

MOCK TEST PAPER – 2

FINAL COURSE: GROUP – II

PAPER – 5: STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

SUGGESTED ANSWERS/HINTS

1. The pricing of new product poses a bigger problem because of the uncertainty involved in the estimation of their demand. A new product is analysed into three categories for the purpose of pricing:

Revolutionary Product

A product is said to be revolutionary when it is new for the market and has the potential to create its own value. This type of product has a revolutionary impact on the market and consumer behaviour. It replaces the existing method or technology and the approach of doing a work is quite different and unique. These products enjoy the benefit of product differentials and have the potential of being market leader.

Revolutionary product may enjoy the premium price as a reward for its innovation and taking first initiative.

Evolutionary Product

A product introduces upgraded version with few additional characteristics of the product is known as evolutionary product.

The evolutionary products may be priced taking cost-benefit, competitor, and demand for the product into account.

Me-too Product

A product is said to be me-too product when its emergence is a result of the success of a revolutionary product. These types of products are very similar (in ordinary language imitation) to revolutionary and/ or evolutionary products of other firms. The firm, while producing me-too products, generally follows the similar production process and technology that is used by the other firms. These are known as market followers.

The me-too products are price takers as the price is determined by the market mainly by the competitive forces.

In the given case, The Crafted Mobile Application Ltd. is going to introduce three new applications. The concern for the company is the pricing strategy for its new applications. Evaluations of pricing strategy for all new three applications are as follow:

- i) Application ‘Pic X Chat’ having almost all the features currently available social media applications. Additional features are that it allows to video call with up to 15 members at a time, higher than other applications, allows to hide some conversation, having ‘Child Safe Mode’ and the biggest move is to restrict inappropriate and vulgar content without suffering the privacy of the user.

These **additional features make it evolutionary product** and expected that people would admire efforts of the company and as the application is free of cost, it is expected that it would get good numbers of users.

Since the features of the application is crucial and different, it would get enough users. More users would attract advertisement companies too. And that is why they would be ready to pay higher amount for the advertisement. And **market survey also suggested higher demand of the**

application. Hence, the **pricing strategy of the company to charge higher than the market rate is appropriate**.

- ii) Application 'Remote Meet' is similar application like other available video calling applications in the market. It is having **almost similar features like other applications in the market. So that it can be said that it is Me-too product.**

Basic version of this application would be free of cost. However, for every additional feature, the company would charge subscription fees starting from ₹ 120 (100 + 20%) which is higher by 20% than current market rates.

Since it is Me-too product, the company should not charge higher than market rates. Me-too products are price taker. Higher prices may divert its users to other application as the users have numerous options. Hence, the **strategy of charging higher amount on this application does not seem appropriate**.

- iii) Application 'Mobile Dr.' is unique application. This application can measure the temperature, heart beats and pulse beats. It can identify coughing and sneezing by the holder of the mobile phone. It can identify normal fever, suggest required health check-up after considering above testing, suggest nearby available doctors, medical stores, medicines etc. Further, it reminds regular check-up required like full body check-up, sugar, blood pressure, eye testing etc. And it suggests about exercising, diet and water drinking too. It is approved and suggested by the Doctors' Association and the Government. After the outbreak of the corona virus, application has potential to be adapted by many users.

Due to these unique ideas and features and after the outbreak of corona virus, the application has fair chances that it gets many users. Hence, it is considered as the Revolutionary Product.

The company wants to charge ₹ 500 per year as subscription fees and want to charge higher advertisement fees by 25%-30%. As this is Revolutionary product, the company can charge premium price as it wants. Also, there is no competitor and hence the company can be the price setter. Hence, the **strategy of the company is appropriate**.

2. (i) Target profit per statue is 25% of ₹45,000. Therefore, target profit is ₹11,250 per statue. Hence, target cost = selling price – target profit = ₹45,000 - ₹11,250 = ₹33,750 per statue.

