CA Final - SCM&PE
May 2022 Exam - Suggested Answers

Question No. 1 is compulsory.

Candidates are also required to answer any **four** questions from the remaining **five** questions.

Working notes should form part of the answer.

No statistical or other table will be provided with this question paper.

Question 1

AB Electronics Limited is a well-established manufacturing company manufactures household electronic gadgets like Air Conditioners, Refrigerators, Washing Machines etc. and almost all types of kitchen appliances. Company's main motto is to maintain the quality, for the said purpose company follows Total Quality Management (TQM). It is well known for its quality products. In terms of quality, goodwill of the company is very high. As company never compromises in quality, customers trust in company's product. Company is also able to charge good prices from customers due to their quality and brand name.

The management of AB Electronics Limited has pointed out that since last two years company's sales are decreasing continuously. Customers are not showing interest in their products and company is going on at par despite of good quality products and brand name, company is not able to create its products demand. Company investigated its internal departments to see whether there is an issue of quality. They spend an extra amount of 1% of its cost on testing the products for their quality check and also make a test check on inward and outward materials. As a result of all these, company found that everything is as per its standard.

To resolve this problem, company decided to decrease its selling price for various products so that demand can be increased. In view of this company has decreased its selling price by 5% but decrease in selling price does not affect much. As company has a good name in the market and well known in the market, increase in marketing and advertisement expenses is also not justified. Human resources of company are also satisfied with company's policies for them. Company has a good relationship with the workers and also pay a handsome remuneration to them. Internal working atmosphere of company is up to standard and workers work as team members and there are no issues with unions and company employs skilled workers.

Management of company is not able to find out the problem as to why their sales are decreasing despite of good quality and at best prices, so, they decided to appoint a team of experts to point out the problem. The experts team investigate the internal procedures as well as make surveys of market and also take feedback from customers, then they observe that now a days in modern era there are products with new artificial intelligence which makes life easy. They are easy to use and more efficient and also energy savers and have all features to attract customers and provide more value for money to customer. In modern urban life, fully automatic electronic devices which requires fewer human efforts & time and operates on artificial intelligence are preferred. People are more interested in products which they can operate at remote locations using wireless facility.

Observations of the expert team are as follows :

1. Products of AB Electronics Limited are not as per latest technology and company is repeatedly manufacturing the same products since its inception.
2. AB Electronics Limited's products are not based on wireless facility technology and not much user friendly.
3. To maintain the quality and durability AB Electronics Limited uses heavy materials demanding large space and extra weight.

According to the expert's team :

The company is doing well in internal processes and also working atmosphere is good and became a fame since last two decades and also follows TQM to some extent but as you know "Change is the law of world" but you have not updated your products with technology and pushing the company with outdated technology without considering the long-term sustainability. Quality matter much but features also matters. To resume your position back in the market you need to spend on R&D and not on advertisement or test check. If company manufactures goods with latest technology and according to modern era's need, it may beat its competitors because of its goodwill and brand name. So, we suggest you to update your processes and manufacture products with latest technology having easy to use and energy efficient features.

As management of AB Electronics Limited has to spend a huge amount and efforts to get back its position in the market, company wants to seek your opinion.

You are required :

(a) As per strategic position analysis where does the company stand. **(2 Marks)**

(b) Demonstrate the applicability of the Six C's of TQM in AB Electronics Limited. **(6 Marks)**

(c) Give your recommendation for implementation of Six Sigma techniques in AB Electronics Limited. **(6 Marks)**

(d) Currently at which phase of the life cycle in AB Electronics Limited product is going on and also list out of the uses of product life cycle. **(3 Marks)**

(e) "Change is the law of world." State these words in contrast of this situation. **(3 Marks)**

Answer 1 :

(a) Strategic Positioning of AB Electronics Ltd.

AB Electronics Limited is losing its high ranking, established position in the market due to its inability to keep pace with the impact of technological advances in its product range, now a days customers desires modern era products with artificial intelligence which is clearly a lack of understanding the external environment.

In addition, the observations of the expert team state that the products are not up-to-date technologically which means they are not having abilities, resources or latest skills that enable them to adopt technology. They obviously failed to invest in resources which are vital for success in business. However, company is having standard working atmosphere and a force of skilled workers which will make a smooth way for updation of new strategy.

Therefore, it is apparent that current strategy of AB Electronics is not a suitable fit with the strategic position.

Student Note : (For better understanding only)

The "strategic position" is concerned with the impact on strategy of the external environment, internal resources and competencies, and the expectations and influence of stakeholders. Together, a consideration of the environment, strategic capability, the expectations and the purposes within the cultural and political framework of the organisation provides a basis for understanding the strategic position of an organisation.

Firstly, organisations need to understand the external environment in terms of PESTEL and Porter's 5 forces. Secondly, the company has to consider what customers value in terms of product feature. In addition, it should consider whether it has resources and competencies to succeed in the market. Since threshold levels may change over time so the organisations may need to continue to invest in resources to simply stay in business. Finally, understanding the specific political and cultural context in which the organisation operates can have a significant impact on strategy. Such analysis enables the organisation to understand the ease or difficulty with which new strategies could be adopted.

(b) Demonstrate applicability of Six C's of TQM in AB Electronics Ltd.

Below are the criteria included in Six C's for successful implementation of Total Quality Management (TQM) :

(i) **Commitment :** A company has to be committed to improve quality not just at the operational level, but all across the organization levels. It is given that AB Electronics Ltd. does not compromise the quality due to which it has earned the trust of its customers of many years. This is a clear indication of commitment of AB Electronics Ltd. to quality.

(ii) **Culture :** A company must encourage individual contributions towards creativity and quality improvement. AB Electronics Ltd. has been producing good quality goods, has a policy of not compromising on quality (main motto), which indicates that it has a culture that promotes quality control.

(iii) **Continuous Improvement :** Total Quality Management is a process that needs to be monitored continuously. A company should always seek ways of improving the product. Here, AB Electronics Ltd. has fallen short, and it manufactured its products based on outdated technology. The company did not improve its product features to include the latest features like artificial intelligence, wireless facility, ease of use etc.

(iv) **Co-operation :** Total employee involvement and co-operation is paramount to develop improvement strategies and associated performance measures. It is given that AB Electronics Ltd. enjoys good internal working atmosphere, workers work as team members and that there are no issues with the unions. The employees are skilled and hence would be in a position to contribute towards process improvements where required. This indicates a co-operative and inclusive working environment.

(v) **Customer Focus :** Customers are both internal and external customers. Internal customers would be the employees of the company with whom mutual respect is necessary to preserve employee morale and employee participation. As mentioned before, AB Electronics Ltd. has a co-operative and inclusive working environment, hence the internal customer focus is sufficient.

External customers are the consumers of our goods and services. AB Electronics Ltd. has focused on quality and has earned the goodwill and reputation of the customers over many years. However, it has not kept itself abreast with the current need of the customers. "Quality matters but features also matter". AB Electronics Ltd. has had the shortcoming of not upgrading its product features to match the current requirements of the customer. This has resulted in steady decline in sales despite producing good quality products. It now has to develop a system to periodically connect with the customers to become aware of the current needs and trends in the market.

(vi) **Control :** Documentation, procedure and awareness of current best practices are essential for proper implementation and functioning of TQM. AB Electronics Ltd. already has monitoring procedures to maintain quality control of its current manufacturing methods. Similarly controls have to be created to monitor the process and procedures following upgradation of its manufacturing process.

(c) Recommendation for implementation of Six Sigma techniques at AB Electronics Ltd. :

DMADV and DMAIC are fundamental six sigma methodologies for improving quality of product or process.

