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) "The process of Strategy formulation basically involves six main steps" – Explain these six steps. Discuss the relationship of soundness of strategy with the quality of implementation. [8]

Answer: 1 (a)

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

■ **Setting Organizations' objectives** - The key component of any strategy statement is to set the long-term objectives of the organization. It is known that strategy is generally a medium for realization of organizational objectives.

Objectives stress the state of being there whereas Strategy stresses upon the process of reaching there. Strategy includes both the fixation of objectives as well the medium to be used to realize those objectives. Thus, strategy is a wider term which believes in the manner of deployment of resources so as to achieve the objectives.

While fixing the organizational objectives, it is essential that the factors which influence the selection of objectives must be analyzed before the selection of objectives. Once the objectives and the factors influencing strategic decisions have been determined, it is easy to take strategic decisions.

■ **Evaluating the Organizational Environment** - The next step is to evaluate the general economic and industrial environment in which the organization operates. This includes a review of the organizations competitive position. It is essential to conduct a qualitative and quantitative review of an organizations existing product line. The purpose of such a review is to make sure that the factors important for competitive success in the market can be discovered so that the management can identify their own strengths and weaknesses as well as their competitors' strengths and weaknesses.

After identifying its strengths and weaknesses, an organization must keep a track of competitors' moves and actions so as to discover probable opportunities of threats to its market or supply sources.

■ **Setting Quantitative Targets** - In this step, an organization must practically fix the quantitative target values for some of the organizational objectives. The idea behind this is to compare with long term customers, so as to evaluate the contribution that might be made by various product zones or operating departments.

■ **Aiming in context with the divisional plans** - In this step, the contributions made by each department or division or product category within the organization is identified and accordingly strategic planning is done for each sub-unit. This requires a careful analysis of macroeconomic trends.

■ **Performance Analysis** - Performance analysis includes discovering and analyzing the gap between the planned or desired performance. A critical evaluation of the organizations past performance, present condition and the desired future conditions must be done by the organization. This critical evaluation identifies the degree of gap that persists between the actual reality and the long-term aspirations of the organization. An attempt is made by the organization to estimate its probable future condition if the current trends persist.

■ **Choice of Strategy** - This is the ultimate step in Strategy Formulation. The best course of action is actually chosen after considering organizational goals, organizational strengths, potential and limitations as well as the external opportunities.

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

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

Strategy Formulation		Weak	Excellent
	Sound	A	B (Success)
	Flawed	C	D

Strategy implementation

(b) ABC Ltd. Initiated a quality improvement program at the beginning of the year. Efforts were made to reduce the number of defective units produced. By the end of the year, reports from the production manager revealed that scrap and rework had both decreased. Though pleased with the success, the President of the company wanted some assessment of the financial impact of the improvements. To make this assessment, the following financial data were collected for the current and preceding year: -

	Preceding Year (2014-2015)	Current Year (2015-2016)
Sales	1,00,00,00	1,00,00,000
Scrap	4,00,000	3,00,000
Rework	6,00,000	4,00,000
Product inspection	1,00,000	1,25,000
Product warranty	8,00,000	6,00,000
Quality training	40,000	80,000
Materials inspection	60,000	40,000

You are required to classify the costs as prevention, appraisal, internal failure, or external failure. [3]

Answer: 1 (b)

Prevention Cost =	Quality Training
Appraisal Cost =	Product inspecting Material inspections
Internal failure =	Scrap & Rework
External failure =	Product Warranty

(c) ABC Co. manufactures and sells 20,000 units of a product. The Full Cost per unit is ₹300. The Company has fixed its price so as to earn a 25% Return on Investment of ₹20,00,000. In response to competitive pressures, the Company must reduce the price to ₹310 next year, in order to achieve sales of 20,000 units. The Company also plans to reduce its investment to ₹18,00,000. If a 25% Return on Investment should be maintained, what is the Target Cost per unit for the next year? [3]

