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) Write about the four perspectives of Balanced Scorecard. [8]

(b) The selling price of product P is set at ₹ 1,500 for each unit and sales for the coming year are expected to be 500 units.
If the company requires a return of 15% in the coming year on its investment of ₹ 15,00,000 in product P. the TARGET cost for each unit for the coming year is.
(i) ₹ 930
(ii) ₹ 990
(iii) ₹ 1,050
(iv) ₹ 1,110 [3]

(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?
(i) ₹ 30,10,181
(ii) ₹ 15,23,312
(iii) ₹ 18,18,181
(iv) ₹ 17,60,500 [3]

(d) A company manufactures two products using common material handling facility. The total budgeted material handling cost is ₹ 60,000. The other details are:

	Product X	Product Y
Number of units produced	30	30
Material moves per product line	5	15
Direct labour hour per unit	200	200

Under activity based costing system the material handling cost to be allocated to product X (per unit) would be:
(i) ₹ 1,000
(ii) ₹ 500
(iii) ₹ 1,500
(iv) ₹ 2,500 [3]

(e) 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:
(i) 69.5%
(ii) 59.6%
(iii) 75.0%
(iv) 83.5% [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) **(iii) ₹1,050**

Target Cost for each unit = $1,500 - \left[\frac{15,00,000 \times 15\%}{500 \text{ units}}\right] = ₹1,050$

(c) **(iii) ₹18,18,181**

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

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) **(iii) ₹500**

Cost per material more = $\frac{60,000}{5+15} = ₹3,000$

X = Total Cost = 3,000 × 5 = 15,000

Cost per unit = $\frac{₹15,000}{30 \text{ units}} = 500$ per unit.

(e) **(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%

Section B

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

2. (a) Discuss different types of Bench-marking. [8]

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

Answer:

(a) **Types of Benchmarking:**

The different types of Benchmarking are:

(i) Product Benchmarking
(ii) Competitive Benchmarking
(iii) Process Benchmarking
(iv) Internal Benchmarking
(v) Strategic Benchmarking
(vi) Global Benchmarking

(i) Product Benchmarking (Reverse Engineering): is an age old practice product oriented reverse engineering. Every organization buys its rival's products and tears down to find out how the features and performances etc., compare with its products. This could be the starting point for improvement.

(ii) Competitive Benchmarking: This has moved beyond product-oriented comparisons to include comparisons of process with those of competitors. In this type, the process studied may include marking, finance, HR, R & D etc.

(iii) Process Benchmarking: is the activity of measuring discrete performance and functionality against organization through performance in excellent analogous business processes eg., for supply chain management-the best practice would be that of Mumbai Dubbawallas.

(iv) Internal Benchmarking: is an application of process benchmarking, within an organization by comparing the performance of similar business units or business processes.

(v) Strategic Benchmarking: differs from operational benchmarking in its scope. It helps to develop a vision of the changed organizations. It will develop core competencies that will help sustained competitive advantage.

(vi) Global Benchmarking: is an extension of Strategic Benchmarking to include benchmarking partners on a global scale. Eg., Ford Co. of USA benchmarked it's A/cs Payable functions with that of Mazda in Japan and found to its astonishment the entire function was managed by 5 persons as again 500 in Ford.

(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.

3. (a) Describe the objectives of SWOT Analysis and its advantages and criticisms. [8]

(b) Explain about the BCG Matrix. [8]

Answer:

(a) **The objectives of SWOT Analysis are:**

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

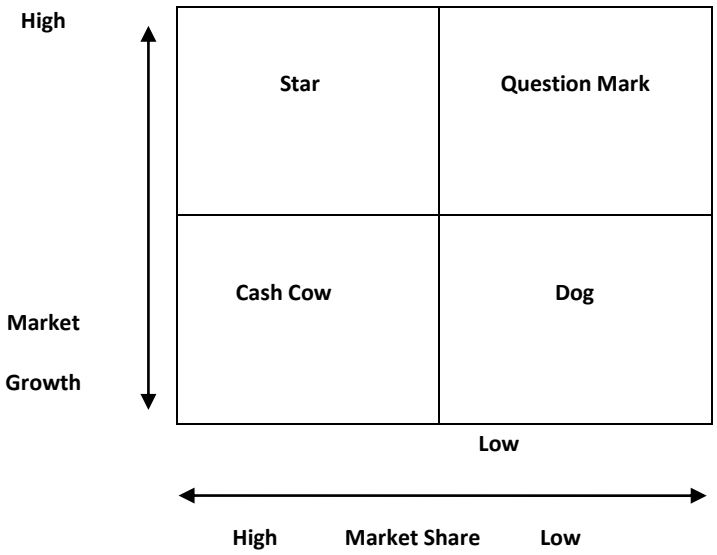
Advantages

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

Criticisms

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

(b) The Boston Consulting Group (BCG) have developed a matrix, based on empirical research, which analyses products and businesses by market share and market growth. This growth/ share matrix for the classification of products into cash cows, rising stars and questions marks is known as the Boston classification.



(a) Stars are products with a high share of a high growth, market. In the short term, these require capital expenditure, possibly in excess of the cash they generate, in order to maintain their market position, but promise high returns in the future.

(b) In due course, however, stars will become **cash cows**, with a high share of a low-growth market. Cash cows need very little capital expenditure and generate high levels of cash income. The important strategic feature cash cows are that they are generating high cash returns, which can be used to finance the stars.

(c) A **question mark** (sometimes called **problem child**) is a product in a high growth market, but has a low market share. A decision needs to be taken about whether the product justifies considerable expenditure in the hope of increasing its market share, or whether it should be allowed to die quietly as it are squeezed out of the expanding market by rival products. Because, considerable expenditure would be needed to turn a question mark into a star by building up market share, question marks will usually be poor cash generators and show a negative cash flow.

(d) Dogs are products with a low share of a low growth market. They may be ex-cash cows that have now fallen on hard times. Dogs should be allowed to die or should be killed off. Although they will show only a modest net cash flow or even a modest cash inflow, they are cash traps which tie up funds and provide a poor return on investment, and not enough to achieve the organization's target rate of return.

(e) There are also **infants** (i.e. products in an early stage of development) and **warhorse** (i.e. products that have been cash cows in the past, and still are making acceptable sales and profits even now) and **dodos** (low share, negative growth, and negative cash flow).

4. (a) List any 8 advantages of the Global Strategic Alliance. [8]

(b) What do you understand by Corporate Restructuring? Specify and discuss about Corporate Level Restructuring Strategies. [8]

Answer:

(a) **Advantages of the Global Strategic Alliance**

There are many specific advantages of a global strategic alliance. You can:

- Get instant market access, or at least speed your entry into a new market.
- Exploit new opportunities to strengthen your position in a market where you already have a foothold.
- Increase sales.
- Gain new skills and technology.
- Develop new products at a profit.
- Share fixed costs and resources.
- Enlarge your distribution channels.
- Broaden your business and political contact base.
- Gain greater knowledge of international customs and culture.
- Enhance your image in the world marketplace.

(b) Corporate restructuring refers to the process by means of which a firm makes an assessment and evaluation of itself at a point of time and refocuses itself to specific tasks of performance for improvements. It looks upon every activity as a green field project and question the firm's basic premise in order to engineer radical change rather than aim for just incremental gains. The concept is sometimes referred to as business process re-engineering as it involves consideration of at least: business portfolio revaluation; financial engineering; and organisational redesign.

Corporate level restructuring strategies can be thought of from two aspects: hardware and software.

Hardware restructuring involves redefining and/or modifying the structure of the organisation so as to make it more efficient in decision-making, responsiveness and intra-organisational communication etc. Some suggested strategies are:

- Identification of core competency and portfolio pruning
- Flattening of organisational layer
- Downsising
- Creation of self directed teams
- Benchmarking.