- (ii) The calculation is given:

Cost	Amount (₹)
Design cost	5,00,000
Direct materials	20,00,000
Direct manufacturing labour	25,00,000
Variable manufacturing overhead	20,00,000
Fixed manufacturing overhead	5,00,000
Marketing	<u>10,00,000</u>
Total Estimated Cost	8,50,000

Estimated Cost per statue = ₹85,00,000 / 200 statues = ₹42,500 per statue.

- (iii) The estimated cost is higher than the target cost per statue. The estimated cost is ₹42,500 per statue (ii) while the target cost price is ₹33,750 per statue (i). Hence, the company has to find ways to reduce the estimate cost through value engineering.

- (iv) With 60% saving in direct material cost and 50% saving in direct manufacturing labour, the revised estimate cost per statue if value engineering is adopted would be:

Cost	Amount (₹)
Design cost	5,00,000
Direct materials	8,00,000
Direct manufacturing labour	12,50,000
Variable manufacturing overhead	20,00,000
Fixed manufacturing overhead	5,00,000
Marketing	<u>10,00,000</u>
Total Estimated Cost	60,50,000

Estimated Cost per statue = ₹60,50,000 / 200 statues = ₹30,250 per statue.

- (v) The target cost per statue is (i) is ₹33,750 per statue while the revised estimate cost per statue if value engineering is adopted as per (iv) is ₹30,250 per statue. Hence, value engineering technique does lower the cost per statue.
- (vi) The target profit per statue is 25% of ₹50,000. Therefore, target profit is ₹12,500 per statue. Hence, target cost = selling price – target profit = ₹50,000 - ₹12,500 = ₹37,500 per statue.
- (vii) The revised estimate cost per statue would be:

Cost	Amount (₹)
Design cost	5,00,000
Direct materials	20,00,000
Direct manufacturing labour	25,00,000
Variable manufacturing overhead	20,00,000
Fixed manufacturing overhead	5,00,000
Marketing	<u>11,00,000</u>
Total Estimated Cost	86,00,000

Estimated Cost per statue = ₹86,00,000 / 200 statues = ₹43,000 per statue.

- (viii) No, the estimated cost after increased spending on marketing is higher than the target cost per statue. The estimated cost is ₹43,000 per statue (vii) while the target cost price is ₹ 37,500 per statue (vi). The 10% increase in marketing spend increases the cost per statue to ₹43,000 beyond the target cost of ₹37,500 per statue.
- (ix) ₹14,750, ₹7,000

Particulars	Estimates as per value engineering (iv)	Estimates as per marketing spend (vi)
Selling price per statue	₹45,000	₹50,000
Estimated cost per statue	₹30,250	₹43,000
Profit per statue	₹14,750	₹7,000

- (x) Jay the product manager's proposal of adopting value engineering as per (iv) is more profitable as compared to Raj the designer's proposal. Adopting value engineering may be encouraged. At the same time, designer Raj's opinion is also critical since it affects the durability of the product, which also impacts the long run demand for these products. Hence, the management of Art Décor has to take strategic decisions on the quality of statues it wants to launch. Pricing will also be affected by the external competitive market conditions.
3. (i) For commercial enterprises, generating profits is a very important objective. Likewise, not-for-profit enterprises have certain cultural, social or educational objectives for which they are created. Regardless of the type of organization, it is important to know whether the internal operations meet certain performance benchmarks, that will ensure that the organization achieves its objectives in a better manner. Moreover, even if the organization does not operate for profits, it is important for it to be "cost effective". Resources (including money) should be used optimally to achieve intended outcomes. For example, HS can use this benchmarking tool to look into the following questions:
- (a) Does the organization function in an efficient and cost effective manner?
 - (b) Does the estate management make best use of the buildings to achieve the objectives of the organization?
 - (c) Does the estate management function manage upkeep of buildings in terms of repairs and improvements in an effective manner?
 - (d) Are the tenants satisfied with the service provided by the estate management and the suitability of the accommodation for their needs?

"Value for Money (VFM)" is an assessment made based on the criteria of economy, efficiency and effectiveness.