Answer: 1 (c)

$$\text{Target profit p.u. for next year} = \frac{₹18,00,000 \times 25\%}{20,000 \text{ units}} = ₹22.50$$

So, Target cost for next year = New sale price less Target profit = ₹310 – ₹22.50

= ₹287.50

(d) Two similar products A and B, manufactured by a company for a production period have the following data:

Particulars	Product A	Product B
Selling price(₹/unit)	50	70
Variable cost (₹/unit)	30	40
Labour hours per unit	2	6

Total fixed costs that have to be incurred irrespective of the type of product amounts to ₹1,80,000. Besides, there are specific fixed costs of ₹60,000 to be incurred only if A is produced and ₹ 72,000 to be incurred only if B is produced. Assume no inventory. At present, 7,500 units of A and B are sold. Now, what is the current Break-Even point (BEP)? [3]

Answer: 1 (d)

Current BEP (both A and B produced):

Total Fixed Cost = 60,000 + 72,000 + 1,80,000 = ₹3,12,000

Contribution of A = 20, B = 30, Average = 25 (equal no. of units A and B)

BEP = 3,12,000/25 = 12,480 units (i.e., 6,240 units of A and 6,240 units of B)

(e) What are the reasons for implementation of an ERP (Enterprise Resource Planning) package by the companies? [3]

Answer: 1 (e)

Enterprise resource planning (ERP) refers to a computer information system that integrates all the business activities and processes throughout an entire organization. ERP systems incorporate many of the features available in other types of manufacturing programs, such as project management, supplier management, product data management, and scheduling. The objective of ERP is to provide seamless, real-time information to all employees throughout the enterprise. Companies commonly use ERP systems to communicate the progress of orders and projects throughout the supply chain, and to track the costs and availability of value-added services.

ERP systems offer companies the potential to streamline operations, eliminate overlap and bottle-necks, and save money and resources. But ERP systems are very expensive and time-consuming to implement, and surveys have shown that not all companies achieve the desired benefits. According to the online business resource Darwin Executive Guides, it is "a tall order, building a single software program that serves the needs of people in finance as well as it does the people in human resources and the warehouse...

To do ERP right, the ways you do business will need to change and the ways people do their jobs will need to change too. And that kind of change doesn't come without pain."

Section - B

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

2. (a) Now –a-days, the multinational companies presume to follow either and International Strategy or Multi Domestic Strategy or Global Strategy or Transnational Strategy. Define each of them, with all their respective advantages and disadvantages.

(b) (i) Explain the relationship of synergy with strategic realignment in the context of merger.

(ii) What are the problems of strategy evaluation. [6+10]

Answer: 2 (a)

International Strategy: is based on transfer of distinctive competencies to foreign markets.

Multi Domestic Strategy: depends on the ability to offer customized products catering to local market requirements.

Global Strategy: is based on the ability to exploit both the economies of scale and the experience curve effects while guarding their own technology through wholly owned subsidiaries.

Transnational Strategy: combines all the above three strategies to harvest the best of benefits.

The advantages and disadvantages of each of the above strategies have been put up in the tabular format as below:

Strategies	Advantages	Disadvantages
International	Transfer of distinctive Competencies	Inadequate local response. Unrealized location economies. Unavailable due to experience curve.
Multi Domestic	Customization of product to Suit local markets.	Unrealized location economies, Unavailable due to experience curve, Inability to transfer distinctive competencies.
Global	Advantages of experience curve and location economies	Inadequate local response.
Transnational	Advantage of experience curve, location, economies, customization and Global knowledge.	Problem due to organizational structure & culture, problem in locating local & international talents requirements.

Answer: 2 (b) (i)

Synergy is the term used to describe a situation where different entities cooperate the sum of its parts. The most fundamental of all reasons for mergers is the 'synergy' argument, which serves as the basis of strategic realignment.

