

Roll No.

Total No. of Questions – 6

Time Allowed – 3 Hours

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Total No. of Printed Pages – 16

Maximum Marks – 100

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Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate has not opted for Hindi Medium, his/her answers in Hindi will not be valued.

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 respective answers.

No Statistical or other tables will be provided with this question paper.

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1. Flex Fashions is an Indian retail clothing chain company. It specializes in designing and selling new fashion clothes and accessories. The primary factor in Flex's successful run is attributable to two simple business connotations compared to its peers :

(i) **Management's Philosophy centers around preserving views like –**

- Failure to recognize our failures creates conditions for more failures.
- Lot of ideas will remain ideas unless you have a strong team.
- One satisfied customer brings in ten new customers with him whereas one dissatisfied customer takes away ten.

(ii) **Business Philosophy is centered on three basic aspects –**

- Flex Fashions supply chain is highly responsive and is central to its business success.
- It brings innovative and exclusive clothing and accessory designs every three weeks on an average, where as its competitors change the designs every two or three months.

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- It carries more than 10,000 distinct varieties of items per year in hundreds of its stores, compared to its competitors, who carry 2,000 to 3,000 items in their stores.

Business Strategy

Flex Fashions core market is female oriented in the age group of 20 to 35 years. The company reaches out this market by opening their stores in town centers and places with high concentration of females in this age range.

Research for demand forecasting for clothing and other accessories and recent trends in the fashion industry are observed by visiting colleges, universities, health clubs, pubs, etc., in different cities. The research data is used to set the product demand levels in the different stores.

Reducing production activities (short production runs) to create scarcity of specific designs generates a sense of eagerness to buy, while supplies last. As a consequence, Flex Fashions does not have lots of excess inventory, nor does it need to bring big mark-downs on its clothing and accessory range. Hence, Flex Fashions has high inventory turnover ratio compared to its peers. But such short-term focused order cycles demand forecast requires to be much more accurate than its competitors and need reliable suppliers.

The company adopts a limited exchange/return policy whereby any customer, who is not happy with the product, whether it is found damaged or defective, needs a change in colour or design or for any other reason, is allowed to return the product within three days only. Even though it is less than the competitors' average of seven days, the company adopts this strict return policy to have clear control over its inventory management.

Customers visit the Flex Fashions stores twelve times in a year on an average compared to just three times in a year for its competitors. The state of art structure of Flex Fashions stores encourages customers to

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visit the stores instead of ordering on the internet. As a result, Flex Fashions sells 85 percent of items at full price compared to 65 percent of items at full price by its competitors. Further, the advantage of higher customer step-in's just leaves 8 to 9 percent of items unsold compared to the industry average of 15 to 20 percent. As the company is less tech savvy, the present business model even though it yields excellent results in the major cities is limiting the market in remote locations.

Flex's factories can quickly increase and decrease the production rates, so that there are fewer inventories in the supply chain and less requirement of the working capital. The company produces only 35 to 40 percent of their manufacturing in advance versus the 80 to 90 percent done by competitors. The company does not need to place big bets on yearly fashion trends. They can make many smaller bets on short term trends that are easier to predict. However, the reliability of suppliers is vital as any disruption would delink the supply chain.

The company's supply chain is fast moving, finely tuned and requires constant attention to keep it running smoothly. Supply chain planners and managers of the company are constantly watching customer demand and making adjustments to manufacturing and supply chain operations.

The founder of Flex Fashions, Mr VK is aging and could foresee the need of management transfer to the next generation by the end of the decade. To facilitate smooth sailing, he wants to develop a second line to understand the complex business operations of the company. He believes that irrespective of too many successful milestones the company has passed, challenges always remain and the worst may hit any time. Success is not always guaranteed and failure could greet any time. He wanted to identify the talent and to bring suitable replacement, to keep the successful track of the company for further decades to come.

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Presuming that you are one of the contenders to be his substitute, you are requested to analyse the situations given to you along with the existing policies, procedures and circumstances that the company is dealing with.

