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NEW SCHEME

FINAL COURSE – GROUP I
PAPER 5: STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

Syllabus 100%

Question 1 is compulsory.
The students may attempt any five of the remaining six questions
All the workings shall form a part of part of your answer.

Maximum Time : 3 hours *Maximum Marks : 100*

100 A

1. a) Sun Electronics manufactures and sells various electronic goods like mobile phones, laptops, televisions, refrigerator etc. The company sells these goods through the 30 stores situated in different parts of the country. The store managers place a request to the centralised team situated in Mumbai on a monthly basis. One store can send only one requisition per month.

   The requirements of the stores are forwarded to the production planning team which is responsible for scheduling the manufacturing of these products. Once the goods are manufactured, the goods are sent to a central warehouse in Mumbai and are dispatched to different stores according to the store requirements. The time taken from placing a request from store to the delivery of product to the store takes about 30-40 days on an average. In the process the company procures parts from more than 100 vendors. The company has faced quality related issues with many vendors leading to delay in production.

   The average holding period of inventory in Sun Electronics is very high at 45 days as against an industry average of 15 days. Since the order to delivery time at a store is very high, the company has traditionally allowed high inventory holding to reduce the stock outs at store level. The company is under severe pressure to improve its working capital cycle.

   A high amount of inventory held at each store also means that the products become obsolete quickly. In case of products like mobile phones, new and upgraded versions are available in the market as early as six months from the date of initial launch of a particular model. A significant

portion of inventory of mobile phones becomes obsolete every year. The company generally resorts to a discounted sale to liquidate such obsolete models.

The management at Sun Electronics has identified e-commerce as an opportunity for faster growth, both in terms of revenues and profitability. The company is considering launch of its own e-commerce website to sell all products which are currently being sold in physical stores. Depending upon the success of online sales, the company might choose to optimize and close certain physical stores in the next couple of years.

The management of the company is cognizant of the fact that existing inventory procurement and management system will not fit in the new e-commerce business. E-commerce works on a inventory light model and quick as well as on time delivery of products of the customers. The fact that customers could be from a location other than those where Sun Electronics has physical presence makes the matter complex.

Required:

The company is considering implementation of a supply chain management system. Will a supply chain management system be of use to Sun Electronics in light of the e-commerce venture? You are required to EXPLAIN the concept of Supply Chain Management and EVALUATE the applicability of in the current case.

(20 marks)

2. A & T International Ltd. (ATIL) has developed a new product ' α^3 ' which is about to be launched into the market. Company has spent `30,00,000 on R&D of product ' $\alpha^3$ '. It has also bought a machine to produce the product ' $\alpha^3$ ' costing `11,25,000 with a capacity of producing 1,100 units per week. Machine has no residual value.

   The company has decided to charge price that will change with the cumulative numbers of units sold:

Cumulative Sales (units)	Selling Price ` per unit
0 to 2,200	750
2,201 to 7,700	600
7,701 to 15,950	525
15,951 to 59,950	450

59,951 and above	300

Based on these selling prices, it is expected that sales demand will be as shown below:

Weeks	Sales Demand per week (units)
1-10	220
11-20	550
21-30	825
31-70	1,100
71-80	880
81-90	660
91-100	440
101-110	220
Thereafter	NIL

Unit variable costs are expected to be as follows:

	` per unit
First 2,200 units	375
Next 13,750 units	300
Next 22,000 units	225
Next 22,000 units	188
Thereafter	225

ATIL uses just-in-time production system. Following is the total contribution statement of the product ' α^3 ' for its Introduction and Growth stage:

	Introduction	Growth	
Weeks	1 - 10	11 - 30	
Number of units Produced and Sold	2,200	5,500	8,250
Selling Price per unit (`)	750	600	525
Variable Cost per unit (`)	375	300	300
Contribution per unit (`)	375	300	225
Total Contribution (`)	8,25,000	16,50,000	18,56,250

Required

(i) PREPARE the total contribution statement for each of the remaining two stages of the product's life cycle. *(4 Marks)*

(ii) DISCUSS Pricing Strategy of the product 'α^3'. *(6 Marks)*

(iii) ANALYSE possible reasons for the changes in cost during the life cycle of the product 'α^3'. *(10 Marks)*

Note: Ignore the time value of money.