DMAIC

- DMAIC stands for Define, Measure, Analyze, Improve and Control. This technique is used for existing products and processes.
- It is generally used when a product or process exists and it needs to be improved to align with customer needs.
- It is generally used in scenarios when competitors' actions are unchanging, customer behaviour is unchanging and the technology is stable.
- Needs of the customers within the market in which the company operates has changed and is changing constantly. The competitor's response is very dynamic. Technology is also constantly changing to suit customer's needs.
- In case of AB Electronics Ltd, the products are outdated and need to be upgraded substantially to include modern technology using artificial intelligence. Hence DMAIC will not be suitable for implementation at AB Electronics Ltd.

DMADV

- DMADV stands for Define, Measure, Analyze, Design and Verify. This technique is used for new products and processes.
- It is a proactive process where the project has strategic importance.
- Multiple processes need to be altered.
- Consumer behaviour is constantly changing, as is the competitors' response to this dynamic environment.
- Technology is constantly growing.
- Hence, products need to be constantly improved and upgraded.

AB Electronics Ltd. operates in such environment where technology is constantly changing to suit customers' needs and hence the company can use DMADV to implement its Six Sigma methodologies.

The steps of DMADV include :

(i) Define the project goal.

(ii) Measure and determine the customer's needs and specifications.

(iii) Analyze process in detail to meet the customer's needs.

(iv) Design the process in detail to meet the customer's needs.

(v) Verify the design performance and ability to meet the customer's needs.

(d) Product life cycle of AB Electronics Ltd. and the uses of product life cycle :

The products manufactured by AB Electronics Ltd. are outdated and hence sales have been declining. Customers' tastes are constantly changing. Given this, the products are in the **Decline Stage** of product life cycle. This is the last stage of product life cycle, where the company would phase out the products or will sell them in limited quantity to a niche group of customers who still have a demand for it.

The uses of product life cycle are as follows :

(i) As a Planning tool, it characterizes the marketing challenges in each stage and poses major alternative strategies, i.e. application of kaizen.

(ii) As a Control tool, the product life cycle concept allows the company to measure product performance against similar products launched in the past.

(iii) As a Forecasting tool, it is useful because sales histories exhibit diverse patterns and the stages vary in duration.

(e) State – Change is the law of the world

AB Electronics Ltd. is a reputed company manufacturing quality products for which it has earned enormous goodwill from the market. It has been focused on quality, given the existing standards of operations within the company. It does spend on quality checks and testing. However, the market has been dynamic with changing technology and customer needs. Hence while quality matters, features also matter. Hence the company has to upgrade its products to modern era requirements for long term sustainability. The company has to be in constant touch with these dynamics. The latest technical features need to be incorporated into the product. The company has to constantly keep a tab on the customers' current needs. They need to proactively take steps to address these needs and improve the product offering to the customers. Unless the company remains nimble to change, the demand for its products is bound to reduce and eventually the company would have to shut down operations. Hence, "change is the law of the world".

- **Student Note :**
- Conceptually correct brief explanation in sufficient for each step.
- Alternative points and reasoning are also possible.

Question 2 (a) : [10 Marks]

A Limited is manufacturing a part, which is used in computer. Presently the company follows traditional system of the purchasing, quality check, storage and processing. CEO of the company has suggested that by implementing Just in time inventory system for material purchases, the company will benefit a lot. As per present policy of inventory, raw material required for 2 months production and finished goods equivalent to the 2 weeks production are kept in stock. Other information are as under :

- The Average inventory of raw material is held by the company throughout the year. Purchase cost of the raw material is ₹ 15 Crores for the year. Now on applying Just in time, the company decided to take its production requirement directly from the suppliers. This will result into an increase of 10% in the cost of raw material purchased but will save the inventory holding cost by ₹ 70 Lakhs. Raw material inventory insurance will not be required now, which is ₹ 1.40 Crores per annum. Savings in other overheads will be ₹ 20 Lakhs per annum.
- Projected production for the year is 2,00,000 Units. The company plans to maintain inventory of finished goods as per present policy only. There is a possibility of production stoppages due to unavailability of raw material from the suppliers. This could happen due to delay in delivery by the suppliers. The labour works in one 8-hour shift per day and will remain idle if there is no material to work on. Due to stoppage of production for this reason, it is possible to have stockout of 4,000 units in a year. Stockout represents lost sales opportunity due to unavailability of finished goods i.e. the customer walks away without purchasing any product. However, if overtime is done by labour, the stockout may be reduced to 2,500 units. This overtime will cost ₹ 20 lakhs.
- Currently, sale price is ₹ 6,000 per unit. Raw material procurement cost is ₹ 1,000 per unit, that will increase by 10% under just in time inventory system. Other variable overheads are ₹ 3,250 per unit.

Required :

A. Advise on :

(i) Acceptability of the company regarding implementation of the Just in time procurement system. **(4 Marks)**

(ii) Necessity of overtime cost be incurred to reduce Stockout. **(2 Marks)**

B. RECOMMEND factors that the management needs to consider before implementing the just in time procurement system. **(4 Marks)**

Answer 2 (a) :

My view on ICAI Answer :

I was not satisfied with ICAI answer, hence I have altered the answer based on my own logic. A footnote was given by ICAI at the end of their suggested answer, that JIT advice can be offered based on current production level. I have used this option in the answer developed by me.

(i) Whether to implement Just in time procurement system or not :

Expected Contribution per unit in future :

Particulars	₹
Sales price per unit	6,000
Less : Material cost after 10% increase [1,000 + 10%]	1,100
Less : Other variable cost	3,250
∴ Contribution per unit	1,650

Incremental Profit / (Loss) on implementing JIT system :

Particulars	₹ lakhs
Increase in raw material cost [1,500 x 10%]	(150)
Saving in inventory holding cost	70
Saving in raw material inventory insurance cost	140
Saving in other overheads	20
Loss of contribution due to stockout [4,000 units x 1,650]	(66)
∴ Incremental profit	14

Advice : Considering an incremental profit of ₹ 14 lakhs, we should implement JIT system.

(ii) Necessity of overtime cost be incurred to reduce stock out :

Overtime cost can reduce stockouts from 4,000 units to 2,500 units. It means, we can meet the additional demand of 1,500 units of the customers.

Contribution earned from selling these 1,500 units = 1,500 x ₹ 1,650 = ₹ 24,75,000.

However, overtime will cost us additional ₹ 20,00,000. This will result in an additional savings of ₹ 4,75,000, hence overtime should be done.

(B) RECOMMENDATION

The company plans to eliminate its raw material inventory altogether. Raw material will be delivered as per production schedule directly at the factory shop floor, from where production will begin. The management should therefore carefully consider the following points:

(a) The entire production process has to be detailed and integrated sequentially. This is essential to know because it should be known in advance when in the sub-assembly process each raw material is required and in what quantity.

(b) Since production is dependent on delivery and quality of raw material, heavy reliance is being placed on suppliers. They should be able to guarantee timely delivery of raw material of the appropriate quality. The company is paying a premium of 10% of original cost to ensure the same. Lost sales opportunities due to unavailability of raw material or non-conformance of the material can result in substantial losses to the company. To hedge its opportunity loss, the management and suppliers should agree on penalties to the supplier if there is any delay or non-conformance in quality of materials beyond certain thresholds.

(c) Accurate prediction of sales trends is important to determine the production schedule and finished goods planning.

(d) Continuous monitoring of the system even after implementation is essential to ensure smooth operations. Management commitment and leadership support is essential for its successful implementation and working.