Required :

- | | |
|---|----------|
| (i) The three management philosophies defined by Flex Fashions is no doubt essential for the success of any entity in general, but is there any specific philosophy that can be directly related to any one of the processes of Supply Chain Management ? Identify and explain the process. | 3 |
| (ii) Apart from the above, discuss the other seven processes that would fit in the supply chain management framework. | 7 |
| (iii) It appears that Flex Fashions evaluates the probable demand through analysing the customer behavioural thinking by visiting schools; colleges etc. and amend its supply chain. Advise on any factors that should be specifically looked during such analysis. | 2 |
| (iv) Describe the types of supply chain in the context of the company, citing the requirement of the separation of supply chain. | 2 |
| (v) Do you feel that all is well with Flex Fashions Supply Chain ? Evaluate three areas where risk mitigation is possible in near future. | 3 |
| (vi) Mr VK used to convey on different forums and meetings of the company that "the blueprint of supply chain model used by our company is easy to imagine but difficult to practice." To use the methodology effectively, the incumbent must learn about the models and operating procedures used by the company for the last 30 years. Good supply chain models enable people to understand the potentials and see the opportunities that a real-time supply chain offers. Evaluate the statement given by Mr VK. | 3 |

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2. (a) Alive Bottles Company is a growing manufacturer and supplier of the finest quality plastic water bottles. The full cost of one set (2 plastic bottles of 1 litre each) is ₹ 400. These bottles are available in multicolour. These bottles are leak-proof and ideal for storing cold beverages. These bottles are made with food-grade plastic and are safe to store beverages. The company produces and sells 95,000 sets per annum. The company has fixed its selling price to earn 20% profit on the selling price. Relevant cost data per annum are as follows :

Cost Component	Budget	Actual	Actual Cost p.a. (₹)
Direct Material	28,000 Kg.	31,920 Kg.	1,90,00,000
Direct Labour	32,000 Hrs.	35,625 Hrs	57,00,000
Machine Setup	10,000 Hrs.	10,000 Hrs.	38,00,000
Mechanical Assembly	60,000 Hrs.	60,000 Hrs.	95,00,000

It has been revealed that the actual and budgeted operating levels are the same. Actual and standard rates of material purchase and labour rate per hour are also the same. Any variance in cost is solely on account of the difference in the material usage and hours required to complete the production.

Another manufacturer has launched a similar set of bottles in the market at an aggressive price of ₹ 460 per set which has resulted in a downfall in the sales volume of the company. The management is concerned with the current market situation. It has called a meeting of the development and marketing team. After the meeting, the following decisions have been taken :

- (I) To alter the design to make the bottle more attractive with a curvy shape that ensures a better grip and a handy wrist strap that helps to carry it with ease and also hang if necessary. This will cost ₹ 10 per set.
- (II) To maintain the company's existing sales volume and amount of present profit per set, reduce the selling price by ₹ 50.

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Required :

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| (i) Calculate the present selling price and profit per set. Also, calculate the mark-up % on the full cost per set. | 3 |
| (ii) Identify the non-value-added activities in the production process. | 1 |
| (iii) Calculate the new target cost per set and the new revised cost per set after implementation of the above decisions. | 2 |
| (iv) Calculate the amount of reduction in cost that is required to achieve the new target cost. | 1 |
| (v) Recommend the strategy, the company should adopt to achieve the target cost calculated in (iii) above. | 5 |
- (b) S Limited is a medical equipment manufacturing company and manufactures Magnetic Resonance Imaging (MRI) machines, pacemakers, blood pressure monitors, chemistry/blood gas analyzers, and wireless patient monitors etc. The company uses JIT manufacturing and carries insignificant levels of inventory. The company manufactures everything needed for manufacturing medical equipment except for semiconductors which is purchased from two local suppliers: RIM Electronics and XYZ Limited. Both the suppliers are reliable and seldom deliver late; however, RIM sells the semiconductor for ₹ 564 per unit while XYZ sells the same semiconductor for ₹ 516 per unit. S Limited purchases 80 percent of semiconductors from XYZ Limited because of its lower price. The total annual demand is 10,00,000 units of semiconductors.
- Ms Geena, RIM's vice president sales, recently met Jatin, purchasing manager of S Limited and urged him to purchase more of its units, arguing that RIM's semiconductor is of much higher quality and so should prove to be less costly than its competitor's low-quality semiconductor. Geena offered to supply S Limited with all semiconductors required and asked for a long-term contract. With a five-year contract for 8,00,000 or more units, RIM will sell the semiconductor for ₹ 540 per unit. Jatin is intrigued by the offer and

