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Question Paper	
SCMPE	**Duration**: 90
Details: Test – 4	**Marks**: 50

Instructions:

- All the questions are compulsory
- Properly mention test number and page number on your answer sheet, Try to upload sheets in arranged manner.
- In case of multiple choice questions, mention option number only Working notes are compulsory wherever required in support of your solution
- Do not copy any solution from any material. Attempt as much as you know to fairly judge your performance.

Que 1:- Melody is a manufacturer of musical instruments. The company specializes in manufacture of Plano and Electronic Keyboard instruments. They are both labour-intensive products. Therefore, Melody absorbs its production overheads based on direct labour hours.

Piano

Melody's Pianos are of very high quality. Client patronage include professional Piano musicians. Some of these instruments are sold in its standard form. However, musicians particularly the concert players require their pianos to be customized to certain specifications. Customization primarily relates to the acoustic quality of the piano sound. Quality of sound is of paramount importance to musicians as it determines the power and warmth of tone. Each musician has a preference to achieve a special quality of sound. Therefore, no two customized Pianos can be the same. Due to its reputation, Melody receives numerous requests for customization from its customers. Ability to provide customization service sets Melody apart from its competitors.

Customization requires the services of professional craftsmen. They are hired as subcontractors for such work based on the need. These craftsmen perform their services within the factory premises. For this a special work space is maintained by Melody. Melody charges its customers extra for subcontracting cost plus 10%. This would cover the actual cost of subcontracting and any incidental overheads incurred. The Board of Melody accepts that this method of billing is very simplistic. It is unsure if the company is recovering the entire cost of providing this customization service

Electronic Keyboard Instruments

These are instruments manufactured by Melody are home Keyboards that are targeted at young music enthusiasts who are beginning to learn music. They come in standard sizes, comprised of standard components. No customizations are done to Keyboards.

As a performance management expert, the Board wants your advice. The extract below provides the most recent management accounts for the Piano and Keyboard Division.

Figures in Rs.

S. No.	Particulars	Piano	Keyboard	Total
1	Number of items manufactured	1,000	10,000	
2	Sale price per unit	2,50,000	15,000	
3	Revenue	25,00,00,000	15,00,00,000	40,00,00,000
4	Materials	7,50,00,000	3,75,00,000	11,25,00,000
5	Direct labour	8,00,00,000	6,75,00,000	14,75,00,000
6	Subcontracting Cost	3,75,00,000		3,75,00,000
7	Production Overheads	4,50,00,000	65,00,000	5,15,00,000
8	Total Cost of Production (4+5+6+7)	23,75,00,000	11,15,00,000	34,90,00,000
9	Gross Profit (3-8)	1,25,00,000	3,85,00,000	5,10,00,000

Production Overheads

Particulars	Amount
Inspection and Testing	3,45,00,000
Space Maintenance Cost for Subcontracting Work (rent, utilities, 2 support staff to maintain storage)	50,00,000
Other Production Overheads (rest of the utilities, rent, salary of support staff at storage)	1,20,00,000

Required

(i) DISCUSS the difference in treatment of production overheads under absorption costing and activity based costing.

(ii) LIST the steps to implement activity based costing within Melody.

(iii) ASSESS whether activity based costing would be suitable for the Piano and keyboard Divisions.

(iv) ADVISE Melody about the activity based management and ways to improve business performance.

(10 Marks)

Que 2:- APC Ltd. has two divisions- Division X and Division Y with full profit responsibility. Division X produces components 'Gex' which is supplied to both division Y and external customers. Division Y produces a product called 'Gext in' which incorporates component Gex'. For one unit of 'Gext in' two units of component 'Gex' and other materials are used.

Till date, Division Y has always bought component' Gex' from division X at 50 per unit since the lowest price at which the component 'Gex' could have been bought by Division Y was 52 per unit. Division X charges the same price for component 'Gex' to both division Y and external customers. However, it does not incur selling and distribution costs when transferring internally. Division Y has received a proposal from a new supplier who has offered to supply component 'Gex' for 47 per unit at least for the next three years. Manager of Division Y requests the manager of Division X to supply component 'Gex' at or below 47 per unit. Manager of Division X is not ready to reduce the transfer price since the divisional performance evaluation is done based on profit margin ratio of the division.

The following additional information is made available to you:

Particulars	Component Product 'Gex'	Product 'Gextin'

Selling Price per unit	50	180
Less: Variable Costs		
Direct Materials:		
Component 'Gex'	-	100
Other materials	12	22
Direct labour	16	13
Manufacturing Overhead	2	5
Selling and Distribution Costs	4	2
Contribution per unit	16	38
Annual fixed costs	40,00,000	20,00,000
Annual external demand **(units)**	3,00,000	1,20,000
Capacity of plant **(units)**	5,00,000	1,50,000

Required:

(i) Calculate the present profit of each division and the company as a whole.

(ii) Analyse the impact on the total annual profits of each division and the company as a whole if Division Y accepts the offer of the new supplier.

(iii) in the changed scenario, discuss why the top management should intervene and advise a suitable transfer price for component 'Gex' for resolving transfer pricing conflict which promotes goal congruence through efficient performance of the concerned division.