Separate companies 'pre-merger values'

Accordingly under synergy, the combined value of a firm is much greater than the value of individual firms. The phenomenon of synergy arises due to economics of scale of operation. Besides, the combined mega features such as enhanced managerial capabilities, creativity, innovativeness, R&D and market coverage capacity expand beyond simple arithmetic. Due to the complementary nature of resources and skills, a widened horizon of opportunities is also responsible for synergy on a merger situation.

Answer: 2 (b) (ii)

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.

3. (a) Enumerate the advantages of strategic planning.

(b) Define Strategic Drift. Describe how an organisation prevents strategic drift. [6+10]

Answer: 3 (a)

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 and effect to obtain sanction for one of the alternatives, which is to be ultimately interpreted and communicated in operational terms. Thus strategic planning provides the framework within which future activities of firm are expected to be carried out.

Strategic planning has following advantages or usefulness:-

- 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.
- It is concerned with the allocation of resources to product market opportunities and concerned to realize the company's profit potential through selected strategies.
- It measures the strengths and weaknesses of the firm.
- 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.
- 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.
- It enables executives to provide necessary direction for the firm, to take full advantage of new opportunities and to minimize the risk.

Answer: 3 (b)

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.

4. (a) Critics of Nike often complain that it's shoes cost almost nothing to make, yet cost the consumer so much. Identify the strategic marketing planning steps which provide value that add to Nike's offering and result in the high price of Nike's shoes.

(b) Distinguish between Cost Reduction and Cost Management. [10 + 6]

Answer: 4 (a)

Critics of Nike often complain that its shoes cost almost nothing to make yet cost the consumer so much.

True. The raw materials and manufacturing costs involved in the making of a sneaker are relatively cheap, but the process of selling the product to the consumer is expensive. Materials, labor, shipping, equipment, import duties, and suppliers cost generally total fewer than for a pair of shoes Nike must compensate its sales team, its distributors, its administration and its endorsers, as well as pay for advertising & R&D. Finally Nike sells its products to retailers to make a profit. The retailer therefore pays some amount in order to put a pair of Nikes on the shelf.

Only a handful of companies like Nike stand out as master marketers. These companies focus on the customer and are:

(1) organized to respond effectively to changing customer needs.
(2) have well-staffed marketing departments, and
(3) all their other departments—manufacturing, finance, research and development, personnel, purchasing; also accept the concept that the customer is king.

Strategic planning covers the entire activities of the organization, including all of the strategic business units (SBUs) and each functional area. Developing functional strategies and plans is the fourth step in the strategic planning process. One technique for identifying opportunities is to seek strategic windows. A strategic window is the identification of an opportunity for a limited period in the future and managing the organization & apposes resources so that there is a fit between the key market needs and the ability of the organization to meet those needs at an optimum level. A marketing plan is the central instrument for directing and coordinating the marketing effort. It operates at a strategic and tactical level.

Steps in Planning Process

To carry out their responsibilities, marketing managers - whether at the corporate, division, business or product level follow a marketing process. Working within the plans set by the levels above them, product managers come up with a marketing plan for individual products lines, brands, channels, or customer groups.

Tactical Marketing Strategic Marketing

The 1st phase choosing the value represents the homework that marketing must do before any product exists. The marketing staff must segment the market and develop the offerings value positioning.

The 2nd phase is providing the value. Marketing must determine specific product features, prices and distribution as part of tactical marketing. The task in the 3rd phase is communicating the value. Further tactical marketing occurs in utilizing the sales force, sales promotion, advertising, and other promotional tools to inform and promote the product.

Answer: 4 (b)

Difference between Cost Reduction and Cost Management

Particulars	Cost Reduction	Cost Management
Meaning	It is the permanent reduction in the unit cost of goods or services without affecting their quality or suitability for their intended use.	It is a system that establishes linkages between costs and revenues and relates them with the product to maximize Firm's profits.
Objective	Critical examination of each	Optimal utilization of resources

	aspect of business and their analysis and review to improve the efficiency and effectiveness so as to reduce costs through techniques of Value Analysis, Work Study, Standardization etc.	to enhance the operating income of the business entity.
Nature of process	It presumes the existence of concealed 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.