Question 2 (b) : [10 Marks]

ORAL LTD. is engaged in marketing of wide range of electronic goods. The area is divided in four zones – North, South, East and West. Each zone has zonal sales head. The company fixes annual sales target for zonal heads. The cost of sales target fixed during 2021 is as under :

North	₹ 25,00,000
South	₹ 22,00,000
East	₹ 26,50,000
West	₹ 20,00,000

The Zonal sales managers are paid commission @ 10% on sales made by them. During 2021 the sales commission paid for each zone is as under :

North	₹ 3,00,000
South	₹ 2,90,000
East	₹ 3,10,000
West	₹ 2,40,000

The summary of the variances calculated for each zone are as under :

Particulars	North	South	East	West
Sales Price Variance	40,000 F	60,000 A	50,000 A	20,000 A
Sales Volume Variance	60,000 A	2,60,000 F	1,50,000 F	80,000 F
Sales Margin Mix Variance	1,40,000 A	80,000 F	1,70,000 F	30,000 A

The Company wants to award an incentive to the best performer among all the zonal managers on the basis of :

1. Contribution earned to the company.
2. Achievement of the sales target.
3. Sales margin achieved against target margin.

Required :

(A) CALCULATE the amount of sales target fixed and the actual amount of contribution earned in case of each of the zonal sales manager. **(5 Marks)**

(B) ANALYZE the overall performance of these zonal sales managers taking three relevant base factors and recommend the best performer. **(4 + 1 = 5 Marks)**

Answer 2 (b) :

Statement Showing "Sales Target Fixed & Actual Margin / Contribution :

Particulars	**Zone (₹)**			
	North	**South**	**East**	**West**
(a) Commission Earned	3,00,000	2,90,000	3,10,000	2,40,000
(b) Actual Sales [Commission / 10%]	30,00,000	29,00,000	31,00,000	24,00,000
(c) Sales Price Variance	40,000 (F)	60,000 (A)	50,000 (A)	20,000 (A)
(d) Sales Volume Variance	60,000 (A)	2,60,000 (F)	1,50,000 (F)	80,000 (F)
(e) Sales Target [b + c + d] (Budgeted Sales)	**30,20,000**	**27,00,000**	**30,00,000**	**23,40,000**
(f) Cost of Sales Target	25,00,000	22,00,000	26,50,000	20,00,000
(g) Budgeted Margin [e - f]	5,20,000	5,00,000	3,50,000	3,40,000
(h) Sales Margin Mix Variance	1,40,000 (A)	80,000 (F)	1,70,000 (F)	30,000 (A)
(i) Sales Price Variance	40,000 (F)	60,000 (A)	50,000 (A)	20,000 (A)
(j) Actual Margin [g + h + i]	**4,20,000**	**5,20,000**	**4,70,000**	**2,90,000**

ICAI Note : Since no information has been given about Sales Margin Quantity Variance, therefore for calculating actual margin the same has been assumed to be zero.

My view on the above answer :

Calculation of budgeted sales target is correct. We have two variances to analyse Actual Sales & Budgeted Sales i.e. Sales Price Variance and Sales Volume Variance. Both are given.

However, to analyse the difference between Budgeted Profit Margin and Actual Profit Margin, we need three variances i.e. (1) Sales Price Variance (2) Cost Price Variance and (3) Profit Volume Variance - further sub-divided into (a) Profit Mix Variance and (b) Profit Quantity Variance.

Out of the above, we don't have Cost Price Variance and Profit Quantity Variance. Still ICAI has done the calculation of Actual profit margin. With due respect to ICAI, I think that the calculation of Actual Profit Margin is wrong.

Statement Showing "Evaluation of the Performance of Zonal Sales Managers"

Particulars	Zone			
	North	**South**	**East**	**West**
Contribution earned to the company				
(a) Margin Earned (₹)	4,20,000	5,20,000	4,70,000	2,90,000
(b) Rank	**III**	**I**	**II**	**IV**
Efficiency towards the Target Sales				
(a) Whether target achieved	No	Yes	Yes	Yes
(b) Actual Sales to Target Sales Ratio	99.34%	107.41%	103.33%	102.56%
(c) Rank	**IV**	**I**	**II**	**III**
Sales Margin Ratio				
(a) Budgeted Margin Vs Sales Target Ratio	17.22%	18.52%	11.67%	14.53%
(b) Actual Margin Vs Actual Sales Ratio	14.00%	17.93%	15.16%	12.08%
(c) Achievement [b/a x 100]	81.31%	96.82%	129.91%	83.14%
(d) Rank	**IV**	**II**	**I**	**III**

ANALYSIS

The Sales Margin ratio helps to track how much margin firm is making from its sales. Zone EAST is yielding a ratio of 15.16% against the target ratio of 11.67% which is the good indicator of performance. At the same time, other zones are not performing well as they have clearly failed to achieve their target ratio. For instance NORTH Zone is yielding a ratio of 14% against the budgeted figure of 17.22% while SOUTH Zone is almost near to this ratio and West zone is also falling behind by 2.45%.

On the basis of actual margin earned, SOUTH Zone is the best zone since it is the highest contributor (30.59%) to the total margin of the ORAL while EAST Zone is contributing 27.65% and NORTH Zone is contributing 24.71%. Zone WEST is contributing only 17.05% which is the lowest among all.

NORTH Zone has marginally failed to achieve the target sales while SOUTH has obtained a figure 7.41% over and above the targeted sales. Zone EAST and WEST have also successfully achieved the targeted sales.

Conclusion

NORTH and WEST Zone have been ranked either III and IV in each standard criterion while SOUTH & EAST Zone are standing at either I or II in these criteria. SOUTH Zone is having highest sales as well as highest margin amongst all zones, but it failed to achieve target margin ratio.. Zone EAST is having superb margin vs. sales ratio as discussed earlier at the same time they have achieved targeted sales ratio. They are just behind SOUTH zone in target sales ratio and margin (in absolute term). On the basis of analysis, this can be concluded that **Zone EAST is best performer.**

Alternate View

SOUTH Zone is best as it is ranked 1st in terms of contribution earned to the company and achievement of the sales target and 2nd in percentage on sales margin achieved. But at the same time having highest sales margin ratio amongst all the zones and contributing highest total profit in rupee value.

My view on the above two answers of ICAI :

South Zone is the best performer.

Question 3 : [20 Marks]

SR Limited deals in readymade garments and its clients majorly include medium and large outlets. There are regular complaints from clients regarding delivery issues. As SR Limited understand the critical behaviour of clients and want to establish "Customer Profitability Analysis" (CPA) so that critical customers who are key factors can be recognized. SR Limited provide following information regarding its four major customers :

Particulars	**A**	**B**	**C**	**D**
No. of Units Sold	36,000	48,000	42,000	56,000
Contribution per unit	36	45	48	45
No. of purchase order	100	200	150	100
No. of deliveries (Normal)	3	4	4	5
Kilometre per delivery	100	50	250	350

Order Processing Cost - ₹ 12,000 Per Order
Product Handling Cost - ₹ 0.90 per unit
Transport Cost - ₹ 18 per Kilometre

Required :

(a) EVALUATE the Customer Profitability by calculating Total Profit as well as Profit Per Unit from each customer for SR Limited and INTERPRET each customer. **(4 + 4 = 8 Marks)**

(b) DEMONSTRATE three fundamental aspects of CRM to facilitate building relationship with profitable customer. **(6 Marks)**

(c) ENUMERATE two benefits of Customer Profitability Analysis (CPA) **(2 Marks)**

(d) DISCUSS the relevance of Customer Profitability Analysis in reference to Banking and Hotel sector. **(4 Marks)**

Answer 3 :

(a) Statement of Customer Profitability at SR Ltd. – Total and per unit profit for each customer :

