queries and complaints, etc.

Support Activities

- **Infrastructure -** This consists of the management structure which services the whole organization as well as structures such as reception, general postal services, messengers, financial accounting and other general activities. An attempt to trace these costs to any specific cost object will result in an inordinate amount of work. The total amount of such cost should be relatively small in comparison with total cost and this cost is usually considered to be untraceable. The cost of the physical infrastructure (plant, equipment, etc.) is considered part of the cost of activities where the infrastructure is used.
- **Human Resources Management-** This is the basic activity of overseeing the acquisition, maintenance and severance of staff and principally services the primary activities. Personnel departments, in-house medical services and even sports clubs may be part of this major activity.
- **Technology Development -** The development of technology today may require large sums of money take place over a lengthy period of time and ultimately benefit a multitude of users in the organization. This cost must thus be seen as any capital project which cannot be charged to users before the project is operative. Technology development cost could thus be capitalized and expensed to users over the useful life of the project. Cost of operating technology must, however, be traced to users on a usage basis. An example may be a large computer project which may take several years to complete. Users will only benefit from the project once it is operative and there is no point in charging this cost before such time.
- **Procurement -** The procurement activity services the organization as a whole by acquiring all necessary goods and services which the organization may require. If the activity is specifically related to the acquisition of, say, raw materials it could be seen as part of the inbound logistics process, i.e. a primary activity. If, however, the

procurement activity cannot be linked to purchases for primary activities, it will be considered a secondary (support) activity.

The above value chain activities can, to a greater or lesser extent, be found in most businesses. The value chain serves as a useful mechanism to analyze an organization in order to determine what activities it performs to convert inputs .to outputs. It also helps to develop a good understanding of the primary and support activities.

(b) List out the benefits of Strategic Alliance. **[5]**

Answer:

Benefits of Strategic Alliance

Enterprises that enter into strategic alliance usually expect to benefit in one or more ways. Some of the potential benefits that enterprises could achieve are such as:

- Gaining capabilities An enterprise may want to produce something or to enquire certain resources that it lacks in the knowledge, technology and expertise. It may need to share those capabilities that the other firms have. Thus, strategic alliance is the opportunity for the enterprise to achieve its objectives in this aspect. Further to that, in later time the enterprise also could then use the newly acquired capabilities by itself and for its own purposes.
- Easier access to target markets Introducing the product into a new market can be complicated and costly. It may expose the enterprise to several obstacles such as entrench competition, hostile government regulations and additional operating complexity. There are also the risks of opportunity costs and direct financial losses due to improper assessment of the market situations. Choosing a strategic alliance as the entry mode will overcome some of those problems and help reduce the entry cost. For example, an enterprise can license a product to its alliance to widen the market of that particular product.
- Sharing the financial risk Enterprises can make use of the strategic arrangement to reduce their individual enterprise's financial risk. For example, when two firms jointly invested with equal share on a project, the greatest potential that each of them stand to loose is only half of the total project cost in case the venture failed.
- Winning the political obstacle Bringing a product into another country might confront the enterprise with political factors and strict regulations imposed by the national government. Some countries are politically restrictive while some are highly concerned about the influence of foreign firms on their economics that they require foreign enterprises to engage in the joint venture with local firms. In this circumstance, strategic alliance will enable enterprises to penetrate the local markets of the targeted country.
- Achieving synergy and competitive advantage Synergy and competitive advantage are elements that lead businesses to greater success. An enterprise may not be strong enough to attain these elements by itself, but it might possible by joint efforts with another enterprise. The combination of individual strengths will enable it to compete more effectively and achieve better than if it attempts on its own.

5.(a) An electro-mechanical equipment has a purchase price of ₹7,000. Its running costs per year and resale values are given here:

Year:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Running Costs (₹)	**2,000**	**2,100**	**2,300**	**2,600**	**3,000**	**3,500**	**4,100**	**4,600**
Resale Value (₹)	**4,000**	**3,000**	**2,200**	**1,600**	**1,400**	**700**	**700**	**700**

At which year is the replacement due? [8]

Answer:

Computation of Average Cost and replacement Due.