Corporate restructuring is the process of redesigning one or more aspects of a company. The process of reorganizing a company may be implemented due to a number of different factors, such as positioning the company to be more competitive, survive a currently adverse economic climate, or poise the corporation to move in an entirely new direction. Here are some examples of why corporate restructuring may take place and what it can mean for the company.

Restructuring a corporate entity is often a necessity when the company has grown to the point that the original structure can no longer efficiently manage the output and general interests of the company. For example, a corporate restructuring may call for spinning off some departments into subsidiaries as a means of creating a more effective management model as well as taking advantage of tax breaks that would allow the corporation to divert more revenue to the production process. In this scenario, the restructuring is seen as a positive sign of growth of the company and is often welcome by those who wish to see the corporation gain a larger market share.

However, financial restructuring may take place in response to a drop in sales, due to a sluggish economy or temporary concerns about the economy in general. When this happens, the corporation may need to reorder finances as a means of keeping the company operational through this rough time. Costs may be cut by combining divisions or departments, reassigning responsibilities and eliminating personnel, or scaling back production at various facilities owned by the company. With this type of corporate restructuring, the focus is on survival in a difficult market rather than on expanding the company to meet growing consumer demand.

Corporate restructuring may take place as a result of the acquisition of the company by new owners. The acquisition may be in the form of a leveraged buyout, a hostile takeover, or a merger of some type that keeps the company intact as a subsidiary of the controlling corporation. When the restructuring is due to a hostile takeover, corporate raiders often implement a dismantling of the company, selling off properties and other assets in order to make a profit from the buyout. What remains after this restructuring may be a smaller entity that can continue to function, albeit not at the level possible before the takeover took place.

In general, the idea of corporate restructuring is to allow the company to continue functioning in some manner. Even when corporate raiders break up the company and leave behind a shell of the original structure, there is still usually the hope that what remains can function well enough for a new buyer to purchase the diminished corporation and return it to profitability.

5. (a) What are transformational and transactional leadership style? [8]

(b) A captain of a cricket team has to allot five middle batting positions to five batsmen. The average runs scored by each batsman at these positions are as follows:

Batting Position						
		III	**IV**	**V**	**VI**	**VII**
Batsmen	**A**	**40**	**40**	**35**	**25**	**50**
	B	**42**	**30**	**16**	**25**	**27**
	C	**50**	**48**	**40**	**60**	**50**
	D	**20**	**19**	**20**	**18**	**25**
	E	**58**	**60**	**59**	**55**	**53**

Make the assignment so that the expected total average runs scored by these batsmen are maximum. [8]

Answer:

(a) **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.

(b)

	III	IV	V	VI	VII
A	40	40	35	25	50
B	42	30	16	25	27
C	50	48	40	60	50
D	20	19	20	18	25
E	58	60	59	55	53

Loss Matrix

20	20	25	35	10
18	30	44	35	33
10	12	20	0	10
40	41	40	42	35
2	0	1	5	7

Row Operation

10	10	15	25	0
0	12	26	17	15
10	12	20	0	10
5	6	5	7	0
2	0	1	5	7

Column Operation

10	10	14	25	0
0	12	25	17	15
10	12	19	0	10
5	6	4	7	0
2	0	0	5	7

Minimum No. of lines

	BATTING POSITIONS				
BATSMAN	III	IV	V	VI	VII
A	10	10	14	25	0
B	~~0~~	~~12~~	~~25~~	~~17~~	~~15~~
C	10	12	19	0	10
D	5	6	4	7	0
E	~~2~~	~~0~~	~~0~~	~~5~~	~~7~~

As the minimum number of lines are not equal to order of matrix, let's take steps to increase the number of zeros.

BATSMAN	BATTING POSITIONS				
	III	IV	V	VI	VII
A	6	6	10	25	0
B	0	12	25	21	19
C	6	8	15	0	10
D	1	2	0	7	0
E	2	0	0	9	11

Minimum No. of lines

BATSMAN	BATTING POSITIONS				
	III	IV	V	VI	VII
A	6	6	10	25	0
B	0	12	25	21	19
C	6	8	15	0	10
D	1	2	0	7	0
E	2	0	0	9	11

As the minimum number of lines are equal to order of matrix, optimal assignment should be made.