Particulars	Customers			
	A	B	C	D
(a) No. of units sold	36,000	48,000	42,000	56,000
(b) Contribution per unit [Given]	36	45	48	45
(c) Total Contribution Margin [a x b]	12,96,000	21,60,000	20,16,000	25,20,000
(d) No. of purchase order [Given]	100	200	150	100
(e) Order Processing cost [12,000 x d]	12,00,000	24,00,000	18,00,000	12,00,000
(f) No. of deliveries (Normal)	3	4	4	5
(g) Kilometre per delivery	100	50	250	350
(h) Transport Cost [₹ 18 x f x g]	5,400	3,600	18,000	31,500
(i) Product Handling Cost [0.90 x a]	32,400	43,200	37,800	50,400
(j) Total marketing overheads [e + h + i]	12,37,800	24,46,800	18,55,800	12,81,900
(k) Profit / (Loss) per customer [c - j]	58,200	(2,86,800)	1,60,200	12,38,100
(l) Profit / (Loss) per unit [k / a]	1.62	(5.98)	3.81	22.11

Evaluation :

- "Customer D" is the most profitable customer both in terms of absolute total profit (₹ 12,38,100) as well as profit per unit ₹ 22.11 per unit. The 56,000 units sales volume generated for customer D accounts for (30.8%) of the total sales volume. With a contribution margin of ₹ 45 per unit amounting to a total of ₹ 25,20,000, this customer generates highest contribution in total as compared to others. Despite having highest sales volume, the number of purchase orders placed by this client is the lowest at 100 orders for the period. Hence order processing cost is at lowest level, contributing to the overall profitability generated from sales with this customer. The kilometres covered for each delivery is the highest for this customer at 350 kms per delivery with 5 deliveries for the period. Among the customers, Customer D has the highest delivery cost. In view of rising fuel prices, if SR Ltd. would like to trim the costs, it could negotiate lesser deliveries for the period. However, Customer D is a very important and profitable customer of SR Ltd. and hence negotiations must ensure that Customer D is completely satisfied with any revision in the product delivery schedule.

- The second most profitable customer for SR Ltd. is "Customer C". The 42,000 units sales volume generated for customer C accounts for (23.08%) of the total sales volume. With a contribution margin of ₹ 48 per unit total contribution generated from these sales amounts to ₹ 20,16,000. This customer generates highest contribution rate of ₹ 48 per unit of sales as compared to bigger customers like Customer D and Customer B. This may be due to better negotiation for selling price with the customer by SR Ltd. as compared to other customers. SR Ltd. can look into this synergy and try to apply it to other customers as well where feasible. Customer C places 50% more orders as compared to the largest customer, Customer D. Hence, to improve profitability by trimming costs, the SR Ltd. can negotiate for Customer C to place bulk orders that would reduce the number of orders for the period. Similarly, the number of kilometres per delivery is also higher as compared to Customer A and B. Hence in view of rising fuel prices, SR Ltd. may negotiate for lesser deliveries for this customer.

- The third most profitable customer for SR Ltd. is "Customer A". As compared to others, this customer generates the lowest sales volume at 36,000 units for the period. The contribution per unit at ₹ 36 per unit is also the lowest among the customers being analyzed. SR Ltd. can review the reasons for this low contribution margin. This could either be due to disadvantageous sale price negotiation with the customer (may be giving higher than normal discounts to Customer A). Profitability from sales to this customer can be substantially improved by acting upon the problem of lower contribution margin per unit.

- "Customer B" is a loss-making customer for SR Ltd. Despite having a second highest sales volume of 48,000 units for the period (26.4% of the total sales volume) and a relatively high contribution margin of ₹ 45 per unit, this customer generates a loss of ₹ 2,86,800 for the period, that is a loss of ₹ 5.98 per unit. The primary reason for the loss is the high number of purchase orders placed by Customer B. Customer B places 200 orders for the period which is double of the orders placed by the largest client Customer D. SR Ltd. could negotiate bulk orders to be placed, which can reduce the order processing cost substantially. If this is not feasible, SR Ltd. can then charge extra for the frequent orders placed by Customer B. This could significantly improve the profitability generated with this client.

Product handling cost of ₹ 0.9 per unit is a non-value adding expenditure. SR Ltd. should try to minimize this cost as much as possible in order to improve profitability.

My View : If we analyse the 3 types of costs, we will notice that majority cost is incurred on 'Order Processing'. It seems to be very high at ₹ 12,000 per order. SR Ltd. should find out the ways of reducing this cost first to improve profitability. Activity based cost management may be used to reduce this cost.

(b) CRM i.e. Customer Relationship Management is an integrated approach to manage and coordinate customer interactions by identifying, acquiring, and retaining customers. CRM enables businesses to understand and retain customers (through better customer experience) apart from attracting new customer, in order to increase profitably and decrease customer management costs. CRM system, comprises following three fundamental aspects to facilitate building relationship with profitable customers –

- **Operative CRM** takes care of individual transactions and is used by operational team. Interaction by customers are kept in the database and are used later by the services, sales, and marketing team for operational decisions. In SR Limited, the staff who is responsible to deal with customer must be given access to customer's details including all the information of activities performed earlier. This will enhance the SR Limited staffs efficiency to deal with customer-facing processes in a better way.

- **Analytical CRM** analyses the data created on the operational side of the CRM for evaluation and prediction of customer behaviour. In SR Limited, analytical CRM can highlight the patterns in customers' behaviour which will help sale team while pitching the product at SR Limited.

- **Collaborative CRM** ensures that information about customer must flow seamlessly throughout the supply chain, majority distribution channel; in form of collaborative effort by all associated department of SR Limited to increase the quality of services provided to customers. Increase in utility at customer end will result in increased loyalty. Collaborative CRM comprises interactive technology like email, digital media to simplify the communications between customers and staff which would help in building relationships.

(c) Benefits of Customer Profitability Analysis

The benefits of customer profitability analysis are as follows :

(i) It helps the supplier **to identify** which customers are eroding overall profitability and which customers are contributing to it.

(ii) It can help to provide a basis for constructive dialogue between buyer and seller to improve margins.

(d) DISCUSSION on relevance of 'Customer Profitability Analysis' in the Banking and Hotel sector.

Banking Sector

The customers in the banking industry are a varied lot, they can be classified and further sub-classified based on the types of loans segment categories, the length of loan period, the type of security provided or such other criteria as found appropriate by the bank. Customer Profitability Analysis helps banks to –

(i) Retain profitable customers and enhance customer experience by providing differentiated service or products.

(ii) Cross sell products to existing customers

(iii) Acquire new and profitable customers.

(iv) Make pricing determinations. For example, waive fees for profitable segments while ask for more collateral for customer segments where chance of default is higher.

(v) Migrate customers to more profitable products and services.

The banking environment is a competitive one. Hence banks need to provide timely and transparent customer service based on the customer's needs. This enhances customer experience that will differentiate the bank from its competitors.

The information system and accounting system of a bank should be customized to provide information for such an analysis.

Hotel Sector

Hotels operate in a dynamic, complex and competitive environment. Customer service is of paramount importance for successful business operations. At the same time, the industry is characterized by the intangible nature of customer service, the high capital and labour intensive commitments, high fixed cost structure and the erratic demand for perishable nature of product offerings like food and beverages. This is compounded by the extremely competitive nature of business where customer loyalty is not assured.

Customers are varied and need to be segmented based on suitable criteria some of which could be transient customers not travelling with any group, corporate business customers funded by their employers, wholesale booking agents or tour operators who make bulk bookings. Customer segmentation needs to be based on criteria suited to the hotel's requirements. Customers within a segment share certain traits and will respond similarly to targeted marketing strategies. Not every customer segment contributes towards the company's profits, hence customer profitability analysis is very important. It gives important insights about the behaviour and the needs of each customer segment.