Economy involves *minimising resource consumption while meeting specified requirements of quality and quantity*. Minimize the cost of resources / required inputs (implies to spend less) while ensuring that the desired quality of service is achieved. For HS, inputs could be purchases made for maintenance and repair work like sanitary fittings, AC, wooden structure for the houses etc., while resources could be the labour employed to carry out these services. HS should aim at purchasing required quality of inputs at the least possible price. Skilled labour needed for this job should be procured at the lowest pay scale possible. Procuring these at lower cost leads to savings for HS. At the same time, HS should ensure that cost cutting / saving does not come at the cost of quality. Lower quality, implies inferior service levels, which ultimately will compromise HS' social commitment to provide quality housing to needy members of its community.

Efficiency involves *maximising the ratio between resources (input) and the output of goods, services or other results*.

The focus of efficiency is on the process of rendering service. The objective of efficient operations is to maximize output using minimum resources. Improved productivity means that resources procured are used in an optimal way (implies spending well).

In the case of HS, one of the resources is the labour employed for repair and maintenance work. Efficiency (productivity) measured would be the relationship between the employees available and the repair work performed by them. If the pool of employees do more repair work than the benchmark set, productivity is higher. This also closely ties up with economy (cost) of operations. If the given pool of employees (resources), who are paid optimum salary (cost), cater to more repair and maintenance work, economy of operations is achieved due to higher productivity of operations. In case these activities are outsourced, efficiency and economy can be achieved by calling for tenders. Select the tender that provides maximum work for least cost.

In addition, HS may explore options for efficiencies from business process improvements, shared services as well as further efficiencies with in assets management.

Effectiveness involves *ensuring that the outcome achieves the desired policy aims and objectives*. Have the objectives been achieved, how does the impact of the actual output / service compare with its intended impact? (implies to spend money wisely to achieve desired objectives). In the case of HS, effectiveness could be assessed based on the following questions

- (a) Are the housing needs of the targeted community members met?
- (b) Are the tenants satisfied with the accommodation?
- (c) Given its social cause, are the staff friendly, courteous and hospitable to the customers?
- (d) Do the housing accommodations comply with safety standards and other legal requirements?

Each measure is inter linked with the other. For example, HS has replaced sanitary fittings in the kitchen and bathroom in 45 houses for ₹26,100 each, costing a total of ₹11,74,500. Compared to ES that has spent ₹52,200 on each house for sanitary fitting replacement. For the cost of ₹11,74,500 ES could have replaced fittings in only 22 houses ($₹11,74,500 / 52,000$) as compared to HS' ability to replace fittings in 45 houses. Therefore, HS' decision has been economical, getting more work done for same cost. At the same time, this does not indicate whether the fittings replaced by HS are of similar or better quality as compared to ES. ES could have used better quality fittings that last longer, enhance customer experience, safety etc. The spending by ES could have been more effective than HS because it helps achieve the desired objective of customer satisfaction, safety and lesser running cost for maintenance. Therefore, to achieve economy, HS may have compromised on effectiveness.

Benchmarking is a good method of measuring performance it enables a comparison of the process, costs etc. with those of a close competitor. Services will be expected to use benchmarking information to learn from best practice, change procedures and processes to achieve enhanced methods of working, and reduce unnecessary expenditure.

However, benchmarking of performance against ES is not ideal. The performance of HS can be better measured by adopting *benchmarking against similar charities* whose primary objective is the provision of accommodation to the communities in which they operate.

Thus, HS must have permanent membership of the House Benchmarking Organisations, which helps social housing property-owners to compare the costs of service delivery, resources, and key performance indicators across all areas of the business. For example, the management of HS can enquire about a norm in respect of the repair charges, sanitary charges or wood structure replacement charges etc. of similar non-profit seeking organisations.

Further, benchmarking should be conducted annually to analyse all areas of the business and is used to identify high performing, low cost services. Using the annual benchmarking exercise results, the HS can plan to target those areas that are low performing and high cost.

Overall, HS should have strong commitment to value for money, which needs to be reflected in the business plan and in service-delivery plans. By applying these principles HS would be able to achieve the optimum utilisation of resources, which will in turn lead to extra capacity and allow HS to provide better services.

- (ii) **The Building Block Model** proposed by Fitzgerald and Moon, gives six dimensions of performance measurement including service quality and flexibility.