Year	Net Cap. Cost	Running Cost	Cumulative Running Cost	Total Cost	Average Cost
1	7,000 – 4,000 = 3,000	2,000	2,000	5,000	5,000
2	= 4,000	2,100	4,100	8,100	4,050
3	= 4,800	2,300	6,400	11,200	3,733
4	= 5,400	2,600	9,000	14,400	3,600
5	= 5,600	3,000	12,000	17,600	3,520
6	= 6,300	3,500	15,500	21,800	3,633
7	= 6,300	4,100	19,600	25,900	3,700
8	= 6,300	4,600	24,200	30,500	3,812

Optimum replacement period is @ the end of 5^{th} year

(b) What are transformational and transactional leadership styles? [8]

Answer:

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.

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.

6.(a) What are the various stages/steps to be taken in the implementation of TQM? [8]

Answer:

The various stages/steps to be taken in the implementation of TQM are, as listed below:

1. Identification of customers/customer groups.
2. Identification of customer expectations
3. Identification of customer decision-making requirements and product utilities
4. Identification of perceived problems in decision making process and product utilities.
5. Comparison with other organizations and Benchmarking
6. Customer Feedbacks

7. Identification of improvement opportunities
8. Quality Improvement Process through –
   (a) Determination of new strategies,
   (b) Elimination of deficiencies, and
   (c) Identifying solutions.

1. Stage 1: Identification of customers /' customer groups: Through a team approach (a technique called Muiti - Voting), the firm should identify major customer groups. This helps in generating priorities in the identification of customers and critical issues in the provision of decision - support information.
2. Stage 2: Identifying customer expectations: Once the major customer groups are identified, their expectations are listed. The question to be answered is — What does the customer expect from the Firm?
3. Stage 3: Identifying customer decision-making requirements and product utilities: By identifying the need to stay close to the customers and follow their suggestions, a decision — support system can be developed, incorporating both financial and non-financial information, which seeks to satisfy used requirements. Hence, the Firm finds out the answer to - What are the customer's decision-making requirements and product utilities? Answer is sought by listing out managerial perceptions and not by actual interaction with the customers,
4. Stage 4: Identifying perceived problems in decision-making process and product utilities: Using participative processes such as brainstorming and multi-voting, the firm seeks to list out its perception of problem areas and shortcomings in meeting customer requirements. This will list out areas of weakness where the greatest impact could be achieved through the implementation of improvements. The firm identifies the answer to the question - What problem areas do we perceive in the decision-making process?
5. Stage 5: Comparison with other Firms and benchmarking; Detailed and systematic internal deliberations allow the Firm to develop a clear idea of their own strengths and weaknesses and of the areas of most significant deficiency. Benchmarking exercise allows the Firm to see how other Companies are coping with simitar problems and opportunities.
6. Stage 6: Customer Feedback: Stages 1 to 5 provide a information base developed without reference to the customer. This is rectified at Stage 6 with a survey of representative customers, which embraces their views on perceived problem areas. Interaction with the customers and obtaining their views helps the Firm in correcting its own perceptions and refining its process.
7. Stage 7 & 8: Identification of improvement opportunities and implementation of Quality Improvement Process: The outcomes of the customer survey, benchmarking and internal analysis, provides the inputs for stages 7 and 8. i. e., the identification of improvement opportunities and the implementation of a forma! improvement process.

(b) A Small retailer has studied the weekly receipts and payments over the past 200 weeks and has developed the following set of information:

Weekly Receipts	**Probability**	**Weekly Payments**	**Probability**
(₹)		**(₹)**	
3000	**0.20**	**4000**	**0.30**
5000	**0.30**	**6000**	**0.40**
7000	**0.40**	**8000**	**0.20**
12000	**0.10**	**10000**	**0.10**

Using the following set of random numbers, simulate the weekly pattern of receipts and payments for the 12 weeks of the next quarter, assuming further that the beginning bank balance is ₹8000. What is the estimated balance at the end of the 12 weekly period? What is the highest weekly balance during the quarter? What is the average weekly balance for the quarter?