(4 marks)

3. a) "It's frustrating working with Denial. He's very dominant and expects everything to be done his way. We have done more and better work to get up to budget, and the minute we make it he tightens the budget on us. We can't work any faster and still maintain quality. We always seem to be interrupting the big jobs for all those small rush orders. The accountants seem to know everything that's happening in my department, sometimes even before I do. I thought all that budget and accounting stuff was supposed to help, but it just gets me into trouble. I'm trying to put out quality work; they're trying to save money. This is a dead end job. I don't see much of a future here."

   – said Mr. Singh, manager of the machine shop of Global Mfg. Ltd. a UK based Company.

   Mr. Singh had just attended the monthly performance evaluation meeting for plant department heads. These meetings had been held on the third Friday of each month since Mr. Denial, MBA from Manchester University, had joined the Indian operations a year earlier. Mr. Singh had just been given the worst evaluation he had ever received in his long career with Global Mfg. Ltd. He was the most respected of the experienced machinists in the company. Old Plant Manager had often stated that the company's success was due to the high quality of the work of machinists like Mr. Singh. He had been with Global Mfg. Ltd. for many years and was promoted to supervisor of the machine shop when the company expanded and moved to its present location. As supervisor, Mr. Singh stressed the importance of craftsmanship and told his workers that he wanted no careless work coming from his department.

   When Mr. Denial became the plant manager, he directed that monthly performance comparisons be made between actual and budgeted costs for each department. The

departmental budgets were intended to encourage the supervisors to reduce inefficiencies and to seek cost reduction opportunities. The company controller was instructed to have his staff 'tighten' the budget slightly whenever a department attained its budget in a given month; this was done to reinforce the plant supervisor's desire to reduce costs. Mr. Denial often stressed the importance of continued progress toward attaining the budget; he also made it known that he kept a file of these performance reports for future reference.

Required

IDENTIFY the problems which appear to exist in budgetary control system and explain how budgetary control system could be revised to improve the effectiveness.

(10 marks)

b) M. India Ltd. (MIL) is an automobile manufacturer in India and a subsidiary of Japanese automobile and motorcycle manufacturer Leon. It manufactures and sells a complete range of cars from the entry level to the hatchback to sedans and has a present market share of 22% of the Indian passenger car markets. MIL uses a system of standard costing to set its budgets. Budgets are set semi-annually by the Finance department after the approval of the Board of Directors at MIL. The Finance department prepares variance reports each month for review in the Board of Directors meeting, where actual performance is compared with the budgeted figures. Mr. Suzuki, group CEO of the Leon is of the opinion that Kaizen costing method should be implemented as a system of planning and control in the MIL.

Required

Recommend key changes vital to MIL's planning and control system to support the adoption of 'Kaizen Costing Concepts'.

(6 marks)

c) Distinguish Strategic Cost Management with Traditional Cost Management.

(4 marks)

4. a) Great Vision manufactures a wide range of optical products including lenses and surveillance cameras. Division 'A' manufactures the lenses while Division 'B' manufactures surveillance cameras. The lenses that Division 'A' manufactures is of standard quality that has a number of applications. Due to huge demand in the market for its products Division 'A' is operating at full capacity. It sells its lenses in the open market for ` 140 per lens, the variable cost of production for each lens is ` 110, while the total cost of production is ` 125 per lens.

   The total production cost of a camera by Division 'B' is ₹400 each. Currently Division 'B' procures lens from foreign vendors, the cost per lens would be ` 170 each. The management of Great vision has proposed that to take advantage of in-house production capabilities and consequently the procurement cost of the lens would reduce. It is proposed that Division 'B' should buy an average of 5,000 lenses each month from Division 'A' at ` 120 per lens. The estimate cost of a surveillance camera is as below:

Other components purchased from external vendors	` 150
Cost of lens purchased from Division 'A'	` 120
Other variable costs	` 30
Fixed overheads	` 50
Total cost of a camera	` 350

   Each surveillance camera is sold for ` 410. The margin for each camera is low since competition in the market is high. Any increase in the price of a camera would reduce the market share. Therefore, Division 'B' cannot pay Division 'A' beyond ` 120 per lens procured.

   Great vision's management uses Return on investments (ROI) as a scale to measure the divisional performance and marginal costing approach for decision making.