To improve financial performance, hotel companies target multiple customer segments by different product and service offering. They can vary their pricing structure an example could be offering discounts on bulk booking or charging a higher price for a suite in a luxury hotel as compared to a similar suite in an economy or business travel hotel. Product offerings could differ, providing conference room facility in business hotel versus a spa service in a tourist hotel destination. All this can be aimed at retaining profitable customers through excellent customer service offering. At the same time, it can also be used to convert unprofitable customer segments into profitable ones by cross-selling products and services. The hotel must be able to differentiate itself from its competitors based on its customer service and enhanced customer experience.

It is important that the hotel information systems and accounting systems are able to capture and provide information based on different customers or market segments.

- **Note** : Conceptually correct brief explanation is sufficient for each step.

Question 4 (a) : [10 Marks]

Vasco Limited manufactures 3 products UV, DV and XV. Due to scarcity of machine hours, management of Vasco Limited is planning to adopt throughput accounting in the company. Information relating to products are as follows :

Particulars	**UV**	**DV**	**XV**
Selling price per unit	₹ 5,000	₹ 4,000	₹ 3,500
Material Cost	₹ 2,500	₹ 2,500	₹ 2,000
Machine Hours required	5	6	4
Maximum annual demand	3,000 units	4,000 units	2,000 units

Total factory cost is ₹ 1,05,00,000 and available machine hours are 35,000 hours.

Vasco Limited has to supply 2,500 units of product DV to Alfa Limited as per a court judgement which cannot be denied.

Required :

(i) Rank the products using throughput accounting and PREPARE a statement showing optimal mix for maximization of profit. **(5 Marks)**

(ii) Whether court judgement has affected the optimum plan of profit of the company, if yes, by which amount? **(2 Marks)**

(iii) BRIEFLY explain 3 operational measures of theory of constraints **(3 Marks)**

Answer 4(a) :

(i) Statement Showing Machine Hours

Product	**Maximum Demand**	**Machine Hours/Unit**	**Total Machine Hours**
UV	3,000 units	5	15,000
DV	4,000 units	6	24,000
XV	2,000 units	4	8,000
Total machine hours required to meet maximum demand			47,000
Machine hours available			35,000
Shortage of machine hours			12,000

'Machine hours' is the bottleneck activity.

Statement of Ranking

Particulars	**UV**	**DV**	**XV**
Selling Price per unit	₹ 5,000	₹ 4,000	₹ 3,500
Less: Material Costs per unit	₹ 2,500	₹ 2,500	₹ 2,000
Throughput contribution per unit	₹ 2,500	₹ 1,500	₹ 1,500
Machine Hours per unit	5	6	4
Throughput contribution per hour	₹ 2,500/5 = ₹ 500	₹ 1,500/6 = ₹ 250	₹ 1,500/4 = ₹ 375
Throughput Accounting (TA) Ratio (Throughput contribution per hour / Factory cost per hour)	500/300 = 1.67	250/300 = 0.83	375/300 = 1.25
Ranking	I	III	II

Factory Cost per hour = ₹ 1,05,00,000 / 35,000 hrs. = ₹ 300 per hour

Optimum Production Plan

Product	**No. of units**	**Machine hrs. Per unit**	**Total Machine hrs.**	**T/P per hr. ₹**	**Total T/P ₹**
DV (for Alfa)	2,500	6	15,000	250	37,50,000
UV	3,000	5	15,000	500	75,00,000
XV (Balance)	5,000/4 =1,250	4	5,000 (bal. fig.)	375	18,75,000
Total throughput contribution					1,31,25,000
Less: Total Factory Costs					1,05,00,000
Profit					**26,25,000**

My View on the above answer :

1. Ranking based on contribution per hour and based on TA ratio will remain the same.
2. While calculating profit, ICAI has deducted total factory cost. However, factory cost (DM + DL + FOH) includes the direct material cost, which is already deducted while calculating throughput contribution. Hence, it amounts to double deduction.
3. Working note showing 'Machine Hours' as a bottleneck activity is not required.

(ii) Had there been no court judgement product, XV can be fully produced = 2,000 units, which is the second rank product. The unfulfilled demand of product XV = 2,000 – 1,250 = 750 units, due to production of DV.

Machine Hrs. Required for 750 units of XV (750 x 4)	3,000 hrs.
Throughput Lost on Product XV (3,000 hrs. x 375)	₹ 11,25,000
Less : Throughput Earned on Product DV (3,000 hrs. x 250)	₹ 7,50,000
Throughput Lost	₹ 3,75,000

The court judgement has reduced the profit of the company by ₹ 3,75,000.

(iii) Operational Measures :

The theory of constraints focuses on revenue and cost management when faced with bottlenecks. It advocates the use of three key operational measures. These are :

Throughput	▪ Throughput as a TOC measure is the rate of generating money in an organization through Sales. ▪ Throughput = (Sales Revenue – Unit Level Variable Expenses) / Time ▪ Direct Labour Cost is viewed as a fixed unit level expenses and is not usually included.
Investment	▪ This is money associated with turning materials into Throughput and do not have to be immediately expensed. ▪ Includes assets such as facilities, equipment, fixtures and computers.
Operating Expenses	▪ Money spent in turning Investment into Throughput and therefore, represent all other money that an organisation spends. ▪ Includes direct labour and all operating and maintenance expenses.

Question 4 (b) : [5 Marks]

DISCUSS the effect of Budget difficulty on Performance Evaluation **(5 Marks)**

OR

Kingstorm & Co. manufactures industrial tools. Management is having emphasize on quality and well-known among customers. The following details are provided by the kingstorm :

Process Time	2 days for batch
Move time	0.5 days per batch
Wait time	3 days per batch
Inspection time	1.5 days per batch
Queue time	4.5 days per batch
Units per batch	40 units

You are required to :

(i) CALCULATE manufacturing Cycle Efficiency (MCE) and interpret it. **(2 Marks)**

(ii) Manufacturing Cycle Time **(1 Mark)**

(iii) Delivery Cycle Time **(1 Mark)**

(iv) CALCULATE the New Manufacturing Cycle Time and Manufacturing Cycle Efficiency (MCE) if queue time is reduced to 3 days using lean production. **(1 Mark)**

Answer 4(b) :

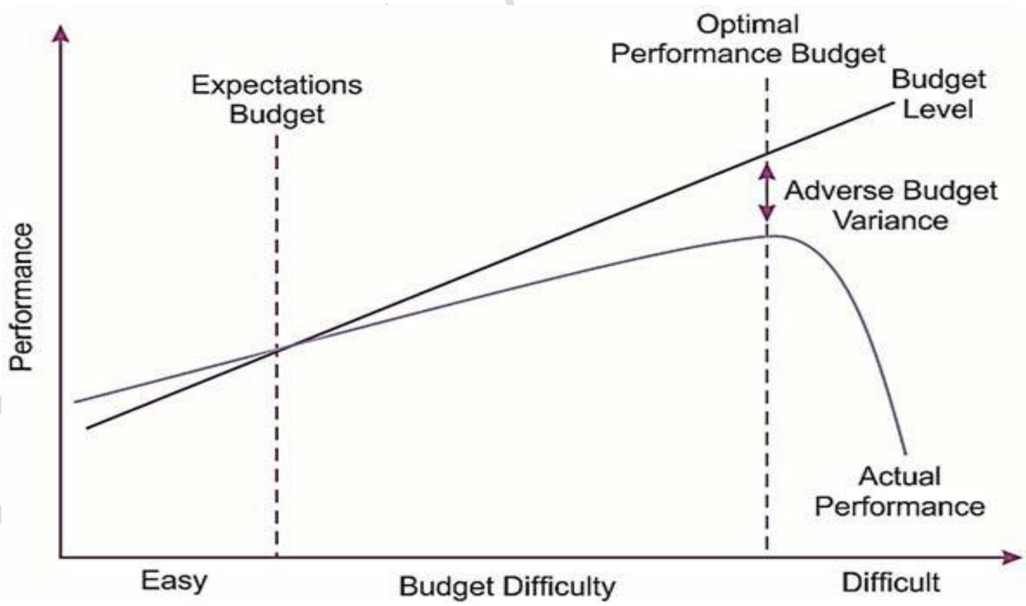
Discussion on effect of the Budget Difficulty on Performance :