Service Quality

Service quality is the measurement of how well a delivered service conforms to the customer's expectations. As a not for profit organization, HS provides housing services to cater to the needs

of lower and middle income groups as well as senior citizens in the local community. Although service is provided at a concessional rate compared to its commercial peer ES, quality of HS' service needs to be judged based on certain parameters that were promised by the organization to its tenants. These could be used as parameters to assess service quality. Some of them could be:

- Behaviour, attitude, proactivity of staff employed by HS.
- Quality of basic amenities provided.
- Availability of on-site service for the residents
- Safety within and around the residential unit

Data for assessment of quality can be collected from feedback of tenants, analysing the number and nature of complaints made by tenants, tenant retention rate/loyalty etc. Feedback form tenants can be taken on specific issues or could be general in nature.

Flexibility

Flexibility is the ability of the organization to adapt to customers' requirements. This can be measured through service delivery time, promptness in responding to customer requests, ability of employees to perform different kinds of work etc. In the case of HS, the following performance measures can be used to assess the flexibility:

- The average waiting time for a tenant for a house to become available. Lower the wait time better the flexibility as it indicates that there are sufficient housing units available for rental accommodation.
- Following change in requirements, ability to meet the tenant's request for another house of a different size. This indicates whether the range of housing units offered is sufficient (flexible) to cater to the tenants' changing demand.
- Waiting time for undertaking repairs of an emergency nature, once notified by a tenant. Lower the waiting time during emergencies indicates the availability of appropriate personnel to carry of the repairs on short notice.



Students are only required to provide one *performance measure*. These others have been given for completeness.

(iii) The management of HS could use the following performance measures

An organization should aim at achieving results with maximum efficiency at the least possible cost. Efficiency measures the relationship between the input resources utilized and the output service achieved. Few of the measures that HS could use to compare performance with ES are:

The Average Employee Cost *per week per house*

Here, the resource (input) are the employees, which is 15 in case of both HS and ES. The employees at HS cater to 450 houses as compared to 200 houses catered by ES. Therefore, HS is more efficient as compared to ES.

Likewise, cost of resources to HS is the employee cost, for which the pay structure and remuneration policies are different in both the organizations. HS has the ability to hire most of its resource at an annual salary of ₹1,00,000, which is the least level in the pay structure.

Comparatively, ES also hires cheaper labour but at a slightly higher pay level of ₹2,00,000 annual salary. Therefore, the total cost of labour is higher by ₹14,00,000 (58%) for ES as compared to HS.

To compare the figures on a common factor, the employee cost can be calculated per week per house.

	HS	ES
The Average Employee Cost <i>per week per house</i> [₹24,00,000/ (450@ × 52)] and [₹38,00,000/ (200@ × 52)] ^ Employee cost from the income and expenditure table @ Number of houses (given): HS = 450; ES = 200	₹102.56	₹365.38

The average employee cost per week per house of ES is ₹365.38 (2.46 times) more than of HS. It can be concluded that HS is both efficient, in terms of being able to cater more houses with same number of employees, as well as cost effective due to the use of cheaper labour.

The Average Day to Day Repair Cost *per week per house*

Here, the resource (input) is measured in terms of the cost spent on repairs to maintain the rental houses. Running repairs are generally do not add much value to the rental houses. Therefore, lesser the repairs, higher the efficiency. From the income and expenditure table, it can be seen that HS has spent ₹23,91,600 as running repair cost for 450 houses versus ES that has spent ₹6,38,000 for 200 houses. To compare them on a common factor, the average repair cost per week per house has been calculated.

	HS	ES
The Average Day-to-Day Repair Cost <i>per week per house</i> [₹23,91,600/ (450@ × 52)] and [₹6,38,000/ (200@ × 52)] ^ Running repair cost from the income and expenditure table @ Number of houses (given): HS = 450; ES = 200	₹102.21	₹61.35

The average day to day repair cost per week per house for ES is ₹40.86 less than that of HS (-40%). This may be due to the fewer repairs required and the fact that there is no extra cost required for emergency and urgent repairs. The cost of repairs whether emergency, urgent or non-urgent to ES is the same, ₹1,000 [₹6,38,000/ (160 + 376 + 102)] whereas the cost of emergency repairs to HS is ₹1,400 (₹6,72,000/480), urgent ₹1,139 (₹11,28,000/990) and for non-urgent repairs it is ₹1,056 (₹5,91,600/560).