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wonders if the higher-quality semiconductor actually does cost less than the lower-quality semiconductor purchased from XYZ Limited. To assess the effect on cost of the two semiconductors, the following data were collected for supplier related activities and suppliers :

Activity data

	Activity Cost
Inspecting semiconductors (sampling only)	₹ 57,60,000
Reworking products (due to failed semiconductors)	₹ 1,82,55,000
Warranty work (due to failed semiconductors)	₹ 11,52,00,000

Supplier data

	RIM	XYZ
Purchase price per unit	₹ 564	₹ 516
Number of semiconductor units purchased	2,00,000 units	8,00,000 units
Sampling hours	40 hours	1960 hours
Rework hours	90 hours	1410 hours
Warranty hours	400 hours	7600 hours

Required :

- (i) Evaluate the cost per unit for each supplier, taking into consideration the costs of the supplier-related activities and using the current prices and sales volume. Advise, whether the purchase manager of S Limited should accept or reject the contractual offer made by RIM. **5**
- (ii) Suppose that S Limited loses ₹ 2,40,00,000 in sales per annum because of the reputation effect of defective units attributable to failed semiconductor. Select one of the drivers already listed, and assign the cost of lost sales to each supplier. Calculate change in per unit cost of each supplier. (Assume the situation before RIM accepting the offer exists.) **3**

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3. Chetan, an owner of a firm, operates a chain of fast-food restaurants that has expanded to more than 50 outlets, of which 90 percent are franchised. Two of the firm-operated outlets, RST and XYZ, are among the fastest growing outlets. Both are considering expanding their menus to include pasta. Purchase and installation of the necessary equipment costs ₹ 10,80,000 per outlet. Other information is as follows :

Particulars	RST (₹)	XYZ (₹)
Current Investment	53,40,000	104,40,000
Revenue	66,03,000	105,64,000
Expense	55,35,000	89,98,000

Adding pasta to the menu may increase the profits by ₹ 1,83,600 for RST and ₹ 2,19,600 for XYZ outlets, respectively.

The firm evaluates its manager's performance on the basis of return on investment. Managers of individual outlets have decision rights over the pasta expansion.

Required :

- (i) Calculate the return on investment for both outlets before pasta is added, for the pasta project only, and for both the outlets after expansion. 4
- (ii) Assuming a 14 per cent cost of capital, calculate residual income for both outlets before and after the potential expansion. 4
- (iii) Evaluate on the basis of ROI whether the firm's operated outlets RST and XYZ would choose to expand their menus. What difference would the answer make if the outlets were franchised? 3
- (iv) Chetan is seeking investment funds to expand the chain of fast-food restaurants to 100 outlets, which would be firm's operated. He is currently in the process of putting together a business plan which will outline his strategy to increase the firm-operated outlets. He recently attended a seminar on what to include in a business plan. Chetan remembers that he will need to determine what the Critical Success Factors (CSFs) for his business are, but he is confused about how these differ from core competences.

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- (a) Assess why Chetan needs to identify CSFs as part of its strategy development and how they differ from core competences. **6**
- (b) Advise the possible CSFs for Chetan's chain of fast-food restaurants. **3**

4. (a) GBTCL Bearings is a multi-product manufacturing company. It is preparing its annual budget for 2023-24. The management has come to know that in the last year, the budget presented before them, was prepared without the involvement of senior staff in the budget process. Now the management has strictly advised the budget team to involve the senior staff in the budget process for 2023-24.

Required

List the potential three advantages and two disadvantages to the GBTCL Bearings of involving the senior staff in the budget preparation process. **5**

OR

CEC Limited produces electric scooters. CEC uses a system of standard costing to set its budgets. Budgets are set annually by the Finance department and approved by the Board of Directors of CEC. The Finance department prepares variance reports each month for review at the Board of Directors meeting, where actual performance is monitored by comparison to budgeted figures.

A new CFO (Chief Finance Officer), Akshaj has recently joined CEC from a competitor organisation where there was a Total Quality Management culture. Akshaj is keen to discuss the implementation of Kaizen costing at the next meeting of the Board of Directors. He would also like to review the current planning and control system at CEC with a view to making changes so that it could support Kaizen costing concepts.