Once budgets have been set as performance targets, surely performance will be evaluated. This can be simply a comparison of actual with budgeted performance or alternatively can be a more detailed comparison of actual performance with flexed budget performance, as is found in variance analysis and operating statements. The evaluation step is often one of the most argumentative as it is here that performance is likely to be criticised and employees will be sensitive. There are many potential difficulties :

- Budgets have no motivational effect unless they are accepted by the managers involved as their own personal targets.
- Up to the point where the budget is no longer accepted, the more demanding the target the better the results achieved.
- Demanding budgets are seen as more relevant than less difficult targets, but negative altitudes results if they are seen as too difficult.
- Acceptance of budgets is facilitated when good upward communication exists. The use of departmental meeting was found helpful in encouraging managers to accept budget targets.
- Managers' reactions to budget targets were found affected both by their own personality and by more general cultural and organizational norms.

The relationship between budget difficulty and the ensuring level of performance can be shown graphically and is illustrated as under :

The Effect of Budget Difficulty on Performance



"Budget level that motivate the best level of performance may not be achievable. In contrast, the budget that is expected to be achieved motivates a lower level of performance as managers no longer aspire to meet the budget target."

The balanced scorecard approach of Kaplan and Norton, and the building block approach of Fitzgerald and Norton can be a great help in ensuring that objectives (or targets), or budgets are set for a very wide range of factors, both financial and non-financial.

OR

(i) Manufacturing Cycle Efficiency (MCE)

$$= \frac{\text{Processing Time}}{\text{Inspection Time + Process Time + Queue Time + Move Time + Wait Time}}$$

$$= \frac{2.0 \text{ days}}{1.5 \text{ days} + 2.0 \text{ days} + 4.5 \text{ days} + 0.5 \text{ days} + 3.0 \text{ days}}$$

= 2 days / 11.5 days x 100 = **17.39%**

Interpretation : In Kingstorm & Co., the MCE is 17.39%, which means that 82.61% of the time is spent on the activities that do not add value to the product. Monitoring the MCE helps companies to reduce non-value added activities and thus get products into the hands of customers more quickly and at a lower cost.

(ii) Manufacturing Cycle Time

= 1.5 days + 2.0 days + 4.5 days + 0.5 days + 3.0 days

= **11.5 days**

(iii) Delivery Cycle Time

= 1.5 days + 2.0 days + 4.5 days + 0.5 days + 3.0 days

= **11.5 days**

My View : Delivery cycle time is the time gap between receiving an order and actual delivery of goods. However, as there is no such extra information available in the question, ICAI has repeated the same answer of manufacturing cycle time.

(iv) Revised MCE

$$= \frac{2.0 \text{ days}}{1.5 \text{ days} + 2.0 \text{ days} + 3.0 \text{ days} + 0.5 \text{ days} + 3.0 \text{ days}}$$

= 2 days / 10 days x 100 = **20%**

Revised Manufacturing Cycle Time

= 1.5 days + 2.0 days + 3.0 days + 0.5 days + 3.0 days

= **10 days**

Question 4 (c) : [5 Marks]

What is Oligopoly market structure? DISCUSS the various pricing strategies and non pricing strategies in oligopoly market structure.

Answer 4(c) :

Oligopoly :

It is a market structure where there are very few firms (say 2 or 3) producing or selling homogenous or identical product. In this type of market structure, the firms are aware of the mutual interdependence of investment, production process, advertising and sales plan of its rival firm. Hence, any change in any variable by a firm is likely to have an equal reaction on the part of other competing firms. It is therefore clear that the oligopolistic firm, while determining the prices for its product, consider not only the demand for the product but also the reactions of the other firms in the industry to any action or decision it may take.

If a firm does not follow or adapt its pricing policy in consonance with its competitor, the shift in the sales will be sensitive. That means demand will shift towards the lower price. Thus, each firm will study the potential reaction before increasing or decreasing the selling price. The firms in oligopolistic market maintain the price of the product either by close analysis of each other's behaviour or by means of cooperation and collusion.

Pricing Strategies of Oligopolies :

- Predatory Pricing : Keeping price artificially low, and often below the full cost of production.
- They may also operate Limit – Pricing Strategy to discourage entrants, which is also called as entry forestalling price.
- Oligopolists may collude with rivals and raise price together, but this may attract new entrants.
- Cost-Plus Pricing : A straightforward pricing method, where a firm sets a price by calculating average production costs and then adding a fixed mark-up to achieve a desired profit level. There are different versions of cost-plus pricing, including full cost pricing, where all costs – that is, fixed and variable costs – are calculated, plus a mark-up for profits, and contribution pricing, where only variable costs are calculated with precision and the mark-up is a contribution to both fixed costs and profits.

Non-Price Strategies :

Non-price competition is the favoured strategy for oligopolists because price competition can lead to destructive price wars – examples include :

- Trying to improve Quality & After Sales Servicing, such as offering extended guarantees.
- Spending on Advertising, Sponsorship, and Product Placement.
- Sales Promotion, such as buy-one-get-one-free, is associated with the large supermarkets, which is a highly oligopolistic market, dominated by three or four large chains.
- Loyalty Schemes, which are common in the supermarket sector, such as Reliance's One Card.

Question 5(a) : [10 Marks]

XYZ Company is a manufacturer of an instrument which has monopoly in the market. The company is manufacturing this instrument since 2000. Two parts, part 'A' and part 'B' are required to manufacture this instrument. Part 'A' is manufactured at plant situated in Gujarat. Part 'B' is manufactured at plant situated in Rajasthan. The instrument is being made by assembling the parts in assembling plant situated in 'Gurgaon'. The Part 'A' and Part 'B' cannot be sold individually in the market.

Recently, the company has decided to benchmark the performance of the each plant individually by setting the cost targets. For this a new CEO has been appointed. The newly appointed CEO suggested that to assess the performance of each plant, a divisional transfer pricing policy is required to be implemented in each plant. For this Managing Director of the company has opined that the transfer price should be decided by Negotiating or bargaining price between each divisional manager. CEO is not in agreement with the opinion of the Managing Director.

You have been appointed to ANALYZE and give ADVICE :

(i) Whether opinion of the Managing Director is correct. Give reasons. **(2 Marks)**

(ii) Options available for deciding the method of transfer pricing. While giving your advice discuss the advantages, disadvantages and behavioural consequences of each method.

(8 Marks)

Answer 5(a) :

(i) ANALYSIS / ADVICE :

A negotiation-based transfer price is arrived by giving managers of the divisions authority to decide on a mutually agreeable transfer price. This is based on external information like the market price of the component, the terms of sale within the industry as well as the company's internal cost of production of the component. This is a go between the market price and cost based methods. The managers can independently decide whether to buy (or sell) from its internal unit or to source from the external market.

However, Part A and Part B cannot be sold individually in the market, there exists no external market for them. Hence there is no comparative price or information about terms of trade etc. to compare them with.

Therefore, negotiation-based transfer price is not possible in the case of XYZ Company. Therefore, the Managing Director is wrong.

(ii) Methods of transfer pricing, their advantages, disadvantages and behavioural consequences. Transfer Pricing Methods can be broadly divided into three categories -

(i) Market Based Transfer Price

(ii) Cost Based Transfer Price

(iii) Negotiation Based Transfer Price

However, in the given case of XYZ Company, there exists no external market for Part A and Part B. Hence Market based transfer pricing method and Negotiation Based transfer pricing method would not apply. The company can use only cost based transfer pricing methods to determine the transfer price for internal sales.