   Required:

   (i) ANALYZE the behavioral consequences of each division when Division 'A' supplies lenses to Division 'B' at ` 120 per lens? Substantiate your answer based on the information given in the problem.

   (ii) ANALYZE if it would be beneficial to the company as a whole for Division 'A' to supply the lenses to Division 'B' at ` 120 per lens.

(iii) Do you feel that the divisional managers should accept the inter-divisional transfers in principle? If yes, CALCULATE the range of transfer price?

(iv) ADVISE alternate transfer pricing models that the chief executive of the company can consider in order to change the attitude of the divisional heads if they are against the transfer pricing policy.

(v) CALCULATE the range of transfer price, if Division 'A' has excess capacity and can accommodate the internal requirement of 5,000 lens per month within the current operations.

(10 marks)

b) Golden Pacific Airlines Ltd. operates its services under the brand 'Golden Pacific'. The 'Golden Pacific' route network spans prominent business metropolis as well as key leisure destinations across the Indian subcontinent. 'Golden Pacific', a low-fare carrier launched with the objective of commoditizing air travel, offers airline seats at marginal premium to train fares across India.

Profits of the 'Golden Pacific' have been decreasing for several years. In an effort to improve the company's performance, consideration is being given to dropping several flights that appear to be unprofitable.

Income statement for one such flight from 'New Delhi' to 'Leh' (GP - 022) is given below (per flight):

	`	`
Ticket Revenue (175 seats x 60% Occupancy x ` 7,000 ticket price)		7,35,000
Less: Variable Expenses (`1,400 per person)		1,47,000
Contribution Margin		5,88,000
Less: Flight Expenses:		
Salaries, Flight Crew	1,70,000	
Salaries, Flight Assistants	31,500	
Baggage Loading and Flight Preparation	63,000	
Overnight Costs for Flight Crew and Assistants at destination	12,600	
Fuel for Aircraft	2,38,000	

Depreciation on Aircraft	49,000*	
Liability Insurance	1,47,000	
Flight Promotion	28,000	
Hanger Parking Fee for Aircraft at destination	7,000	7,46,100
Net Gain / (Loss)		(1,58,100)

* Based on obsolescence

The following additional information is available about flight GP-022.

1. Members of the flight crew are paid fixed annual salaries, whereas the flight assistants are paid by the flight.
2. The baggage loading and flight preparation expense is an allocation of ground crew's salaries and depreciation of ground equipment.
3. One third of the liability insurance is a special charge assessed against flight GP- 022 because in the opinion of insurance company, the destination of the flight is in a "high-risk" area.
4. The hanger parking fee is a standard fee charged for aircraft at all airports.
5. If flight GP-022 is dropped, 'Golden Pacific' Airlines has no authorization at present to replace it with another flight.

Required:

Using the data available, prepare an ANALYSIS showing what impact dropping flight GP- 022 would have on the airline's profit.

(10 marks)

5. a) Aayla runs the Planetarium Station in New Delhi, India. The strength of the station lies in its live interactions and programs for visitors, students and amateur astronomers. The station is always active with programs for school and college students and for amateur astronomers. One of the station's key attractions is a big screen IMAX theatre. IMAX is a 70 mm motion picture film format which shows images of far greater size and resolution than traditional film systems. The IMAX cinema projection standards were developed in Canada in the late 1960s. Unlike traditional projectors, the film is run horizontally so that the image width is greater than the width of the film.

The average IMAX show at the station attracts 120 visitors (50 children and 70 adults) at a ticket price of `160 for children and `200 for adults. Aayla estimates that the running costs per IMAX show are `10,000. In addition, fixed costs of `7,500 are allocated to each show based on annual estimate of the number of IMAX shows.

The Hobart School has approached Aayla about scheduling an extra show for its class VIII students. One hundred students and five teachers are expected to join the special show on the 'Planets & Solar System', a feature that is currently showing. The school has asked Aayla for a price quote. The special show will take place at 08:30 AM when the IMAX is not usually open.

Required:

RECOMMEND the minimum amount that Aayla should charge.

(10 marks)

b) What are the applications of incremental cost techniques in making managerial decisions?

(10 marks)

6. a) RST Ltd. is specialists in the manufacture of sports goods. They manufacture croquet mallets but purchase the wooden balls, iron arches and stakes required to complete a croquet set.