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Required :

- (i) Explain two basic principles of Total Quality Management. 2
- (ii) Recommend three changes required to CEC's planning and control system to support the adoption of Kaizen costing concepts. 3
- (b) The management of a leading telecom company providing fixed-line services is quite worried about customer complaints regarding service quality and billing. The company has appointed Mr Kumar as its head of service quality. He has been assigned the task to analyse the complaints received from the customers for faults, excess charging, customer service etc. The necessary information is given below :

Complaint Categories	No. of Complaints
Customer Service	155
Activation of wrong plans	110
Connection Installations	106
Late attending to complaints	247
Overcharging/Wrong Billing	504
Faults in Line	385
Transfer of connections	45
Non-posting of payments to account	61

Required :

- (i) Prepare a frequency table to construct Pareto Chart for the complaint type. (Pareto chart preparation is not required) 3
- (ii) Identify the key complaint categories area where the head service quality should focus on ? 2
- (Calculations up to 2 Decimals)

- (c) GPR furniture is a manufacturer of high quality wooden doors. It has two customers VGB and VGC. The selling price of one wooden door is ₹ 7,000. The production cost per unit is ₹ 5,350.

Details of customers' VGB and VGC for the period are given below :

Particulars	Customer VGB	Customer VGC
Wooden Doors purchased (nos.)	1,250	2,500
No. of purchase orders	10 (each of 125 doors)	20 (each of 125 doors)
No. of deliveries		
– Normal	8	0
– Rushed	2	0
Kilometres per delivery	200	200

Additional costs are :

Order processing cost	₹ 3,000 per order
Normal delivery cost	₹ 20 per kilometre
Product handling cost	₹ 100 per door
Rushed delivery cost	₹ 30 per kilometre

The company has the policy to give a discount of 6% on the selling price on orders for 100 doors or more and to further give a 10% discount on the undiscounted selling price if a customer uses his own transport to take the delivery at the factory gate.

Assume that production levels are not altered by these orders.

Required :

- (i) Calculate the contribution and profit per unit for each customer. 6
- (ii) Analyse the profitability by comparing profit per unit for each customer. 2
- (iii) Comment on the discount policy on normal delivery. 2

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5. (a) A manufacturing company furnishes the following data relating to the actual output of 14,300 units produced in the last quarter :

Particulars	(₹)	(₹)
Sales A		12,28,000
Direct Material	2,17,750	
Direct Wages	1,72,500	
Variable Overheads	2,12,000	
Total Cost B		6,02,250
Profit (A-B)		6,25,750

The standard material cost per unit is ₹ 15. The standard wage rate is ₹ 10.50 per hour and the standard variable overhead rate is ₹ 12.50 per hour.

The company uses a JIT system and the budgeted production and sale quantity is 15,000 units.

The following are the variances from standard costs recorded during the last quarter :

	Particulars	Variance (₹)
1.	Direct Material Cost Variances	3250 A
2.	Direct Labour Variances	
	Labour Rate Variance	2,640 F
	Labour Efficiency Variance	5,040 F
3.	Variable Overhead Variances	
	VOH Expenditure Variance	?
	VOH Efficiency Variance	?
4.	Sales Variance	
	Sales Price Variance	12,500 F
	Sales Volume Variance	?

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Required :

- (i) Calculate the missing variances. 6
- (ii) Prepare the original budget and reconcile the budgeted profit with the actual profit. 6

(b) Unique Products Limited manufactured and sold 7,500 units per year of a particular product, generating sales value of ₹ 7,50,000. After charging direct material cost 30% of sales value, direct labour cost 20% of sales value and variable overheads cost ₹ 10 per unit, the company earned ₹ 16.65 per unit during the year.

The existing equipment can produce a maximum of 10,000 units per annum. In case, the demand exceeds the maximum output, new equipment will be required which will cost ₹ 5 Lakhs and it will have a life span of 10 years, with no residual value.

A prospective customer is willing to place an order with the company for 5,000 units per year regularly at 90% of the present selling price, which will be, if accepted, over and above the existing market for 7,500 units.

Irrespective of the fact whether or not the new order materializes, the cost increase with immediate effect is :

- (i) 10% in the Direct Materials.
- (ii) 25% in the Direct Labour.
- (iii) ₹ 25,000 in fixed overheads per year.

If the order of additional 5,000 units is accepted, the fixed overheads will increase by another ₹ 25,000 by way of increased administration expenses. (Assume there are no opening/closing stock inventories. Variable cost will increase in direct proportion to the output.)