ES's low cost of repairs (which is identical for all types of repairs – emergency, urgent and non-urgent) may have been achieved through entering into a *contractual agreement for repairs*. HS should also think of entering into such contracts in order to save money.

Percentage of Rent Lost

Occupancy of rental houses indicate whether the capacity (in terms of houses rented) is being optimally utilized. Lesser the vacancy better the efficiency in terms of capacity utilization. This represents opportunity cost of not letting out the property.

	HS	ES
Percentage of Rent Lost (= Rent Lost / Gross Rent) [(₹18,17,400/ ₹1,21,16,000) Gross Rent = Rent Earned + Rent Lost = ₹1,02,98,600 + ₹18,17,400 = ₹1,21,16,000	15%	---

ES did not have any unoccupied properties at any time during the year; it has 100% occupancy. This shows that ES's properties are in high demand. On the other hand, HS has lost rent worth ₹18,17,400 through unoccupied properties; this is about 15% of the gross rent receivable.

The management of HS should identify the reasons why the houses remained unoccupied when the occupancy rate is 100% for an organisation like ES, a peer organisation should be used to benchmark the performance.

4. (a) Statement Showing Optimum Units to be produced

Particulars	P1	P2	P3
Selling Price <i>per unit</i> (₹)	170	140	180
Direct Material Cost <i>per unit</i> (₹)	80	90	120
Throughput <i>per unit</i> (₹)	90	50	60
Time Required <i>per unit</i> (hrs.)	6	4	3
Return per Machine Hour (₹)	15	12.50	20
Rank	II	III	I
Allocation of Machine Time (hrs.)	1,20,000 (20,000 units × 6 hrs.)	45,000 (Balance)	75,000 (25,000 units × 3 hrs.)
Production (units)	20,000	11,250 (45,000 hrs. / 4 hrs.)	25,000

(b) Decision Making – PQR Ltd.

- (i) With increasing completion, dynamic market changes, changing needs of customers, *non-financial* and *ethical considerations* have gained relevance in the decision-making process. A company may face the dilemma of meeting customers' needs while protecting employees' rights. While there are no clear-cut parameters to measure the impact of such decisions, they have a long-term impact on the company's operations that ensures profitability and sustainability of an organization.

In the given scenario, a customer who contributes close to 60% of PQR Ltd.'s profits has been making turnaround demands that are unreasonable for the company employees to meet. PQR Ltd. has to decide whether to continue doing business with the customer based on the current terms or protecting the work environment of its employees. In the current scenario, it is in PQR's long term interests to protect its employees' rights (a non-financial consideration). Keeping this approach in mind, PQR Ltd. decided to terminate business with the profitable client. While this had a significant impact on revenues in the short term, in the long run PQR Ltd. was able to get business from new clients. Also, realizing the value of service provided, the dropped client came back with projects on equitable terms. Therefore, even though it did not make financial sense in the short run, decisions based on non-financial metrics played an important role in ensuring PQR Ltd.'s long term sustainability.

OR

- (ii) **Qualitative factors to consider while making the outsourcing and make or buy decisions:**

- (a) Quality of goods produced outside vs. in-house production of the component. Outsourcing or buying a component from the external market, should not impact the

overall quality of the product. Therefore, *any component critical for a product would generally not be outsourced unless its supplier gives quality assurance.*

- (b) *Reliability of suppliers* in the outsourcing arrangement. Assurance must be given by the supplier in terms of both quality and timely delivery of components for the given price. Also, there must be a sufficient pool of suppliers from whom the company can buy the product. If one supplier closes shop, there must be alternate suppliers available.
- (c) *Availability of skilled labor and infrastructure* to make the component in-house. If not available, then the component may have to be bought from the external market.
- (d) *Regularity of demand for the product* – If made in-house, seasonal demand for a product may result in the risk of holding high inventories (including that of raw materials) or making high capital investments that will prove unproductive during off-season. Therefore, *outsourcing or buying from external market may be more viable when the demand for the final product is seasonal.*
- (e) *Risk of technological obsolescence for the component* – when the risk is higher company may favor outsourcing.
- (f) *Confidentiality of process or patent of process* – Confidential processes or critical components may not be outsourced.
- (g) The shutting down of company's manufacturing facility might have a negative impact on the morale of remaining employees.