Cost Based Transfer Pricing Methods

Based on the internal cost records of the company, managers can benchmark performance with cost targets set within the company. As the company has a monopoly in the market, there is no external cost price to benchmark. Cost-based transfer price may be based on variable cost, standard cost, full cost and full cost plus mark-up methods and can be adopted based on suitability.

Advantages

- Information is more easily available as compared to market price. Cost can be broken down further for internal analysis.

Disadvantages

- There are a multiple ways of interpreting costs, managers may not agree on the basis to be followed. Since cost is passed to another division there is little incentive to lower costs, which may bring cost inefficiencies into operations.

Marginal cost-based transfer price

Transfer price is recorded at marginal cost required to produce one additional unit. The units in Gujarat and Rajasthan manufacturing Part A and Part B should have cost records that will help them derive the marginal cost based on variable expenses incurred while producing the components.

Advantage

- If the plants in Gujarat and Rajasthan have excess capacity for production, it ensures that it recoups at least the variable cost of production. This will partially help meeting the cost target set for performance evaluation. The assembling division in Gurgaon can procure the components at a lower price as compared to a full cost pricing. This would benefit their performance evaluation as well.

Disadvantage

- No fixed cost or mark-up can be charged to the purchasing division. Hence each unit of internal sale will result in a loss of approximately fixed cost per unit for the supplying divisions in Gujarat and Rajasthan.

Behavioural Consequences

- Non recovery of fixed cost can demotivate the supplying divisions. They may oppose certain decisions like further capacity expansion or further infusion of investment that lead to higher fixed cost.

Standard cost based transfer price

Transfers are recorded at a predetermined cost, which is based on budgets and certain assumptions regarding factors of production like capacity utilization, labour hours etc. In the case of XYZ Company, the cost targets set for performance evaluation must match with this standard cost used for transfer pricing. Given that XYZ Company is going to evaluate performance based on cost targets, any variance between the standard cost charged and the actual cost may most likely be absorbed by the supplying division.

Advantage

- Performance evaluation can be done against budgeted cost targets. Variance analysis will help managers improve their performance.

Disadvantage

- Profit performance measurement is centralized and cannot be measured for individual divisions.

Behavioural Consequences

- Budgeted costs are based on historical cost records. Therefore, there is little incentive to make plants more cost efficient. The company should ensure that standard cost based transfer price is periodically adjusted for any major revision in costs or assumptions.

Full Cost based transfer price

Based on full product cost, transfer price will include the cost of production and other costs incurred in the value chain like general administrative expenses, research and development expenses etc. There will be no selling expenses incurred by any of the supplying plants since the parts are exclusively sold internally and do not have an external market.

Advantage

- The full cost of production of goods transferred is recovered and hence supplying divisions in Gujarat and Rajasthan incur no loss.

Disadvantage

- A disincentive for the supplying division is that profit cannot be charged and hence the supplying divisions do not record any profit.

Behaviour Consequence

- The problem with using full cost as a basis for transfer pricing is that it distorts the company's cost structure while making decisions. The purchasing department would view the cost as a variable one, since it varies in proportion to the units purchased internally. In reality, this price includes a portion of fixed costs of the supplying division that is anyway a sunk cost.

Cost plus mark-up based transfer price

Transfer price is based on full product cost plus mark up. Mark up could be a percentage of cost or of capital employed.

Advantages

- Supplying division can now charge full cost plus mark-up which acts as an incentive.

Disadvantages

- XYZ Company may set its cost targets based on historical records. Cost targets are going to be basis for performance evaluation. In inflationary situations the actual cost incurred may be more than the cost target set. These costs may not be controllable by the managers of the respective plants. This can result in higher transfer pricing costs charged by plants in Gujarat and Rajasthan. The plant in Gurgaon not be able to meet its cost target and hence may be demotivated.

Behavioural Consequences

- If performance evaluation is based on cost targets, it must account for inflationary and deflationary situations. Specially in inflationary situations, the managers may not be able to control the costs. Hence the cost target may be leading to demotivation. Hence XYZ Company should proactively keep tab of current costs while setting cost targets for performance evaluation.

Question 5(b) : [4 Marks]

What is EMA? Categories the under mentioned costs under following dimensions.

Environmental Prevention Costs

Environmental Appraisal Costs

Environmental Internal Failure Costs

Environmental External Failure Costs

Different Costs :

(i) Evaluating and picking pollution control equipment

(ii) Performing contamination tests

(iii) Creating environmental policies

(iv) Audit of environmental activities

(v) Improved systems and checks in order to prevent fines / penalties.

(vi) Environmentally driven R & D

(vii) Failure in disposing toxic material

(viii) Cost of restoring land to its natural state

Answer 5(b) :

EMA is the process of collection and analysis of the information relating to environmental cost for internal decision making.

EMA identifies and estimates the costs of environment-related activities and seeks to control these costs.

The focus of EMA is not only on financial costs but it also considers the environmental cost or benefit of any decision made.

EMA is an attempt to integrate best management accounting thinking with best environmental management practice.

Categories :

SN	Different Costs	Dimensions
(i)	Evaluating and picking pollution control equipment.	Environmental Prevention Costs
(ii)	Performing contamination tests	Environmental Appraisal Costs
(iii)	Creating environmental policies	Environmental Prevention Costs
(iv)	Audit of environmental activities	Environmental Appraisal Costs
(v)	Improved systems and checks in order to prevent fines/ penalties	Environmental Appraisal Costs
(vi)	Environmentally driven R & D	Environmental Prevention Costs
(vii)	Failure of Disposing toxic material	Environmental Internal Failure Costs
(viii)	Cost of restoring land to its natural state	Environmental External Failure Costs

Question 5(c) : [6 Marks]

(i) Implementation of the Target Costing technique requires intensive market research. Give your COMMENTS. **(3 Marks)**

(ii) STATE the impact of Target Costing on profitability. **(3 Marks)**

Answer 5(c) :

(i) Target cost is the difference between estimated selling price of a proposed product with specified functionality and quality and the target margin. This is a cost management technique that aims to produce and sell products that will ensure the target margin. It is an integral part of the product design. While designing the product, the company needs to understand what value target customers will assign to different attributes and different aspects of quality. This requires use of techniques like value engineering and value analysis. Intensive marketing research is required to understand customer preferences and the value they assign to each attribute and quality parameter. This insight is required to be developed much before the products is introduced. The company plays within the space between the maximum attributes and quality that the company can offer and the minimum acceptable to target customers. Therefore, in absence of intensive marketing research, the target costing technique cannot be used effectively.

(ii) Target costing can have a large positive impact on profitability, depending on the commitment of management to its use, the constant involvement of management accountant in all stages of a product's life cycle, and the type of strategy a company follows. Target costing improves profitability in two ways.

It places continuous emphasis on product costs throughout the life cycle of every product, and the management is completely aware of costing issues since it receives regular reports from the management accounting members of all design teams.

It improves profitability through precise targeting of the correct prices at which the company feels it can field a profitable product in the marketplace that will sell in a robust manner. This is opposed to the more common cost-plus approach under which a company builds a product, determines its cost, adds on a profit and then does not understand why its resoundingly high price does not attract buyers. Thus, target costing results not only in better cost control but also in better price control.

If any organisation constantly issues a stream of new products, or if its existing product lines are subject to severe pricing pressure, it must make target costing a central part of its strategy.

If the shortcomings of target costing are dealt with by a management team, it will find that target costing is one of the best management accounting methods available for improving profitability.

