

QUESTION BANK**SECTION A****SPECIALIST COST AND
MANAGEMENT ACCOUNTING
TECHNIQUES****A****1. Traditional method and activity based costing - Egale Ltd**

Egale Ltd is engaged in the production of different types of cooling systems. It manufactures and sells cooling systems using almost the same production methods and equipment for each system. It also specialises in processing and replacing old parts of systems. Egale Ltd traditionally determines its prices by adding a 10% mark-up to the budgeted full cost of the system. The fixed overheads are absorbed on the basis of machine hours using a predetermined rate.

Egale Ltd Operating and Financial Data for 20X8

	Mist cooling	Water mist	Total
Average hours per unit	3 hours	3.6 hours	
Number of systems produced (units)	996	1,270	2,266
Variable cost per system	\$1,450	\$1,254	
Total Costs			\$14,376,780

Required:

- (a) Calculate the cost per unit and the prices that Egale would have charged for each system using the traditional system of allocation. (4 marks)

David is a new management accountant appointed this year. He reviewed the cost accounting system and found that irrelevant overheads were allocated to the system. The inappropriate allocation of overheads had a direct impact on the cost and prices of the systems. Therefore, he has recommended activity based costing (ABC) for allocation of the overhead costs to the systems.

However, directors are not aware of the activity based costing (ABC) system. Therefore, they are worried about the impact of switching to an activity based costing (ABC) system to assign overheads to the system. David has gathered the following additional information after analysing the cost accounting records maintained by the organisation:

Activity	Cost Driver	Mist cooling	Water mist	Fixed overheads \$
Set ups	Number of set ups	3,000	2,000	8,780,000
Materials handling	Number of movements of materials	6,200	6,200	1,500,400
Inspection costs	Number of inspections	7,860	23,580	1,059,600
Total overheads				11,340,000

Required:

- (b) Explain the concept of activity based costing and also discuss the benefits that may arise from introducing the ABC for the allocation of overhead costs. (6 marks)
- (c) Calculate the cost per unit and the prices that Egale would have charged for each system using the ABC to assign overhead costs. (7 marks)
- (d) Compare the results of your calculated prices in (a) and (c) and suggest with reasons what pricing decisions you would recommend to the organisation. (3 marks)
- (20 marks)**

2. Traditional method and activity based costing – Northern High – Tech Inc

Northern High Tech Inc has successfully produced and sold two quality printers. Assume the company has the following financial and cost data for the two products:

	Deluxe	Regular
Production volume	5,000	15,000
Direct material per unit	\$120	\$48
Labour costs per unit	\$80	\$32
Direct labour hours	25,000	75,000

The company's management accountant has identified the following activities, budgeted cost pools and activity drivers:

Activity	Budgeted Cost Pool \$	Activity Driver
Engineering	125,000	Engineering hours
Setups	300,000	Number of setups
Machine running	1,500,000	Machine hours
Packaging	75,000	Number of packaging orders
Total	2,000,000	

These are the actual units or transactions for both products:

Activity Consumption			
Activity drivers	Deluxe	Regular	Total
Engineering hours	5,000	7,500	12,500
Number of setups	200	100	300
Machine hours	50,000	100,000	150,000
Number of packaging orders	5,000	10,000	15,000

Required:

- Calculate the cost per unit for each product using labour hours to absorb the overhead costs. (4 marks)
 - Calculate the unit cost of each product under an activity based costing (ABC) system. (12 marks)
 - Compare and comment on the costs computed under the above methods. (4 marks)
- (20 marks)**

3. Cost drivers – Pearl

Pearl owns several home furnishing stores. In each store, consultations, if needed, are undertaken by specialists. They also visit potential customers in their homes, using specialist software to help customers realise their design objectives. Customers visit the store to make their selections from the wide range of goods offered. Then administration staff process the purchase orders and sales staff collect the payment. Customers collect their self-assembly goods from the warehouse, using the purchase order as authority for collection.

Each store operates an absorption costing system. Costs other than the cost of goods sold are apportioned on the basis of the sales floor area.

Results for one of Pearl's stores for the last three months are as follows:

	Kitchens \$	Bathrooms \$	Dining Rooms \$	Total \$
Sales	210,000	112,500	440,000	762,500
Cost of goods sold	63,000	36,000	176,000	275,000
Other costs	130,250	81,406	113,968	325,624
Profit	16,750	(4,906)	150,032	161,876

Pearl's management accountant is concerned that the Bathrooms department has been showing a loss for some time. He is considering a proposal to close it down in order to concentrate on the more profitable departments like Kitchens and Dining rooms. He has found that other costs for this store for the last three months are made up of:

	\$	Employees
Sales staff wages	64,800	12
Consultation staff wages	24,960	4
Warehouse staff wages	30,240	6
Administration staff	30,624	4
General overheads (light, heat, rates, etc.)	175,000	
Total	325,624	

He has collected the following additional information for the last three months:

Department	Kitchens	Bathrooms	Dining Rooms
Number of items sold	1,000	1,500	4,000
Purchase orders	1,000	900	2,500
Floor area (Sq. meters)	16,000	10,000	14,000
Number of consultations	798	200	250

The management accountant believes that he can use this information, to review the store's performance in the last three months, from an activity-based costing (ABC) perspective.