(c) Dealer Profitability Statement

Particulars	X ₁	X ₂	X ₃	X ₄
Sales (units)	2,000	3,000	5,000	4,000
	(₹)	(₹)	(₹)	(₹)
Sales Revenue (A)	4,00,000	6,00,000	10,00,000	8,00,000
Less: Cost of Production @60% (B)	2,40,000	3,60,000	6,00,000	4,80,000
Contribution (A) - (B)	1,60,000	2,40,000	4,00,000	3,20,000
Less: Additional Overheads				
Delivery Cost (No. of K.M. × ₹ 3)	315 {(2,000/250)-1} × 15 × ₹ 3	600 (3,000/300) × 20 × ₹ 3	540 {(5,000/250) -2} × 10 × ₹ 3	1,800 (4,000/200) × 30 × ₹ 3
Speed Delivery Cost (No. of Emergency Delivery × ₹ 5)	75 (1×15) × ₹ 5	---	100 (2×10) × ₹ 5	---
Order Processing Cost (No. of Orders × ₹ 50)	200 (2,000/500) × ₹ 50	500 (3,000/300) × ₹ 50	1,000 (5,000/250) × ₹ 50	500 (4,000/400) × ₹ 50
Sales Visit Cost (No. of Visits × ₹ 2,000)	16,000 (8 × ₹ 2,000)	6,000 (3 × ₹ 2,000)	20,000 (10 × ₹ 2,000)	4,000 (2 × ₹ 2,000)

Product Handling Cost (No. of units × ₹ 0.20)	400 (2,000 × ₹ 0.20)	600 (3,000 × ₹ 0.20)	1,000 (5,000 × ₹ 0.20)	800 (4,000 × ₹ 0.20)
Warranty Complaint (No. of complaints × ₹ 6,000)	---	48,000 (8 × ₹ 6,000)	---	54,000 (9 × ₹ 6,000)
Profit per dealer	1,43,010	1,84,300	3,77,360	2,58,900
Profit per dealer (%)	35.75%	30.72%	37.74%	32.36%
Rank	II	IV	I	III

Analysis

The contribution margin is 40% for each dealer but when the other overheads costs *per dealer* is included in the above Profitability Statement the profitability of the three dealers become different. X₃ is the most profitable dealer.

5. (a) Material M

The requirement of 2,000 units of Material M has to be purchased in entirety since there are no units in stock. Therefore, the relevant cost will be the replacement cost at ₹8 per unit, which for 2,000 units is ₹16,000 (2,000 units × ₹8 per unit).

Material N

There is a requirement of 3,000 units of Material N, of which 1,200 units are in stock. Material N used regularly in the production of all types of dyes. If the 1,200 units in stock are used, they need to be replenished (replaced) in order to meet production demands of other dyes. In addition, for the special order, additional 1,800 units of Material N is required to be procured from the market. Therefore, 3,000 units of Material N has to be procured if the special order is undertaken. The relevant cost will be the replacement cost at ₹10 per unit, which for 3,000 units is ₹30,000 (3,000 units × ₹10 per unit).

Material O

There is a requirement of 2,000 units of Material O, of which 1,400 units are in stock. The balance 600 units have to be procured at the replacement (market) price of ₹14 per unit, which would be ₹8,400. Material O has no other use, so if the special order is not undertaken the stock of 1,400 units can be sold at ₹9 per unit. So, the opportunity cost of undertaking this order is ₹12,600. Therefore, the relevant cost for Material O is procurement cost of 600 units plus the opportunity cost of not disposing the current stock of 1,400 units, which would be ₹8,400 + ₹12,600 = ₹21,000.