Question 6(a) : [10 Marks]

SMS Hospital operates a 60-bed capacity Healthcare Unit and charges ₹ 4,250 per bed per day from the patients. Following data have been provided for the year ended March 2022.

Fees Collected during the year	5,10,00,000
Variable Cost	2,10,00,000
Fixed Cost	1,80,00,000

The requirement of nursing staff is in the ratio of 500 : 1. It means for every 500-patient bed days, 1 nurse is required. The remuneration of the nurse is ₹ 2,40,000 per annum.

Management of the hospital have following projections for the upcoming year :

(i) Variable cost will go up by 10%

(ii) Fixed cost will increase by ₹ 68,00,000 per annum.

(iii) Salary of the nursing staff and charges from patients will remain same.

The number of patients is also not likely to increase in the next year.

The management is considering to open an ICU instead of above mentioned Healthcare Unit which will be at par in initial 2 years but earn profits after that. ICU will also increase goodwill and social reputation of the Hospital.

You are required to :

(i) PREPARE statement to show profitability of existing Healthcare Unit for 2022 and upcoming year. **(3 Marks)**

(ii) Break Even Bed Capacity on the basis of projections for upcoming year **(4 Marks)**

(iii) Your ADVICE on the basis of Financial as well as Non-Financial Factors to switch from Healthcare Unit to ICU. **(3 Marks)**

(Note : Nursing staff salary should be treated as Fixed Cost for BEP).

Answer 6(a) :

Working Notes :

No. of bed days = Total fees collected / charges per bed per day
= 5,10,00,000 / 4,250 = 12,000 bed days

Variable cost per bed per day = 2,10,00,000 / 12,000 = 1,750 per bed per day

No. of nurses required = 12,000 bed days / 500 = 24 nurses

It is assumed that the remuneration to nurses is in addition to the fixed cost given in the question.

(i) Statement Showing Profitability of existing Healthcare Unit

Particulars	Current Year	Upcoming Year
Fees Collection (no change)	5,10,00,000	5,10,00,000
Less : Variable Cost (1,750 + 10% = *1,925)	2,10,00,000	2,31,00,000 (12,000 @ *1,925)
∴ Contribution	3,00,00,000	2,79,00,000
Less : Fixed Cost [180 + 68 L]	1,80,00,000	2,48,00,000
Less : Remuneration of Nurses [24 nurses x 2,40,000]	57,60,000	57,60,000
∴ Profit / (Loss)	62,40,000	(26,60,000)

(ii) BEP for upcoming year :

Contribution per bed day = 4,250 – 1,925 = 2,325

$$\text{Break Even Bed Days} = \frac{[\,2,48,00,000 + 57,60,000\,]}{2,325} = 13,144 \text{ bed days}$$

But for 13,144 bed days, nurses required would be = 13,144/500 = 26.29 or 27 nurses.

However, in the above calculation, we have considered the cost of only 24 nurses. Hence, we need to increase the cost of 3 more nurses to get the revised answer.

$$\text{Break Even Bed Days} = \frac{3{,}05{,}60{,}000 + (3 \times 2{,}40{,}000)}{2{,}325} = 13{,}454 \text{ bed days (approx)}$$

Note : For 13,454 bed days, we will need 27 nurses. Hence, we don't have to make another trial for BEP.

(iii) Advise on shifting to ICU Service :

There is significant drop down in the profitability of Healthcare Unit. Expected loss in the upcoming year indicates that from the financial perspective, the operating of healthcare unit is not a viable option. However, based on information given, operating an ICU is a lucrative project inspite of the fact that it will operate at par (i.e. at BEP) for the first two years. However, it will earn profits after that.

More than this, ICU will increase goodwill and social reputation of the hospital. A good reputation is an important asset for healthcare providers. Along with credible market positioning, it is vital for attracting self-reliant, quality-conscious, and cost-aware patient segments. In long run certainly, it will be worthwhile. Therefore, it is advisable for SMS Healthcare to switch over from Healthcare Unit to ICU.

Question 6(b) : [5 Marks]

A Consultancy firm having its branches across India is facing the problem of non-timely completion of services. Clients are not satisfied with their services just because of delay. However, firm has a qualified team of professionals in different fields and the team members are highly qualified and experts in their field.

On investigation it was found that the main reason of delay is mobile phones of staff. Staff spend their valuable time on mobile phones. Though the staff uses his or her mobile phone for 2 to 3 minutes at a time, but frequency is high. As a result, on an average daily every staff member spends 1/2 hour to 1 hour on receiving personal calls and on social media. It looks just a small issue but its effect is large as it also diverts their mind from their ongoing work also.

As it is a consultancy firm, it is not possible for staff members to work without phones because they have to converse with client's officials time to time and clients also calls them to tell their additional requirements and feedbacks.

To resolve this problem, management has decided to provide landline phones. Now staff members have to submit their mobile phones at reception and they are not allowed to take them at their workplace. Staff members are advised to use landline phones and firm mail-id to contact the clients. As per management opinion it will improve their efficiency up to 25% but there are some issues in which management wants your opinion.

(i) Whether clients will be compatible with such type of arrangements? **(2 Marks)**

(ii) Will it affect the morale of staff members and will it affect long term sustainability of firm? Give reasons. **(3 Marks)**

Answer 6(b) :

(i) Use of mobile phone devices in office for personal calls distract the work and even result in decreased productivity. Therefore, landline phones could be the option. Clients may be compatible with such type of arrangements but what about after office hours or there may be a situation which need immediate resolutions even most of the times senior officials were in meetings or outside the office. Therefore, installation of landline phone is depending on the cadre of staff and may have restricted use.

(ii) Surely, it will affect the morale of staff since their family members or relatives won't be able to contact them in case of an emergency. Depending on the cadre / status of employees the mobile phones should be deposited at reception and at break time employees could go and check for missed calls or text messages received. Firm may also reckon about allowance for making personal calls from desk during working hours as long as it does not become excessive and the work at hand is not jeopardized. For long term sustainability, it's better to accept cell phones as a part of modern-day work life and establish policies for their use. As long as firm enforce its "cell phone use at work" policy, firm should see usage settle at levels that are reasonable for its business.

Question 6(c) : [5 Marks]

KRK Limited deals in spare parts of motorbike. Since last 2 years, it has shown loss even though it has negotiated with the suppliers very well and was able to purchase the goods at very competitive rates. The newly appointed CEO believed that there is a need of implementation of Balanced Scorecard. CEO met the Managing Director and stated that "The Balance Scorecard is a collection of critical performance measures that have some special properties. The performance measures are derived from a company's vision, strategy and objectives. Performance measures should be chosen so that they are balanced between outcome and lead measures."

Managing Director of the KRK Limited was very happy with the CEO and it was decided that from the beginning of the next financial year the Balanced Scorecard will be implemented. For implementing the Balanced Scorecard, following strategic objectives were, decided to begin with:

(i) Expansion of eco-friendly product line.

(ii) Improve ROI.

(iii) Customer retention.

(iv) Reduction in time spent in non-value-added activities.

(v) Improve on time delivery to customers.

You are required to CLASSIFY the above strategic objectives by perspective and suggest a measure for each objective.

Answer 6(c) :

Strategic Objectives	**Perspective**	**Measures**
Expansion of eco-friendly product line	Learning & Innovation	No. of eco-friendly products developed.
Improve ROI	Financial Perspective	% increase in ROI
Customer Retention	Customer Perspective	% increase in repeat customers / number of repeat customers
Reduction in time spent in non-value added activities	Internal Perspective	% increase in MCE / number of hours saved due to identification of non-value added activities
Improve on time delivery to customers	Customer Perspective (if highly valued by customers) Or Internal Perspective	% of orders on time / number of on-time deliveries.

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