(10 Marks)

Que 3:- Usha products Co. operates a pulp Division that manufactures wood pulp for use in the production of various paper goods. The following information is available

Particulars	**Amount in Rs.**
Selling price	210
Less: Variable Expenses	126
Contribution	84
Less: Fixed Expenses	54
(Based on a capacity of 1,00,000 kgs per year)	
Net Income	30

Usha products have just acquired a small company that manufactures paper cartons. This company will be treated as a division of Usha with full profit responsibility. The newly formed carton Division is currently purchasing 10,000 kgs of pulp per year from suppliers at a cost of Rs.210 per kg less a 10% quantity discount. Usha's president is anxious that the Carton Division begins purchasing its pulp from the Division if an acceptable transfer price can be worked out.

Required:

Situation I

If the pulp Division is in a position to sell all of its pulp to outside customers at the normal price of Rs.210 per kg, will the managers of the Carton and pulp Division agree to transfer 10,000 kgs of pulp next year at a determined price ? Explain with reasons.

Situation II

Assuming that the pulp Division is currently selling only 60,000 kgs of pulp each year outside customers at the stated price of Rs.210 per kg Will the Managers agree to a mutually acceptable transfer price for 10,000 kgs of pulp in next year? Explain with reason.

Situation III

If the outside suppliers of the Cartons Division reduce its price to Rs.177 per kg, will the pulp Division meet this price? Explain, if the pulp Division does not meet this price of Rs. 177 per kg, what will be the effect on profits of the company as a whole?

(10 Marks)

Q 4: Bearings Ltd. makes three products, A,B and C in Division A, B and C respectively. The following information is given:

	A	**B**	**C**	
Direct Materials (excluding material A for Divisions B and C)	4	15	20	Rs/u
Direct labour	2	3	4	Rs./u
variable overhead	1	1	1	Rs./u

Selling price to outside customers	15	40	50	Rs./u
Existing Capacity	5,000	2,500	2,500	(No. of units)
Maximum External demand	3,750	5,000	4,000	(No. of units)
Additional fixed costs that would be incurred to install additional capacity	24,000	6,000	18,750	Rs.
Maximum Additional units that can be produced by additional capacity	5,000	1,250	2,250	(No. of units)

B and C need material A as their input. Material A is available outside at Rs. 15 per unit. Division A supplies the material free from defects. Each unit of B and C requires one unit of A as the input material.

If B purchase from outside, it has to pay Rs. 15 per unit. If B purchases from A, it has to incur in addition to the transfer price, Rs. 2 per unit as variable cost to modify it.

B has sufficient idle capacity to inspect its inputs without additional costs.

If C gets material from A, it can use it directly, but if it gets material from outside, which is at Rs. 15, it has to do one of the following:

(i) Inspect it at its own shop floor at Rs. 3 per unit.

Or

(ii) Get the supplier to supply inspected products and pay the supplier Rs. 2 p.u. as inspection charges.

Or

(iii) A has enough idle labour, which it can lend to C to inspect at Rs. 1 p.u. even though C purchases from outside.

A has to fix a uniform transfer price for both B and C. The transfer price will not be known to outsiders and is at the discretion of the Divisional Managers.

What is the best strategy for each division and the company as a whole?

(10 Marks)

Que 5:- Compute Ltd. manufactures two parts 'P' and 'Q' for Computer Industry.

P: annual production and sales of 1,00,000 units at a selling price of Rs. 100.05 per unit.

Q: annual production and sales of 50,000 units at a selling price of Rs. 150 per unit.

Direct and Indirect costs incurred on these two parts are as follows:

			(Rs. in Thousands)
	P	**Q**	**Total**
Direct material cost (variable)	4,200	3,000	7,200
Labour cost (variable)	1,500	1,000	2,500
Direct Machining cost (See Note)*	700	550	1,250
Indirect Costs:			
Machine set up cost			462

Testing cost			2,375
Engineering cost			2,250
			16,037

Note: Direct machining costs represent the cost of machine capacity dedicated to the production of each product. These costs are fixed and are not expected to vary over the long-run horizon.

Additional information is as follows:

	P	**Q**
Production batch Size	1,000 units	500 units
Set up time per batch	30 hours	36 hours
Testing time per unit	5 hours	9 hours
Engineering cost incurred on each product	8.40 lacs	14.10 lacs

A foreign competitor has introduced product very similar to ‘P’. To maintain the company’s share and profit, Compute Ltd. has to reduce the price to Rs. 86.25. The company calls for a meeting and comes up with a proposal to change design of product ‘P’. The expected effect of new design is as follows:

- Direct Material cost is expected to decrease by Rs. 5 per unit.
- Labour cost is expected to decrease by Rs. 2 per unit.
- Machine time is expected to decrease by 15 minutes; previously it took 3 hours to produce 1 unit of ‘P’. The machine will be dedicated to the production of new design.

- Set up time will be 28 hours for each set up.
- Time required for testing each unit will be reduced by 1 hour.
- Engineering cost and batch size will be unchanged.

Required:

(a) Company management identifies that cost driver for Machine set-up costs is 'setup hours used in batch setting' and for testing costs is 'testing time'. Engineering costs are assigned to products by special study. Calculate the full cost per unit for 'P' and 'Q' using Activity-based costing.

(b) What is the Mark- up on full cost per unit of P?

(c) What is the Target cost per unit for new design to maintain the same mark up percentage on full cost per unit as it had earlier? Assume cost per unit of cost drivers for the new design remains unchanged.

(d) Will the new design achieve the cost reduction target?

(e) List four possible management actions that the Compute Ltd. should take regarding new design

(10 Marks)