Required:

- (a) Discuss the management accountant's belief that the information provided can be used in an activity-based costing analysis. (4 marks)
- (b) Illustrate using supporting calculations, how an ABC profit statement might be produced from the information provided. Clearly explain the reasons behind your choice of cost drivers. (9 marks)
- (c) Evaluate and discuss the proposal to close the Bathrooms department. (7 marks)

(20 marks)

(Adapted from Paper 2.4 June 2004)

4. Activity based costing - Matrix Ltd

Matrix Ltd manufactures and installs complex satellite navigation systems in cars on its national depots. It also sells these systems to a few car dealers. A navigation system acquires position data to locate the user on a road in the unit's map database. Matrix Ltd manufactures three models based on the different satellite navigation maps used in the system. It assembles Model X (CARIN Database Format), Model Y (S-Dal) and Model Z (Physical Storage Format). The navigation system is manufactured using machines; however, labour plays a key role in the installation process.

Neo, the management accountant of the company, is concerned that not all navigation systems produced are as profitable as they should be. Hence, he has suggested adopting activity based costing (ABC) for the allocation of overheads. Earlier, Matrix Ltd had allocated overhead costs using a traditional method i.e. direct labour hours. Below are some of the figures extracted from the financial statements of Matrix Ltd:

	Annual Output (units)	Annual Direct Labour Hours	Selling Price (\$ per unit)	Raw material cost (\$ per unit)
Model X	800	100,000	5,850	3,000
Model Y	1,500	220,000	8,000	1,250
Model Z	2,500	180,000	5,000	1,000

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The three cost drivers that generate overheads are:

Deliveries to car retailers	The number of deliveries of the system made to different car retailers.
Machine set up costs	The number of times the machine is reset to accommodate the production run of a different type of navigation system.
Quality testing costs	The number of quality tests performed.

Cost per driver for each type of navigation system:

	Number of deliveries to car retailers	Number of machine set-ups	Number of quality test controls
Model X	150	45	40
Model Y	100	50	65
Model Z	200	35	90

The annual overhead costs relating to these activities are as follows:

	\$
Deliveries to retailers	2,250,000
Set-up costs	2,650,000
Quality test controls	1,000,000
Total overhead costs	5,900,000

Note: direct labour is charged at \$8 per hour. The company does not hold any inventory.

The managers of the finance and accounting department of the company had a meeting to decide whether to adopt activity based costing in the company or not. Below are a few aspects of the discussion:

- information on incremental costs is needed to identify the amount of discount that can be allowed to clients placing huge orders. However, incremental costs cannot be calculated under activity based costing.
- Activity based costing can only help them to derive information about the use of labour hours in assessing the viability of each product. But it may not be helpful to gain any further information.
- if the labour force repeats a certain activity, they gain knowledge. Hence, the labour time is reduced and thereby the costs. However, this is not considered in activity based costing. Also, some costs remain fixed irrespective of the labour hours worked and any other cost driver.
- a few people did not see the use of getting this costing system into the organisation. They were of the opinion that no matter what type of costing was adopted, the overall profit remained the same, whereas some people were in the favour of introducing activity based costing into the organisation.

Required:

- (a) Calculate the total profit on each of Matrix Ltd's three types of products using both the following methods to attribute overheads:
- Traditional method
 - Activity based costing

(12 marks)

- (b) Comment on the result of the meeting and state whether you agree with all the points that have come up.

(8 marks)

(20 marks)

5. Product life cycle – Target Inc

Target Inc sells medical instruments to many hospitals. Its instruments are also sold in the open market. These medical instruments are designed, developed and manufactured solely by Target. They have a life cycle ranging from 3 to 10 years. Target has a centralised research lab where all the design and development work is carried out, before forwarding the equipment to the sales and distribution department so that they can market and distribute the product.

Target measures the performance of the instruments according to profits made each year during the product's life cycle. Recently, Target developed a blood pressure monitor. However, it only has a life cycle of 5 years.

Data relating to the blood pressure monitor regarding life cycle costs and revenues is given below:

Expected net profit percentage: 20% of turnover considered reasonable.

Rate of contribution (sales price- variable costs): 60% considered reasonable.

Selling price: \$45 per monitor