Optimal Assignment

BATSMAN	BATTING POSITIONS				
	III	IV	V	VI	VII
A	6	6	10	25	[0]
B	[0]	12	25	21	19
C	6	8	15	[0]	10
D	1	2	[0]	7	0
E	2	[0]	0	9	11

Maximum Runs

Batsman	Position	Runs
A	VII	50
B	III	42
C	VI	60
D	V	20
E	IV	60
TOTAL		232

6. (a) What are the benefits of ERP. **[8]**

(b) The usual learning curve model is $Y = ax^b$ where

Y is the average time per unit for x units.

a is the time for first unit

x is the cumulative number of units

b is the learning coefficient and is

equal to $\frac{\log 0.8}{\log 2}$ = -0.322 fo a learning rate of 80%

Given that a = 10 hours and learning rate 80%, you are required to Calculate:

(i) The average time for 20 units.

(ii) The total time for 30 units.

(iii) The time for units 31 to 40.

Given that log 2 = 0.301, Antilog of 0.5811 = 3.812

log 3 = 0.4771, Antilog of 0.5244 = 3.345.
log 4 = 0.6021, Antilog of 0.4841 = 3.049. **[8]**

Answer:

(a) The benefits accruing to any business enterprise by implementing an ERP package are unlimited.

1. Product Costing : Determination of cost of products correctly, is quite critical for every industry. ERP supports advance costing methods, including standard costing, actual costing and activity –based costing. Additionally, all costing methods and information can be fully integrated with finance. This provides the company with essential financial information for monitoring controlling costs.
2. Inventory Management : ERP can be used in multi-national, multi – company, and multi—site manufacturing and distribution environments. This system simplifies complicated logistics by allowing one to plan and manage companies in different countries as a single unit and its advanced functionality allows one to process product and financial information flows in several different ways. Enterprise and managing the basis data required to effectively run one's business is an important start for effective warehouse management. The basis data includes warehouse, locations, items containers, lot and serial number, units of measures (including conversion), alias numbers, replacement and substitute items and more. Inventory reporting supports all reporting of specific and general types of stock transaction such as various types of stock transfers, re-classification, ID changes and physical inventory results. Additionally, functions are available for managing different stock and purchase requisitions as well as supporting the selection of appropriate locations for receipts. Inventory valuation involves both warehouse management and cost accounting. ERP supports several valuation methods including standard cost, average cost, FIFO and batch—specific prices.
3. Distribution & Delivery : Delivery and distribution in ERP lets one to define logistics processes, flexibly and efficiently to deliver the right product from the right warehouse to the right customer at the right time –every time. To the customer, the most important element of quality is one-time delivery. It doesn't matter how well a product is made if arrives late. Processing distribution or acquisition orders involves several closely related activities.
4. E – Commerce : Internet enables ERP offers Internet, Intranet and extranet solutions for business, business to consumer, employee self-service and more.
5. Automatic Control : It ensure automatic quality control procedure.
6. After Sales Service : It ensures better after sales service.
7. Improvement in Production Planning : It improved production planning.
8. Quick response : It enables quick response to change in business operations & market conditions.
9. Cumulative Edge's : It helps to achieve competitive advantages by improving business process.

(b) (i) $Y = AX^b$

$Y = 10(20)^{-0.322}$

Taking log on both sides

$\log Y = \log 10 + \log 20^{(-0.322)}$

$\log Y = \log 10 - (0.322) \log 20$

$= 1 - (0.322) \log 20$

$= 1 - (0.322) \times (1.3010)$

= 1-0.41892 = 0.5811
Log y = 0.5811
Y = Anti log (0.5811) = 3.812 hrs (average time)

(ii) Log y = log 10 + log $30^{(-0.322)}$
Log y = 1-(0.322) x (1.4771)
= 1 - (0.4756) = 0.5244
Y = anti log (0.5244) = 3.345 hrs (average time)
Total time = 3.345 x 30 = 100.35 hrs.

