

MOCK TEST PAPER
FINAL (NEW): GROUP: II

PAPER – 5: STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

Question No. 1 is compulsory

*Answer any **four** questions from the remaining **five** questions*

Time Allowed – 3 Hours

Maximum Marks – 100

1. Cancer Research Foundation (CRF) is not for profit organisation established two years ago in form of a charitable public trust with the objective to conduct charitable activities related to disease of cancer and its' patients in home country (here-in-after referred to as a said country) after considering the 2018 report by the World Health Organization (WHO), which said that one in every 10 will develop cancer during lifetime and one in 15 will die of the disease in said country. In 2018, cancer took more than seven lakh lives. According to the estimates by the Medical Research Council of said country, the death toll is expected to rise to 8.8 lakh by 2020.

The mission statement of CRF is read as '**We are here to reduce cancer deaths to zero**'. CRF enlists the following three critical success factors to attain the mission:

1. To reduce the number of people suffering from cancer.
2. To develop treatment facilities for cancer patients.
3. To fund research programs to study the causes of cancer and prevention therefrom.

CRF comprises a board of trustees, a group of advisors, and volunteers apart from few executive staff members. Management rest with the board of trustees, whereas technical decision and representations made by a group of advisors (which comprises experts who are either renowned medical professionals or CEOs of pharma companies). Executive staff executes the operational task and coordinates activities like camps, awareness drives, etc. through volunteers. The only executive staff gets a fixed salary, advisors get honorarium to meet out of pocket expenses only.

CRF under its mission **Nirog** has tie-ups with different hospitals that take-care of the cancer patient, CRF teams whenever come across any case of a cancer patient who doesn't afford the treatment; intervene into the case and funds the treatment cost of such patients in said hospitals. CRF sponsors the research projects undertaken by individual medical professionals (either self-employed or practice in association with the hospital) and experts (from academia or industry) in domains relates to the disease of cancer.

CRF gets donations from individuals and corporates (as part of their CSR initiatives) apart from grants from national and international bodies (including WHO, Red Cross, etc.), even in recent years; the government also supported the CRF with certain subsidies and recognise its efforts. Volunteers devote time and physical efforts. CRF has a system of budgetary control and usually meets the budgeted target and hardly overrun the budget.

Group of advisors divided into different sub-groups and each sub-group has assigned a list of volunteers to support the different allocated programs (called missions) such as **Sarv Niramaya**, **Nirog**, and **Aushad**, etc. Under mission **Aushad**, some of the pharma companies also engaged to develop the advance treatment and medicines to cure cancer. Under mission **Sarv Niramaya**, groups of advisors make representations to different stakeholders including the government on policy matters. Delegates of advisors attend different conferences and seminars wherein listen and present the views, which in turn share with associated volunteers for wider reach and building knowledge repository.

Required

- (i) Board of trustees at CRF are in doubt and divided over the need for performance measurement and evaluation. Majority is in favour of justifying the need. STATE your opinion. **(3 Marks)**
 - (ii) STATE at-least 3 difficulties associated with performance management in the case of CRF and give a possible way-out for the same. **(6 Marks)**
 - (iii) IDENTIFY at-least 2 key performance indicators against each of the critical success factors of CRF. **(6 Marks)**
 - (iv) Board of trustees at CRF, finally decided to apply value for money frame-work to assess the performance; but concerned about its utility and how to draw the integrated conclusion if the result of all the three 'Es' (dimensions for value of money) are not aligned to each other. ADVISE the management. **(5 Marks)**
2. Testy Food Court (TFC) is renowned local name all age of foodies for authentic taste and aroma. TFC has two divisions **Bake Studio** and **Hot Serve**. Both the divisions are working independently in two different kitchens of same hall building. Mr. Palash and her daughter Avnee manages the business, whereas son Subodh who is Chartered Accountant by profession also support the business with management consultancy.

Bake Studio division produces **cup-cake**. Cup-cake is baked in specially designed ovens and owing to lack of ovens and space in same; oven machines are considered as the bottleneck resource. Each cake requires 0.30 oven hours if oven is at 350° C. 500 oven hours are available each month. Each cup-cake is sold for ₹30. The direct material cost per cake is ₹15. All other cost of operating ovens per month is ₹22,500.