Random Numbers

For Receipts	**03**	**91**	**38**	**55**	**17**	**46**	**32**	**43**	**69**	**72**	**24**	**22**
For payment	**61**	**96**	**30**	**32**	**03**	**88**	**48**	**28**	**88**	**18**	**71**	**99**

According to the given information, the random number interval is assigned to both the receipts and the payments. [8]

Answer:

Range of random numbers							
Receipt (₹)	**Probability**	**Cumulative probability**	**Range**	**Payments (₹)**	**Probability**	**Cumulative probability**	**Range**
3000	0.20	0.20	0-19	4000	0.30	0.30	0-29
5000	0.30	0.50	20-49	6000	0.40	0.70	30-69
7000	0.40	0.90	50-89	8000	0.20	0.90	70-89
12000	0.10	1.00	90-99	10000	0.10	1.00	90-99

Simulation of data for a period of 12 weeks					
Week	**Random No. for receipt**	**Expected Receipt (₹)**	**Random No. for payment**	**Expected Payment (₹)**	**Week end Balance (₹)**
Opening Balance					8000
1	03	3000	61	6000	5000 (8000 + 3000 – 6000)
2	91	12000	96	10000	7000
3	38	5000	30	6000	6000
4	55	7000	32	6000	7000
5	17	3000	03	4000	6000
6	46	5000	88	8000	3000
7	32	5000	48	6000	2000
8	43	5000	28	4000	3000
9	69	7000	88	8000	2000
10	72	7000	18	4000	5000
11	24	5000	71	8000	2000
12	22	5000	99	10000	(3000)

Estimated balance at the end of 12th week = ₹ (3,000)
Highest balance = ₹ 7,000
Average balance during the quarter = 45,000/12 = ₹ 3,750

7.(a) Division A is a profit centre which produces three products X, Y and Z. Each product has an external market.

	X	Y	Z
External market price per unit	**₹ 48**	**₹ 46**	**₹ 40**
Variable cost of production in division A	**₹ 33**	**₹ 24**	**₹ 28**
Labour hours required per unit in division A	**3**	**4**	**2**

Product Y can be transferred to Division B, but the maximum quantity that might be required for transfer is 300 units of Y.

	X	Y	Z
The maximum external sales are:	**800 units**	**500 units**	**300 units**

Instead of receiving transfers of Product Y from Division A, Division B could buy similar product in the open market at a slightly cheaper price of ₹ 45 per unit.

What should the transfer price be for each unit for 300 units of Y, if the total labour hours available in Division A are?

(i) 3800 hours **(ii) 5600 hours.** **[5+5=10]**

Answer:

Computation of contribution per labour hour from external sales:

	X	Y	Z
Market price (₹)	48	46	40
Variable cost (₹)	33	24	28
Contribution (₹)	15	22	12
Labour hours required	3	4	2
Contribution per labour hour (₹)	5	5.50	6
Priority	III	II	I

(i) The capacity is 3800 hours:

Hours required for Z = 300 × 2 = 600

Y = 500 × 4 = <u>2000</u>

2600

X = 800 × 3 = <u>2400</u>

<u>5000</u>

The existing capacity is not sufficient to produce the units to meet the external sales. In order to transfer 300 units of Y, 1200 hours are required in which division A will give up the production of X to this extent.