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

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

(ii) Explain the way a cost leadership strategy can help a firm in handling the five competitive forces. [8]

(b) 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: 5 (a) (i)

Cost advantages by reconfiguring value chains:

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

Simplifying the product design

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

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

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

Finding ways to bypass the use of high-cost raw materials or component parts. Using direct-to-end-user sales and marketing approaches that cut out large costs and margins of wholesalers and retailers.

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

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

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

Answer: 5 (a) (ii)

Cost leadership strategy in handling five competitive forces:

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

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

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

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

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

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

Answer: 5 (b)

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 5th year.

6. (a) What is Product Life Costing? State its characteristics. Explain how an organisation would benefit from a Product Life-Cycle Costing exercise? [8]

(b) A businessman is considering taking over a certain new business. Based on past information and his own knowledge of the business, he works out the probability distribution of the monthly costs and sales revenues, as given here:

Cost (in ₹)	Probability	Sales Revenue (₹)	Probability
17000	0.10	19000	0.10
18000	0.10	20000	0.10
19000	0.40	21000	0.20
20000	0.20	22000	0.40
21000	0.20	23000	0.15
		24000	0.05

Use the following sequences of random numbers to be used for estimating costs and revenues. Obtain the probability distribution of the monthly net revenue.

Sequence 1	**82**	**84**	**28**	**82**	**36**	**92**	**73**	**91**	**63**	**29**
	27	**26**	**92**	**63**	**83**	**02**	**10**	**39**	**10**	**10**
Sequence 2	**39**	**72**	**38**	**29**	**71**	**83**	**19**	**72**	**92**	**59**
	49	**39**	**72**	**94**	**04**	**92**	**72**	**18**	**09**	**00**

[8]

Answer: 6 (a)

Product Life Costing (PLCC) is an approach used to provide a long-term picture of product line, profitability, feedback on the effectiveness of the life cycle planning and cost data to clarify the economic impact on the alternative, chosen in the design, engineering phase etc. Characteristics: PLCC -

(i) Involves tracing of costs and revenues of each product over the several calendar periods throughout their entire life cycle.

(ii) Traces research, design and development costs and total magnitude of these costs for each individual produce and compared with product revenue.

(iii) Assists report generation for costs and revenues.

Life Cycle costing exercise considers the entire cost life cycle of the product, and thus provides a more complete perspective of product costs and product profitability.
It is used to manage the total costs of the product across its entire life cycle. For example, design and development costs may be increased in order to decrease manufacturing costs and service costs later in the life cycle. Thus, products that are loss making initially but profitable in longer term will be accepted.

Answer: 6 (b)

Cost (₹)	Probability	Cumulative Probability	Random Range	Sales Revenue (₹)	Probability	Cumulative Probability	Random Range
17,000	0.1	0.1	00 - 09	19,000	0.1	0.1	00- 009
18,000	0.1	0.2	10 - 19	20,000	0.1	0.2	10 -19
19,000	0.4	0.6	20 - 59	21,000	0.2	0.4	20 -39
20,000	0.2	0.8	60 - 79	22,000	0.4	0.8	40 -79
21,000	0.2	1.0	80 - 99	23,000	0.15	0.95	80 -94
				24,000	0.05	1.00	95 -99

Month	Random No. for Cost	Sales Revenue (₹)	Random No. for Sales	Cost (₹)	Monthly Net Revenue (₹)
1	82	21,000	39	21,000	-----
2	84	21,000	72	22,000	1000
3	28	19,000	38	21,000	2000
4	82	21,000	29	21,000	------
5	36	19,000	71	22,000	3000
6	92	21,000	83	23,000	2000
7	73	20,000	19	20,000	------
8	91	21,000	72	22,000	1000
9	63	20,000	92	23,000	3000
10	29	19,000	59	22,000	3000
11	27	19,000	49	22,000	3000
12	26	19,000	39	21,000	2000
13	92	21,000	72	22,000	1000
14	63	20,000	94	23,000	3000