Material P

The entire requirement of 500 units of Material P is in stock. If the special order is not accepted, Golden paints has two options (i) sell the excess material at ₹12 per unit or (ii) use it as a substitute for Material Z, which would otherwise need to be procured.

- (i) The realizable value of Material P is ₹6,000 (500 units × ₹12 per unit).
- (ii) Material P can be used as a substitute for 700 units of Material Z. Since there is no stock of Material Z currently, if the special order is accepted, the entire quantity would have to be procured at ₹11 per unit. This would cost the company ₹7,700 (700 units × ₹11 per unit).

Both options (i) and (ii) represent opportunity cost if the special order is accepted. The relevant cost for Material P, if the special order is accepted would be higher of either of these two opportunity costs. The higher opportunity cost of that of procuring Material Z from the market at ₹7,700. Therefore, the relevant cost for Material P is ₹7,700.

Therefore, the relevant cost to accepting the special order would be the cumulative of the relevant cost for Materials M, N, O, and P. This works out to ₹74,700.

(b) Statement Showing "Sales Target Fixed & Actual Margin"

(₹)

Particulars	Zonal Sales Officers			
	A	B	C	D
Commissioned Earned	40,800	32,400	35,520	38,700
Actual Sales (Commission Earned / 6%)	6,80,000	5,40,000	5,92,000	6,45,000
Sales Price Variance	6,000(F)	8,000(A)	7,000(A)	5,000(A)
Sales Volume Variance	11,000(A)	18,000(F)	19,000(F)	20,000(F)
Sales Target (Budgeted Sales)	6,85,000	5,30,000	5,80,000	6,30,000
Standard Cost of Sales Target	5,82,250	4,50,500	4,93,000	5,35,500
Budgeted Margin	1,02,750	79,500	87,000	94,500
Sales Margin Mix Variance	10,750(A)	5,500(F)	12,000(F)	9,500(A)
Sales Price Variance	6,000(F)	8,000(A)	7,000(A)	5,000(A)
Actual Margin	98,000	77,000	92,000	80,000

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

Particulars	Zonal Sales Officers			
	A	B	C	D
Efficiency towards the Target Sales				
(a) Whether target achieved	No	Yes	Yes	Yes
(b) Actual Sales to Target Sales Ratio	99.27%	101.89%	102.07%	102.38%
(c) Rank	IV	III	II	I
Margin Approach				
(a) Margin Earned (₹)	98,000	77,000	92,000	80,000
(b) Rank	I	IV	II	III
Margin Vs Sales Ratio				
(a) Budgeted Margin/Sales Target Ratio	15.00%	15.00%	15.00%	15.00%
(b) Actual Margin Vs Actual Sales Ratio	14.41%	14.26%	15.54%	12.40%
(c) Rank	II	III	I	IV

Comment- An analysis on performance of four Zonal Sales Officers based on three base factors, the performance of **Officer C** is the best.

6. (a) (i) **Cost of Quality Statement**

Particulars of Costs	Cost Incurred (₹)	% of Total Costs of Quality
Preventive Costs:		
Employee training	36,000	5.85%
Appraisal Costs:		
Testing	51,000	8.29%
Internal Failure Costs:		
Rework	90,000	17.08%
Cost of rejected units	15,000	
External Failure Costs:		
Lost profits from lost sales due to impaired reputation	2,43,000	68.78%
Sales return processing	52,500	
Warranty costs	1,27,500	
Total Cost of Quality	6,15,000	100%

(ii) **Cost Benefit Analysis of New Quality Programme**

Particulars of Costs	Additional (Costs)/ Cost Savings (₹)	Total New (Costs) / Cost Saving (₹)
Preventive Costs:		
Reengineer the production process	(2,25,000)	(2,55,000)
Supplier screening and certification	(9,000)	
Preventive maintenance on equipment	(21,000)	
Appraisal Costs:		
Inspect Raw Materials	(36,000)	(36,000)
Internal Failure Costs:		
Reduction in rework costs	75,000	75,000
External Failure Costs:		
Reduction of lost profits from lost sales	2,40,000	3,82,500
Reduction from sales return	45,000	
Reduction from warranty costs	97,500	
Total savings (costs) from quality programme		1,66,500

- (iii) Investment in prevention costs and appraisal costs (also known as costs of good quality), reduces internal and external failure costs (also known as cost of poor quality).