Hot Serve runs like café with reading facility and produces only two products on alternate day basis, **hot chocolate** and **latte** which pass through two processes, beating and preparing. There are one chef and one helper apart from 3 waiters. Ms. Avnee her-self manages the counter. Café starts at 10 AM in morning and remain open till 8 in evening. Idea is to customer focus; each cup of coffee is prepared separately at order and in accordance with specification. The requirement of time for each unit is expresses in matrix below–

Process\Product	Hot Chocolate	Latte
Beating	9.5 Minutes	7.5 Minutes
Preparing	9 Minutes	6.8 Minutes

Beating and Preparation process witness average downtime of 1.5 hours and 2.5 hours respectively on account of lunch hour of helper and chef and requisite cleaning of kitchen to maintain hygiene etc. The costs and revenue for each unit of Hot Chocolate and Latte are given below–

Particulars	Hot Chocolate	Latte
Direct Materials	40	30
Direct Labour	20	22
Variable Overhead	10	8
Absorbed Fixed Cost	10	5
Total Cost	80	65
Selling Price	100	80

Required

TFC recently adopt the back-flush costing system with a raw material inventory control account and throughput accounting on Subodh's advice.

- (i) DESCRIBE the feature (in brief) which distinguishes back-flush accounting from other systems? **(2 Marks)**
- (ii) COMPUTE the cup-cakes' throughput accounting ratio and INTERPRET the results. **(2+4 Marks)**
- (iii) If maximum possible sale in a day for hot chocolate and latte is 50 and 62 cups respectively, then PREPARE the daily production plan that would maximise the contribution, use both throughput and traditional approaches. Also, DISCUSS appropriateness of both approaches. **(4+4+4 Marks)**
3. TPE, South Asia's premier express air and integrated transportation & distribution firm, offers a wide range of innovative supply chain services including Express Distribution, 3PL and Consulting. TPE offers innovative logistics solutions to its customers, enabling them to focus on their core competencies. The firm adds maximum value to businesses at every level, right from providing world-class warehousing support to ensuring time-definite deliveries of goods anywhere in Country 'X'. The following information is available:
- (1) Each warehouse of TPE is solely responsible for all customers within a specified area. It collects couriers from customers residing within ambit of its own area for delivery both within the specific area covered by the warehouse and elsewhere in India.
 - (2) After collections of couriers, a warehouse forward them for delivery outside its own area to the warehouses from which the deliveries are to be made to the customers.
 - (3) Therefore, each warehouse must integrate its deliveries to customers to include:
 - (i) couriers that it has collected within its own area; and
 - (ii) couriers that are transferred to it from other warehouses for delivery to customers in its area.
 - (4) Each warehouse's revenue is based on the invoice value of all couriers collected from customers in its area, irrespective of the location of the ultimate distribution warehouse.
 - (5) Each warehouse costs consist its own operating costs plus some allocated proportion including centralised administration services (i.e. salary, legal & professional fees etc.) and distribution centre costs.
 - (6) The management team and all employees of each warehouse are paid incentives which remains payable quarterly. The bonus is based on the achievement of a series of target values by each warehouse.
 - (7) Internal benchmarking is used at TPE as to provide sets of absolute standards that all warehouses are expected to achieve.
 - (8) The Annexure exhibit the target values and the actual values achieved for each of a sample group of four warehouses situated in City SG, City HK, City NY, and City NZ.
- The target values consist of:
- (i) Warehouse revenue and profitability;
 - (ii) Courier delivery services and customer care; and
 - (iii) Credit period control and administrative efficiency.
- Incentives are based on a points system. It is also used as a stimulus for each warehouse improving the operational effectiveness. One point is awarded in case where the target value for each item in the Annexure is either achieved/ exceeded, and a zero point where the target is not achieved.