(iii) Log y = log 10 + log $40^{(-0.322)}$
= 1 - (0.322) × (1.6021)
Log y = 0.4841
Y = anti log (0.4841) = 3.049 hrs
Total time = 40 x 3.049 = 121.96 hrs.
Time from 31 to 40 units = 121.96 – (100.35) = 21.61 hrs.

7. (a) Study Horse Ltd., a cycle manufacturing company, has drawn up a programme for the manufacture of a new product for the purpose of fuller utilisation of its capacity. The scheme envisages the manufacture of baby tricycle fitted with a bell. The company estimates the sales of tricycles at 10,000 during the first year and expects that from the second year onwards the sales estimates will stabilise at 20,000 tricycles. Since the company has no provision for the manufacture of the small bells is initially proposed to be met by way of purchase from the market, at ₹ 8 each.

However, if the company desires to manufacture the bell in its factory by installation of new equipment, it has two alternative proposals as under:

	Installation of Super-X Machine	Installation of Janata Machine
Initial Cost of machine	**₹ 3,00,000**	**₹ 2,00,000**
Life	**10 years**	**10 years**
Fixed overheads other than depreciation on machines (per annum)	**₹ 54,000**	**₹ 28,000**
Variable expenses per bell	**₹ 4.00**	**₹ 5.00**

Depreciation on machine should be charged on straight-line basis.

Required:

(i) For each of the two levels of output namely 10,000 and 20,000 bells state with suitable workings whether the company should purchase the bells from market or install new equipment for manufacture of bells. If your decision is in favour of the installation of new equipment, which of the two new machines should be installed?

(ii) What would be your decision in case the forecast of requirement from the second year onwards is estimated at 40,000 bells instead of 20,000 bells.

(iii) At what volume of bells will the installation of the two machines break-even.

[8]

(b) The management accountant of X ltd. has prepared the following estimates of working results for the year ending 31st December, 2014 for the purpose of preparing the budgets for the year ending 31st December, 2015.

		Year ending 31/12/2014
Direct material	**₹ / unit**	**16.00**
Direct wages	**"**	**40.00**
Variable overheads	**"**	**12.00**
Selling price	**"**	**125.00**
Fixed expenses	**₹**	**6,75,000 p.a.**
Sales	**₹**	**25,00,000 p.a.**

During the year 2015, it is expected that the material prices and variable overheads will go up by 10% and 5% respectively. As a result of re-organisation of production methods the overall direct labour efficiency will increase by 12% but the wage rate will go up by 5%. The fixed overheads are also expected to increase by ₹ 1,25,000.

The technical director states that the same level of output as obtained in 2014 should be maintained in 2015 also and efforts should be made to maintain the same level of profit by suitably increasing the selling price.

Required:

(i) Present an income statement for the year 2014.

(ii) Find the revised price and the percentage of increase in the price for 2015 if the Technical Directors' views are accepted. [8]

Answer:

(a) **Solution (i) and (ii)**

Statement showing computation of Comparative Costs of 3 alternatives at 3 levels of output.

	Buying			Super – X			Janata		
	10,000	20,000	40,000	10,000	20,000	40,000	10,000	20,000	40,000
Variable Cost	80,000	1,60,000	3,20,000	40,000	80,000	1,60,000	50,000	1,00,000	2,00,000
Fixed Cost	-	-	-	84,000	84,000	84,000	48,000	48,000	48,000
	80,000	1,60,000	3,20,000	1,24,000	1,64,000	2,44,000	98,000	1,48,000	2,48,000

From the above computation we can say that

1. At 10,000 level of output, it is cheaper to buy the bell from market
2. At 20,000 level of output, it is better to install Janata machine for manufacturing of bells.
3. At 40,000 level of output, it is better to manufacturing the bell by installing Super- x machine.

(iii) The output at which costs are break- even or equal (or) indifference level

$$= \frac{\text{Difference in Fixed Cost}}{\text{Difference in Variable Cost-pev.per unit}}$$

= 84,000 – 48,000 = 36,000 bells.