Costs incurred before actual production begins, to prevent defects and other product quality issues, are known as preventive costs. In the given example, reengineering production process, screening / certification of suppliers and preventive maintenance of equipment are preventive costs. Likewise, appraisal costs are incurred to ensure that activities conform to

desired quality requirements. They are incurred in all stages of production. In the given example inspection of raw material is an appraisal cost.

While preventive and appraisal costs would not directly improve the quality of the product, they would definitely reduce internal failure costs like rework costs or external failure costs like sales returns or warranty claims. These would also enhance the reputation of the product for its standard of quality. Conversely, it follows that internal failure costs may be preferable to external failure costs since it affects the company's brand image.

Costs incurred to ensure conformance to quality will ensure higher chances of detection of defects in the product. At the same time ensuring zero defective rate may require huge resources and therefore may be costly. Instead, companies may have the ability to absorb costs incurred due to rework, warranty claims or lost sales. Therefore, they must determine a reasonable threshold defective rate that is acceptable, a normal cost in business operations. Tools for quality production management like Total Quality Management (TQM) will help in determining the optimum cost of quality that the company is willing to bear. TQM focus on continuous improvement of an organization's business activities. This creates an awareness of quality that the company comes to expect from various processes. Things need to be done right the first time, consequently eliminating defects and waste from operations. At the same time, an in-depth knowledge of business processes provides information that can help the management set acceptable threshold limits for reasonable level of defects it is willing to bear.

- (b) (i) In participative budgeting, subordinate managers create their own budget, and these budgets are reviewed by senior management. Such a budget communicates a sense of responsibility to subordinate managers and fosters creativity. This is also called bottom-up approach (sometime referred as participative approach).

As the subordinate manager creates the budget, it might be possible that the budget's goals become the manager's personal goal, resulting in greater goal congruence. In addition to the behavioural benefits, participative budgeting also has the advantage of involving individuals whose knowledge of local conditions may enhance the entire planning process.

The participative budget described here appears participative in name only. In virtually every instance, the participative input is subject to oversight and discussion by sales manager. Some amount of revision is also common. However, excessive and arbitrary review that substitutes a top-down target for a bottom-up estimate makes a deceit process. Such a gutting appears to be the case in MWPL. J's statement indicates a very autocratic style. The revision process also seems to be arbitrary and capricious. There is little incentive for the salesgirls to spend much time and effort in projecting the true expected sales because they know that the target would be revised again and J's estimate will prevail. This situation creates an interesting discussion about the costs and benefits of participative budgeting and gives rise to game playing and slack.

- (ii) In top down approach, budget figures will be imposed on sales personnel by senior management and sales personnel will have a very little participation in the budget process. Such budget will not interest them since it ignores their involvement altogether. While in bottom up approach, each sales person will prepare their own budget. These budgets will be combined and reviewed by seniors with adjustment being made to coordinate the needs and goals of overall company. Proponents of this approach is that salespersons have the best information of customer's requirements, therefore they are in the best position in setting the sales goal of the company. More importantly, salespersons who have role in setting these goals are more motivated to achieve these goals. However, this approach is

time-intensive and very costly when compared with top down approach. In order to achieve personal goals, participants may also engage in politics that create budgetary slack and other problems in the budget system.

Since both top down and bottom up approaches are legitimate approaches, so MWPL can use combination of both. Seniors know the strategic direction of the company and the important external factors that affect it, so they might prepare a set of planning guidelines for the salesgirls. These guidelines may include forecast of key economic variables and their potential impact on the MWPL, plans for introducing and advertising a new product and some broad sales targets etc. With these guidelines, salesgirls might prepare their individual budget. These budgets need to be reviewed to validate the uniformity with the MWPL's objectives. After review, if changes are to be made, the same should be discussed with salesgirls involved.