Mallets consist of a head and handle. Handles use 2.5 board feet per handle at ` 50 per board foot. Spoilage loss is negligible for the manufacture of handles. Heads frequently split and create considerable scrap.

A head requires 0.40 board feet of high quality lumber costing ` 60 per board foot. Spoilage normally works out to 20% of the completed heads. 4% of the spoiled heads can be salvaged and sold as scrap at ` 10 per spoiled head.

In the department machining and assembling the mallets, 6 men work 8 hours per day for 25 days in a month. Each worker can machine and assemble 12 mallets per uninterrupted 40 minutes time frame. In each 8 hours working day, 15 minutes are allowed for coffee-break, 8 minutes on an average for training and 9 minutes for supervisory instructions. Besides 10% of each day is booked as idle time to cover checking in and checking out changing operations,

getting materials and other miscellaneous matters. Workers are paid at a comprehensive rate of ` 6 per hour.

The department is geared to produce 20,000 mallets per month and the monthly expenses of the department are as under:

	(`)
Finishing and painting of the mallets……	20,000
Lubricating oil for cutting machines	600
Depreciation for cutting machine	1,400
Repairs and maintenance…	200
Power to run the machines	400
Plant Manager's salary…	9,400
Other overheads allocated to the department…	60,000

Required:

As the mallets are machined and assembled in lots of 250, prepare a total cost sheet for one lot and advise the management on the selling price to be fixed per mallet in order to ensure a minimum 33.33% margin on the selling price.

(10 marks)

b) (i) Souvenir Ltd. manufactures medals for winners of athletic events and other contests. Its manufacturing plant has the capacity to produce 10,000 medals each month. The company has current production and sales level of 7,500 medals per month. The current domestic market price of the medal is `150.

The cost data for the month of March, 2013 is as under:

	(`)
Variable Costs (that vary with units produced):	

Direct Materials	2,62,500
Direct Manufacturing Labour	3,00,000
Variable Costs (that vary with number of batches):	
Set-ups; Materials Handling; Quality Control (150 batches × ` 500 per batch)	75,000
Fixed Costs:	
Manufacturing Costs	2,75,000
Marketing Costs	1,75,000

Souvenir Ltd. has received a special one-time-only order for 2,500 medals at `100 per medal. Souvenir Ltd. makes medals for its existing customers in batch size of 50 medals (150 batches x 50 medals per batch = 7,500 medals).

The special order for 2,500 medals requires Souvenir Ltd. to manufacture the medals in 25 batches of 100 each.

Required:

Should Souvenir Ltd. accept the special order? Why? Explain briefly.

Suppose the plant capacity was 9,000 medals instead of 10,000 medals each month. The special order must be taken either in full or rejected totally. Should Souvenir Ltd. accept the special order? Why? Explain briefly.

(4 marks)

b) (ii) Jaya-Surya Ltd. (JSL) manufactures and sells two products 'Jaya' and 'Surya'. Both Jaya and Surya use a regular machine while Surya uses another high-precision machine as well. The following information is available for the next quarter.

	Jaya	Surya
Selling Price per unit (`)	1,500	2,000
Variable Manufacturing Cost per unit (`)	900	1,600
Variable Marketing Cost per unit (`)	250	150
Budgeted Allocation of Fixed Overhead Costs (`)	18,00,000	85,00,000

Regular Machine Hours per unit	2.0	1.0

Further information is available as follows:

- JSL faces a capacity constraint of 60,000 hours on the regular machine for the next quarter and there is no constraint on the high precision machine for the next quarter.
- Out of ` 85,00,000 budgeted allocation of fixed overhead costs to product Surya, ` 60,00,000 is payable for hiring the high precision machine. This cost is charged entirely to product Surya. The hiring agreement can be cancelled at any time without penalties.
- All other overhead costs are fixed and cannot be changed.
- A minimum quantity of 12,500 units per quarter of Jaya must be produced to fulfill a commitment to a customer.
- Any quantity of any product can be sold at the given prices.

Required

(i) Calculate the product mix of Jaya and Surya which would maximize the relevant operating profit of JSL in the next quarter.

(ii) JSL can double the quarterly capacity of regular machine at a cost of ` 28,00,000. Calculate the new product mix and the amount by which the relevant operating profit will increase.

(6 marks)