(b) (i) Statement showing computation of profit for the year 2012:

		₹
(I) SP		125
(II) Variable Cost		68
(III) Contribution		57
(IV) Total Contribution	25,00,000 × 57/125	11,40,000
(V) Fixed Expenses		6,75,000
(VI) Profit		4,65,000

(ii) Technical director's proposals:

Variable Cost		₹
Raw Material	16 × 110 ÷ 100	17.6
Wages	40 × 105 ÷ 100 × 100/112	37.5
Variable OH	12 × 105 / 100	12.6
Total VC per unit	(20,000 × 67.70)	13,54,200
FC	6,75,000	
(+) Addnl.	1,25,000	8,00,000
Total Cost		21,54,000
Profit		4,65,000
Sales		26,19,000

SP = 26,19,000 / 20,000 = ₹130.95

% increase in SP = 5.95 / 125 × 100 = 4.761%.

8. The summarised results of a company for the two years ended 31st December 2015 and 2014 are given below: -

	2015	**2014**
	₹ lacs	**₹ lacs**
Sales	**770**	**600**
Direct Materials	**324**	**300**
Direct Wages	**137**	**120**
Variable Overheads	**69**	**60**
Fixed Overheads	**150**	**80**
Profit	**90**	**40**

As a result of re-organisation of production methods and extensive advertisement campaign use, the company was able to secure an increase in the selling prices by 10% during the year 2015 as compared to the previous year.

In the year 2014, the company consumed 1,20,000 Kgs. of raw materials and used 24,00,000 hours of direct labour. In the year 2015, the corresponding figures were 1,35,000 kgs. of raw materials and 26,00,000 hours of direct labour.

You are required to: -

Use information given for the year 2014 as the base year information to analyse the results of the year 2015 and to show in a form suitable to the management the amount each factor has contributed by way of price, usage and volume to the change in profit in 2015. [16]

Answer:

Sales Price Variance =	$770 - \left(770 \times \frac{100}{110}\right)$	= 70 (F)
Sales Volume variance =	$770 \times \frac{100}{110} - 600$	= 100 (F)
% increase in Volume =	$\frac{100}{600} \times 100$	= 16.6667%
Sales Value Variance =	770 – 600	= 170 (F)
Material Cost Variance =	300 – 324	= 24 (F)
Material Volume Variance =	$300 \times \frac{1}{6}$	= 50 (A)

Material Price Variance =	$\frac{3,00,00,000}{1,20,000}$	= ₹250
Material Expected to be used =	$\frac{1,20,000}{600} \times 700$	= 1,40,000 kg.
Material usage Variance =	5,000 × 250	= 12.5 (F)
Material price Variance =	50 – 24 – 12.5	= 13.5 (F)
Labour Cost Variance =		17(A)
Labour Volume Variance =	$\frac{120}{6}$	= 20 (A)
Labour Rate Variance =	$\frac{1,20,00,000}{24,00,000}$	= ₹5
Labour Hours Expected to be used =	$\frac{24,00,000}{600} \times 700$	= 28,00,000
Labour Efficiency Variance =	2 × 5	= 10 (F)
Labour Rate Variance	20 – 17- 10	= 7(A)
Variable OH Cost Variance =		9 (A)
Variable Volume Variance Overhead =	$\frac{60}{6}$	= 10 (A)
Variable OH Efficiency Variance =	2,00,000 × 2.5	= 5 (F)
Variable OH Expenditure Variance =	10 – 9 – 5	= 4 (A)
Fixed OH Cost Variance	70(A)	

Profit reconciliation Statement

Profit for 2014			40
(+) Sales variances =	Price Volume	70 100	
Material =	Usage Price	12.50 13.50	
Labour =	Efficiency	10.00	
Variable OH =	Efficiency	5.00	211
			251
Material =	Volume	50	
Labour =	Volume	20	
	Rate	7	
Variable OH =	Volume	10	
	Expenditure	4	
Fixed OH =	Cost	70	(161)
Profit for 2015			90