15	83	21,000	04	19,000	(2000)
16	02	17,000	92	23,000	6000
17	10	18,000	72	22,000	4000
18	39	19,000	18	20,000	1000
19	10	18,000	09	19,000	1000
20	10	18,000	00	19,000	1000
					35000

Average = 35,000/20 = ₹1,750

7. (a) A manufacturer has an order for one lakh units. With his present equipment they cost 80 paise each to make and there is a 6% fraction defective. However, he may install special controls which together with their cost of development, cost ₹18,000. His variable cost per unit, then falls to 60 paise each; but the process may be less reliable. How much less reliable can the process be, before he should reject the special controls? [6]

(b) A manufacturing company produces a chemical product which passes through two processes factory and finishing. It has the capacity to process an input of 1,00,000 kgs. of raw material. Normal scrap will be 10% and 5% of input in factory and finishing processes respectively. The realisable value of such scrap is ₹4 and ₹8 per kg. respectively for factory and finishing processes to be credited against the cost of respective process. Relevant cost data for the coming year are:

	Factory Process (₹)	Finishing Process (₹)
Direct wages	6,00,000	5,50,000
Overheads	2,28,000	4,22,900

There are three possible sources of purchase of raw materials:

Supplier	Purchase price per kg. (₹)	Maximum quantity
X	5.00	60,000 kgs.
Y	5.60	80,000 kgs.
Z	5.30	Provided entire quantity of 1,00,000 kgs is ordered, otherwise at ₹5.80 per kg.

In each case the company is required to collect the raw materials from the godown of supplier. Variable transport cost depends upon the distance involved. The same are as under:

Supplier	X	Y	Z
Transport cost (per kg)	30 paise	25 paise	25 paise

Fixed transport cost would be ₹1,00,000 per annum irrespective of the supplier to be contracted. The output of the finishing process can be sold to three prospective customers, their offer being as follows:

Customer	Price per kg. Of output (₹)	Trade discount (%)	Conditions
A	32.50	2	Maximum quantity 40,000 kgs.
B	32.00	2	Maximum quantity 80,000 kgs.
C	30.90	---	Provide the entire output is sold to him.

In case of supplies to customers A and B, the fixed delivery costs will be ₹ 1,500 per month and the variable delivery costs will be 65 paise and 36 paise per kg. respectively.
Customer C will collect the entire output from the warehouse of the company. You

are required to indicate with reasonings:
(i) Choice of supplier with comparative cost tables.
(ii) Choice of customer with comparative tables of net realisations. **[10]**

Answer: 7 (a)

Let the break-even fraction defective = x
Manufacturer's order = 1,00,000 units

In order to get 1,00,000 goods unit $\frac{1,00,000}{1-x}$ items should be made

Cost without special controls = $\frac{1,00,000 \times 0.80}{1-0.06}$ = 85,106

Cost with special controls = ₹18,000 + (0.60) $\frac{1,00,000}{1-x}$

By equating both proposals

₹85,106 = ₹18,000 + (0.60) $\frac{1,00,000}{1-x}$

or, 67,106 = $\frac{60,000}{1-x}$

or, 1- x = 0.894

or, x = 1- 0.894

or, x = 0.106

or, x = 10.6%

Answer: 7 (b)

(i) Choice of Suppliers:

Comparative Cost Tables of Suppliers

Particulars	**X**	**Y**	**Z**	
Quantities to be supplied	up to 60,000 kgs.	up to 80,000 kgs.	less than 1,00,000 kgs.	1,00,000 kgs.
	(₹)	(₹)	(₹)	(₹)
Purchases (Price)	5.00	5.60	5.80	5.30
Variable transport cost (per kg)	0.30	0.25	0.25	0.25
	5.30	5.85	6.05	5.55

Alternatives available

First—To purchase 60,000 kgs. from X and balance 40,000 kgs from Y

Second—To purchase 1,00,000 kg from Z.