Annexure

Revenue and Profitability

Particulars	Revenue		Profit	
	Target	Actual	Target	Actual
	₹million	₹million	₹million	₹million
Company Overall	300	360	45	48
Warehouse				
City SG	24.00	22.50	3.60	3.45
City HK	21.00	27.00	3.15	3.60
City NY	18.00	21.00	2.70	3.30
City NZ	27.00	33.00	4.05	4.20

In order to calculate points of each warehouse, actual profit as a % of actual revenue must exceed the target profit as a % of target revenue.

Courier Delivery Services and Customer Care

Particulars	Target %	Actual			
		SG %	HK %	NY %	NZ %
Measure (% of total):					
Late collection of couriers	3.00	2.85	3.15	2.70	3.60
Misdirected couriers	6.00	6.30	5.85	4.95	7.65
Delayed response to complaints	1.50	1.05	1.35	1.20	1.80
Delays due to vehicle breakdown	1.50	1.65	2.10	0.45	3.00
Measure (% of revenue):					
Lost items	1.50	0.90	1.35	1.20	2.85
Damaged items	3.00	2.25	3.60	2.25	2.70

Credit Control and Administration Efficiency

Particulars	Target	Actual			
		SG	HK	NY	NZ
Average debtor weeks	5.50	5.80	4.90	5.10	6.20
Debtors more than 60 days (% of total)	5.00	?	?	?	?
Invoice queries (% of total)	5.00	1.50	1.40	0.80	2.70
Credit notes as a % of revenue	0.50	?	?	?	?

Other Information

(‘000)

Particulars	SG	HK	NY	NZ
Debtor Aging Analysis (extract)				
Less than 30 days	1,950.00	2,250.00	1,770.00	3,000.00
31–60 days	481.50	199.50	229.50	828.00
Value of Credit Notes raised during the period	67.50	54.00	42.00	198.00

Note: TPE operates all year round.

Required

Prepare a report for the directors of TPE.

- (i) ANALYSE the comparative performance of the four warehouses. **(8 Marks)**
- (ii) ASSESSE TPE from perspective of financial performance, service quality, resource utilisation, flexibility, innovation, and competitiveness; and **(8 Marks)**
- (iii) EVALUATE the performance measurement system at TPE. **(4 Marks)**
4. (a) RHB is a leading manufacturing company. Under increasing pressure to reduce costs, to control inventory level and to improve services, RHB's Costing Department has recently undertaken a decision to implement a JIT System.

The management of RHB is convinced of the benefits of their changes. But Supplies Manager "W" fears with the Costing Department's decision. He said:

"We've been driven by suppliers for years ... they would insist that we could only purchase in thousands, that we would have to wait weeks, or that they would only deliver on Mondays!"

Required

COMMENT on Mr. W's viewpoint. **(5 Marks)**

- (b) A customer wants to buy a System for a single year (after which it will be scrapped) with plans to use it for 2,500 hrs. Cost Structure (similar products):

Particulars	System-X	System-X ²
Operating Cost/ hour	₹ 5	₹ 7.50
Probability of System Crash	10%	0.5%
Price	₹ 37,500	?

Find the TEV for the System-X² if the cost of a System Crash to the buyer is ₹1,00,000. **(5 Marks)**

OR

IDENTIFY the appropriate pricing policy in each of the following independent situations:

- (i) 'A' is a new product for the company and the market and meant for large scale production and long term survival in the market. Demand is expected to be elastic.
- (ii) 'B' is a new product for the company, but not for the market. B's success is crucial for the company's survival in the long term.
- (iii) 'C' is a new product to the company and the market. It has an inelastic market. There needs to be an assured profit to cover high initial costs and the usual sources of capital have uncertainties blocking them.
- (iv) 'D' is a perishable item, with more than 80% of its shelf life over.
- (v) 'E' is modern patented drug entering the market. **(5 Marks)**
- (c) Murat District Cooperative Bank (M-DCB) was established in the year 1909, the 111-year-old district cooperative bank has become the oldest among the around 375 district banks in the country. Since M-DCB was established more than a century ago, hence has a traditional style of working; but bank now realise the need for change especially in its products; to survive and sustain the existing customer base, even to grow further. In the recent meeting of top-level management at M-DCB, a major discussion took place regarding the functionalities of the bank account it offers to business customers. However, no resolution has been adopted, and similar agenda will be discussed again in the next board meeting. The summary from the discussion that took place at the meeting are as under–

The executive head of the overall banking operation gave a briefing to board members about the existing features of bank account for business customers (BC). He mentioned that currently bank charges rupees 2.36 (₹2 + taxes) for each transaction at the branch (such as a deposit into the account, withdrawal from the account, electronic payments, and transfers), whereas its competitors or newly designed commercial banks offers such transactions to the business customers free of cost. Further, recent market research suggests if M-DCB does not revamp features of the bank account to business customers then it will lose 15% of existing business customers.