You are required to recommend whether the company should accept the new business at the stipulated price or decline the new order and make a concerted sales drive to sell the present unused capacity at the present selling price. The sales drive will cost ₹ 30,000 per year. 8

Note :- Ignore the financial charges on the cost of the equipment

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6. (a) APR is about to launch a new model of a gaming console, Product 'AS5'. Product 'AS5' is the company's first gaming console and features unique technology developed by APR. APR expects the unique technology and exclusive design to attract both new and existing customers.

Given the unique nature of this gaming console, APR has no experience of the price demand relationship of this product. However, based on experience from previous products, it expects that during the product's introductory phase, at a selling price of ₹ 21,000, the demand would be 2,000 units per month. For every ₹ 2,000 increase in selling price the monthly demand would reduce by 250 units, and for every ₹ 2,000 decrease in selling price the monthly demand would increase by 250 units.

The variable costs of production for one unit of Product 'AS5' are as follows :

Direct materials	₹ 8,925
Direct labour	₹ 5,975
Variable overhead	₹ 2,100

APR is planning a digital marketing campaign during the introductory phase of product 'AS5'. The total cost of the digital marketing campaign is yet to be finalised with the marketing team. However, after deducting the cost of digital marketing campaign, the CEO requires a minimum profit of ₹ 1,26,25,000 for the introductory phase. The introductory phase of Product 'AS5' is expected to have a duration of three months. There are no other specific fixed costs associated with Product 'AS5'.

Required :

- (i) Calculate the maximum cost of the digital marketing campaign to meet the CEO's profit requirement for the product 'AS5' introductory phase.

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Note : The Company will set the price for a unit of Product 'AS5' to maximise profit during the introductory phase.

$$\text{If } P = a - bx \text{ then } MR = a - 2bx$$

(ii) Discuss two reasons why it may not be appropriate to set the introductory price of Product 'AS5' using the assumptions contained in the profit-maximisation model you used in part (i).

(b) Rose Limited is a producer of A2 milk and a variety of dairy products that it sells under the brand name "ROSE" to various retail outlets across the city. The company operates on a financial year basis and begins its annual budgeting process in the last week of March when the Chief Executive Officer (CEO) establishes targets for total sales revenue and net operating income before taxes for the next financial year. The sales target is given to Marketing Department, where the Marketing Head, Charan formulates a sales budget in both units and value terms. Charan also estimates the cost of the marketing activities required to support the target sales volume and prepares a tentative marketing expense budget. The Operations Head uses the sales and profit targets and the tentative marketing expense budget to ascertain the amount that can be budgeted for purchases and office expenses. After estimating the amount required for office expenses, the Operations Head then forwards to the Purchases Department, the amount that is proposed to be utilised for purchases. Ms Nisha who is in-charge of production and purchases develops a purchases plan that will acquire the required quantity of inventory when needed within the cost constraints set by the Operations Head.

However, despite having targets none of these departments has achieved their budgets in recent years. Sales often run below the target. Also, the profit target is hardly met since costs are not cut enough. In fact, costs often run above the original budget in all departments.

The CEO is concerned that the company had not been able to meet its sales and profit targets. He employed a consultant with considerable relevant industry experience. The consultant suggested a participatory budgeting approach where the marketing and production managers would be requested by the CEO to coordinate in order to estimate sales and purchases quantities.

Charan decided that he would make a beginning by looking at recent sales history, potential customers, and customers' spending patterns. Subsequently, he would intuitively forecast the best sales quantity and pass it to Ms Nisha so she can estimate purchases quantity. Charan and Ms Nisha did not want to fall short of the sales estimates; they gave themselves 'a little breathing room' by lowering the initial sales estimates between 5% and 10%. As a result, they had to adjust the projected purchases as the year progressed, which changes the estimated ending inventory. They also made similar adjustments to expenses by adding at least 10% to the initial estimates.

Required :

- | | |
|---|---|
| (i) Identify the budgeting approach presently being followed. | 1 |
| (ii) Evaluate why the company's original budget approach failed to achieve the CEO's sales and profit targets. | 2 |
| (iii) Discuss the key features of the participatory budgeting approach as recommended by the consultant. | 3 |
| (iv) Evaluate why the sales estimates have been understated and projected purchases overstated by the marketing head and procurement manager under the new budget approach. | 2 |
| (v) Explain what is meant by budgetary slack. | 2 |