Cost of purchase for above alternatives:

Supplier	Quantity (kg.)	Rate (₹)	First Alternative (₹)	Second Alternative (₹)
X	60,000	5.30	3,18,000	-
Y	40,000	5.85	2,34,000	-
Z	1,00,000	5.55	-	5,55,000
Total			5,52,000	5,55,000

Recommendation: First alternative should be opted i.e. purchase 60,000 kg from X and 40,000 kgs. from Y, as the cost of purchase of first alternative is less than the cost of purchase of second alternative.

Note: Fixed transportation cost of ₹1,00,000 is to be ignored because it is not influenced by any alternative.

(ii) **Choice of Customer:**

Output to be sold:	
Input in factory process	1,00,000 Kgs.
Less: Normal scrap 10% of input in factory process	10,000 Kgs.
Output of factory process input of finishing process	90,000 Kgs.
Less: Normal scrap in finishing process 5% of input	4,500 Kgs.
Output of finishing Process	85,500 Kgs.

Relevant Cost Data of Selling Price:

Customers	A	B	C
Quantities	Up to 40,000 kgs. (₹)	Up to 80,000 kgs. (₹)	Up to 85,500 kgs. (₹)
Selling Price per kg.	32.50	32.00	30.90
Less: Trade discount (2%)	0.65	0.64	-
Net price	31.85	31.36	30.90
Less: Variable cost of delivery per kg.	0.65	0.36	-
Net realisation except fixed cost of A and B	31.20	31.00	30.90

Alternatives available: Rates of A and B are favourable when compared to C, but selling to A and B will result in fixed cost. Therefore, following two alternatives are available: First: 40,000 kg. to A and 45,500 kg. to B Second: 85,500 kg. to C

Net realisation based on above prices.

First Alternative

Customer	Quantity (Kg.)	Rate (₹)	Amount (₹)
A	40,000	31.20	12,48,000
B	45,500	31.00	14,10,500
			26,58,500
Less: Fixed delivery cost (₹1,500 × 12)			18,000
Net Realisation			26,40,500

Second Alternative

Customer	Quantity (Kg.)	Rate (₹)	Amount (₹)
C	85,500	30.90	26,41,950

Recommendation: Entire output should be sold to C as the net realisation as per second alternative is better than that under the first alternative.

8. (a) Chakra Ltd. manufactures Mixer Grinders. The manufacture involves an assembly of various parts which are processed in the machine shop and purchased components. The on/off switch is presently being purchased from a vendor at ₹4.50 each, annual requirement being 20,000 pieces.

The production manager has put a proposal 2 months back to make the switch in the machine shop. He had suggested that the company will save profit and taxes on bought-out switch. The costing department was asked to make an estimate of making the item which showed that the cost of making was ₹4.73. The purchase department continued buying the item on the basis of the cost estimate given to

them. Recently, the vendor has sent a letter requesting the purchase department to grant increase in price by 10% minimum per switch as the input costs had gone up. The costing department was once again requested to estimate cost of making the switch.