Currently, the bank pays interest @ 2% p.a. to the customer on any balance in the account and charge interest @ 14% p.a. on overdrawn accounts. Currently, the bank has a base of 18 lakhs business customers, who makes nearly 140 such transactions in a month period. Half of the business customers maintain the average credit balance of ₹1,20,000 each and the remaining half have overdrawn with an average debit balance of ₹45,000 each.

GM responsible for CASA operations suggested the rate of interest on credit balances shall increase by 1% p.a. and business customers shall be charged with the fixed annual account maintenance cost of ₹3,000 (taxes extra), to be paid in monthly instalments; in lieu of charges for transactions, to increase the base of business customers by 10%.

GM responsible for Customer Relations suggestion business customers shall not be charged for transactions and at the same time, no interest shall be paid on credit balance if any maintained by the business customers if M-DCB willing to increase business customers by 20%.

Required

ADVISE the Board of Directors (purely based on financial perspective), whether to change the features of the account for a business customer or not. Presume the tendency of both old and new customers regarding nature of balance and number of transactions expected to remain the same.

Annex the calculation to support your advice and **state the assumptions clearly** (if any). **(10 Marks)**

5. (a) Lite-On Power Solution (LPS) is producing laptop power adaptors (charger) using specially customised machine PA-C12. The management at LPS is highly concerned with the productivity of such a machine, because this machine is engaged in an activity which is a constraint function (bottleneck activity). Management at LPS constitutes a lean team with the objective of identifying the various techniques which can be used in order to enhance the overall productivity at LPS including the PA-C12 especially. PA-C12 is a human-operated machine and took a standard time of 20 minutes to produce one power adaptor.

Up-till now

LPS is working in three shifts in the day for 6 days a week. Each shift is of 8 hours with a lunch break of 30 minutes and two tea breaks of 15 minutes each. Shift change overtime is 30 minutes per shift. Preventive maintenance time per shift is 10 minutes. In a week downtime was 6 hours of which 5 hours are due to breakdown maintenance and remaining hour on account of power failure.

PA-C12 works through all three shifts. During the said week 306 adaptors were produced using PA-C12, out of which only 290 met the quality specification of the QC team.

Towards lean and way forward

In order to enhance the productivity of PA-C12, management at the advice of the lean team decided to apply TPM. A three-member TPM team (which is part of a lean team) specifically designated for PA-C12. As a result of efforts shift change over time reduced to 20 minutes. Preventive maintenance time further increased by 5 minutes per shift, but this results in a reduction of 4 hours in breakdown maintenance on a weekly basis. The worker agreed to the arrangement of a reduction of 5 minutes in each of tea break and extending the lunch break to 35 minutes.

Management is positive with the improving culture, but anxious to know the benefit out of TPM implementation and its performance in terms of improvement in productivity. TPM team which is responsible for the productivity of PA-C12 identified that in the recent week post-implementation of TPM, 320 adaptors were produced out of which 304 adaptors passed quality check.

Required

- (i) OEE can be the cornerstone of implementing TPM in Lite-On Power Solution? EXPLAIN.
(4 Marks)
- (ii) ANALYSE the TPM performance in terms of effective use of PA-C12 at LPS using a relevant approach.
(6 Marks)
- (b) Pizza House is an online Pizza delivery business. Pizza House is one of the QSR that created its own system, website, and app. Pizza House's pizza baking points having a home delivery system. Due to popularity of E Commerce awareness among the customers, online food order system come up with new opportunity for food business. Pizza House has grown rapidly due to boom in online platform. It is now operating around 1,000 points.