	₹
Variable cost of Y	24
(+) contribution lost by giving up production of X to the extent of 1200 hours = 1200 × 5 = 6000	
∴ Opportunity cost per unit = (6000/300)	<u>20</u>
Required transfer price	**<u>44</u>**

(ii) If the capacity is 5600 hours:

Variable cost

Contribution cost of giving up X to the extent of 600hours = 600 × 5 = 3000	24
Opportunity Cost Per unit = (3000/300)	10
Required transfer price	34

(b) Distinguish between cost Reduction and Cost control. **[6]**

Answer:

Difference between Cost reduction and cost control:

Particulars	Cost Reduction	Cost Control
1. Permanence	Permanent, Real and reflects genuine saving in cost	represents efforts made towards achievement of pre-determined target or goal,
2. Nature of function	It is a corrective function. It can operate along with an efficient cost control system. This concept Believes that there ia always a scope for further reduction in costs.	It is a preventive function, where costs are optimized before these are incurred,
3. Nature of process	It presumes the existence of concerned potential savings in norms or standards and therefore it is a corrective process.	It does not focus on costs independent of revenue nor considers product attributes as given. It is a wholistic control process.
4. Performance evaluation	It is not concerned with maintenance of performance according to standards	The process involves setting up a target, investigating variances and taking remedial measures to correct them
5. Nature of Standards	Continuous process of critical examination includes analysis and challenge of standards. It assumes the existence of potential savings in the standards and aims at improving them by bringing out more savings,	It accepts the standards, once they have been fixed. In other words, standards shall remain, as it is.
6. Dynamism	Fully a dynamic approach	It is a routine exercise and lacks dynamic approach.
7. Coverage	Universally applicable to all areas of business. Does not depend upon standards, though target amounts may be set.	Limited applicability to those items of cost for which standards can be set.

8. Basic approach	It is not concerned with maintenance of performance according to standards. It challenges the very standards set.	It involves setting up a target, ascertaining the actual performance and doing the variance analysis, followed by remedial actions.

8.(a) Based on the data given below, to show the calculation of:

(i) Efficiency ratio;

(ii) Production volume ratio;

(iii) Idle capacity ratio.

Data	**Standard hours of output**	**ours of actual operation**	
Theoretical capacity	**100**	**100**	
Theoretical capacity less unavoidable lost time	**95**	**95**	
Planned activity for period	**81**	**90**	
Actual activity for period	**68**	**85**	**[6]**

Answer:

$$\text{EfficiencyRatio} = \frac{\text{Standard hours of production achieved}}{\text{Actual Number of working hours}} \times 100 = 68/85 \times 100 = 80\%$$

$$\text{Production Volume Ratio} = \frac{\text{Standard hours of production achieved}}{\text{Budgeted number of standard hours}} \times 100 = 68/81 \times 100 = 84\%$$

$$\text{Idle Capacity Ratio} = \frac{\text{Practical Capacity Standard hours less budgeted standard hours}}{\text{Practical capcity standard hours}} \times 100$$

$$\text{Idle Capacity Ratio} = \frac{95 - 81}{95} \times 100$$

$$\text{Idle Capacity Ratio} = \frac{14}{95} \times 100 = 14.74\%$$

(b) A2Z p.l.c supports the concept of tero technology or life cycle costing for new investment decisions covering its engineering activities. The financial 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 machine is 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/breakup/scrap	**₹ 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. [8]

Answer:

Computation of present value of outflows and equivalent annual

		Exe machine		Wye machine
Initial cost (₹)		19,000.00		13,000.00
Less : scrap at the end of the life (₹)	(3000 × 0.32)	960.00	(3000 ×0.56)	1,680.00
		18,040.00		11,320.00
Present value of total annual cost (₹)	(2000 × 6.81)	13,620.00	(2600 × 4.36)	11,336.00
overhaul cost (₹)	(4000 ×.47)	1,880.00	(2000 × 0.68)	1,360.00
		33,540.00		24,016.00
capital recovery factor	(1/6.81)	0.15	(1/4.36)	0.23
equivalent annual cost (₹)		4,925.00		5,508.00

As the equivalent annual cost is less for exe machine, it is better to purchase the same.

(c) Mention four important management applications of PERT and CPM. [2]

Answer:

The following are the applications of PERT and CPM: (any four)

(i) Construction of buildings, bridges, high-ways, and irrigation projects etc.
(ii) Budget and auditing procedures,
(iii) Missile development programme,
(iv) Installation of a complex new instruments,
(v) R&D of a new product,
(vi) Organization of a big conference.