The costing department re-estimated the costs using current prices and observed that the cost of making has gone up to ₹5.33. Purchase department again decided to continue buying as it was cheaper to buy than make. The cost estimates prepared by costing department were as under:

Annual Costs		
	Previous ₹	Current ₹
Direct Materials	40,000	48,000
Direct Labour ₹2 per hour	20,000	22,000
Overheads at ₹3 per hour	30,000	31,500,
Total cost	90,000	1,01,500
Add: Expected increase @ 5%	4,500	5,075
Expected manufacturing cost	94,500	1,06,575
Cost per piece	4.73	5.33

Twenty five percent of the overheads are fixed.
Do you agree with the decision of buying considering the relevant costs? If the cost of making or buying is more or less same, what factors other than cost will influence the making decision? [6]

(b)

	31-3-2016	31-3-2017
	(₹ In lakhs)	(₹ In lakhs)
Sales	120	129.6
Prime cost of sales	80	91.1
Variable Overheads	20	24.0
Fixed expenses	15	18.5
PROFIT	5	(4.0)

During 2016-17, average prices increased over these of the previous years (1) 20% in case of sales (2) 15% in case of prime cost (3) 10% in case of Overheads.

Prepare a profit variance statement from the above data. [10]

Answer: 8 (a)

To make or buy decision is generally based on relevant costs. In the present case, the expected future costs are not relevant since the vendor is also likely to increase his price in future. The fixed overheads are also not relevant as these will be there even though the factory makes the switch or not.
Based on above, the cost of making will get reduced by the amount of fixed overheads and future expected cost as under:

	Two months Back ₹	Current ₹
Fixed overheads	7,500	7,875
Future expected cost	4,500	5,075
Irrelevant Costs	12,000	12,950
Per switch	0.60	0.65

It is clear from above that earlier cost estimate of ₹4.73 should have been ₹4.13 and present estimate of ₹5.33 should have been ₹4.68. In both the cases, making is cheaper than buying.
When the costs of making or buying are more or less same, making will be preferred on the following grounds:

(1) Quality can be assured.

(2) Supply is sure and in time.

(3) Capacity utilisation can be increased.

(4) Technical data drawings etc. can be kept secret.

(5) Design can be changed and controlled.

(6) There will be further scope for cost reduction.

Answer: 8 (b)

Calculation of variances:

(1) Sales Price Variance : 129.60 – (129.60 × 100/120) = ₹ 21.60 (F)
(2) Sales Volume Variance : (129.60 × 100/120) - 120 = ₹12 (A)
(3) Total Sales Variance : 129.60 –120 = ₹ 9.60 (F)
Decrease in volume =(12 /120)×100 = 10%
(4) Prime Cost price Variance : (91.10 × 100/115) – 91.10 = ₹11.88 (A)
(5) Prime Cost Volume Variance = 80 × 10/100 = ₹8 (F)
(6) Prime Cost Usage or efficiency Variance = (80 x 90/100) - (91.10 x 100/115)= ₹7.22 (A)
(7) Prime Cost Variance : 80 – 91.1 = ₹11.1 (A)
(8) Variable Overhead Price Variance = (24 × 100/110) - 24 = ₹2.18 (A)
(9) Variable Overhead Volume Variance = 20 × 10/100 = ₹2 (F)
(10) Variable Overhead Efficiency Variance = (20 × 90/100) - (24 × 100/110) = ₹3.82 (A)
(11) Variable Overhead Cost Variance = 20-24 = ₹4 (A)
(12) Fixed Overhead Price Variance = (18.50 × 100/110) – 18.50 = ₹1.68 (A)
(13) Fixed Overhead Efficiency Variance = 15 - (18.50 × 100/110) = ₹1.82 (A)
(14) Fixed Overhead Cost Variance = 15 – 18.50 = ₹3.5 (A)

Profit Variance Statement:

Budgeted Profit		₹ 5.00
Add: Sales Price Variance	21.6	
Prime Cost Volume Variance	8.00	
Variable Overhead Volume Variance	2.00	31.60
		36.60
Less: Sales Volume Variance	12.00	
Prime Cost Price Variance	11.88	
Prime Cost usage Variance	7.22	
Variable Overhead Price Variance	2.18	
Variable Overhead Efficiency Variance	3.82	
Fixed Overhead Price Variance	1.68	
Fixed Overhead Efficiency Variance	1.82	40.60
Actual Loss		4.00