Pizza House's vision is to increase shareholder wealth by making and timely delivery of quality pizza. Pizza House provides customize pizzas as per customer's taste. People choose to order pizza online for different reasons not wanting or having time to cook, do not have to wait in a queue for order or taking delivery. During happy hours from 4pm-7pm, baking points have a great deal on both pizzas and beverages. The customers can call, text or order pizzas online. Pizza House's collection and delivery service uses delivery motorcycles and scooters to transport pizza parcels.

The process consists of a customer choosing the restaurant of their choice, scanning the menu items, choosing an item and finally choosing the place of delivery. Payment is then managed by cash on delivery, or with a credit card, debit card etc. when the delivery boy delivers the pizza at the customer's place of delivery.

Issue

Pizza House's delivery service is slow. It uses an automated reminder service like Dial My Calls to send updates to customers about the status of their order - when it goes into the oven, when it comes out, when it is out for delivery, and so on. Customers are willing to wait a little longer if they know that pizza is on its way. Slow delivery reduces the taste, aroma and flavor of pizzas delivered.

Recently, financial performance and market share of Pizza House has deteriorated. The CEO of Pizza House believes that reductions in customer satisfaction and flexibility, caused by a decline in operational performance, may have led to the recent deterioration. It has been suggested that to use the Lynch and Cross's Performance Pyramid to reverse this deterioration and four new measures for operational performance have been suggested.

Measure	Description
Live tracking system/ GPS driver tracker (to choose the best and the shortest routes for food delivery vehicles and to guide the drivers in real time basis)	Number of successful deliveries per day
On-time delivery	% of pizzas delivered within 30 minutes of the booking time
Fuel consumption	Average fuel consumption per km travelled
Improving the taste (It is proposed to use pizza delivery bags to keep the pizzas hot and fresh)	% of positive feedback

Required

EVALUATE the extent to which the suggested new measures can be used to manage operational performance at Pizza House. **(10 Marks)**

6. (a) N2 Co. is the manufacturer and supplier of firefighting and safety equipment for industrial use and follows the international quality standards and uses the high grade raw material. It is a fast-growing brand that protects millions of people across the India, every single day. N2 has been offered a bid on a prospective export contract for 20,000 commercial fire extinguishers with following specification from USA buyer and the delivery terms is FOB.

“two-gallon cylinder holding 10 pounds of multi-purpose dry chemical at 380 PSI”

N2 is exporting first time. The price computation per fire extinguisher is as follows:

	₹	₹
Direct Material		
Circle Part Cost	620	
Necking Part	30	
Bottom Part	50	
Fire Extinguisher Powder	590	
Heat Process	50	
Nozzle	60	
Meter	20	
Pipe	50	
Nitrogen	30	1,500
Direct Labor (2 hrs. × ₹40)		80
Leakage Testing		50
Variable Overheads (including packing)		214
Export Clearance Charges on FOB term		36
Fixed Overhead		100
Total		1,980
Add: Markup @ 10%		198
Price		2,178
USD to ₹		67
Price in USD		32.51

After quotation of USD 32.51, the buyer is negotiating the price and ready to pay only USD 28.50.

Required

ADVISE whether it is worth accepting at USD 28.50 considering other factors. **(10 Marks)**

- (b) During September 2020, Marcus offers bundling and item packing facilities (for standard size 24"×20"×24") to give best facility to satisfy its industrial customers' need at the Pacific Warehouse. Marcus plans to pack 93,750 items at the rate of ₹4.50 per item. Marcus estimates that variable cost (all resources) will be equal to ₹1.50 per item packed and that fixed costs (rent, electricity, and maintenance charges) will be equal to ₹58,000 p.m. In September 2020, Marcus packed 1,12,500 items and received ₹5,06,250 as total revenue. However, Marcus paid ₹1,80,000 on resources (including urgent purchase of tape at retail price). In addition, Marcus paid ₹70,000 to the warehouse administration for rent, electricity, and maintenance charges. (This past September was unusually hot, and Marcus is charged a percentage of the warehouse's actual electricity bill.)

Required

PREPARE a budget reconciliation report along with suitable analysis.

(4+6 Marks)