



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

P.O. Box 62157
00200 Nairobi - KENYA
Telephone: 891601-6
Fax: 254-20-891084
E-mail: academics@cuea.edu

MAIN EXAMINATION

SEPTEMBER – DECEMBER 2019 TRIMESTER

SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING AND FINANCE

REGULAR/ODEL PROGRAMME

CAC 425: STRATEGIC COST ACCOUNTING

Date: DECEMBER 2019

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

Q1. a) In a contemporary industrial environment, the application of traditional cost accounting undermines the firm's competitiveness.

**Required:
Elaborate:**

- i. The production conditions prevailing at the time when traditional cost accounting was initially developed.
- ii. The conditions that prevail in the contemporary industrial environment that make traditional cost accounting obsolete.

(10 Marks)

b) Kahawa Bora Limited, a company that produces gourmet coffee which is marketed worldwide, is developing a benchmarking system for all its operating, investment, financing, and marketing functions. The benchmarking system will be integrated into the company's balanced scorecard performance management system. The company's strategic planning section has been charged with developing and maintaining suitable benchmarks for of operations. Ms. Imani Juma, the head of the strategic planning section has requested you to develop a benchmarking procedure which will guide the strategic planning section in developing and maintaining the benchmarking component of the company's balanced scorecard performance management system.

Required:

Prepare a report to Ms. Imani Juma proposing the core benchmarking processes that should be incorporated into the company's new benchmarking procedure.

(10 Marks)

- c) Consider the following data pertaining to March 2011 for a firm that has adopted JIT.

Production	8,000 units
Sales (\$20 per unit)	7,900 units
Standard production costs:	
Direct material	\$4
Conversion costs	\$8

Assume that there were no cost or usage variances for March, and the quantity of material used equaled the quantity purchased. All material is purchased on account, and all units started were completed.

Required:

Assuming that the company initially charges all costs to Cost of Goods Sold and then uses backflush costing to assign costs to inventories at the end of the period, record the journal entries to recognize the following:

- i. The incurrence of conversion costs
- ii. Completion of production
- iii. Backflushing of costs to inventories

(10 Marks)

- Q2. TR Co is a pharmaceutical company which researches, develops and manufactures a wide range of drugs. One of these drugs, 'Parapain', is a pain relief drug used for the treatment of headaches and until last month TR Co had a patent on Parapain which prevented other companies from manufacturing it. The patent has now expired and several competitors have already entered the market with similar versions of Parapain, which are made using the same active ingredients.

TR Co is reviewing its pricing policy in light of the changing market. It has carried out some market research in an attempt to establish an optimum price for Parapain. The research has established that for every \$2 decrease in price,

demand would be expected to increase by 5,000 batches, with maximum demand for Parapain being one million batches.

Each batch of Parapain is currently made using the following materials:

Material Z: 500 grams at \$0.10 per gram

Material Y: 300 grams at \$0.50 per gram

Each batch of Parapain requires 20 minutes of machine time to make and the variable running costs for machine time are \$6 per hour. The fixed production overhead cost is expected to be \$2 per batch for the period, based on a budgeted production level of 250,000 batches.

The skilled workers who have been working on Parapain until now are being moved onto the production of TR Co.'s new and unique anti-malaria drug which cost millions of dollars to develop. TR Co has obtained a patent for this revolutionary drug and it is expected to save millions of lives. No other similar drug exists and, whilst demand levels are unknown, the launch of the drug is eagerly anticipated all over the world.

Agency staff, who are completely new to the production of Parapain and cost \$18 per hour, will be brought in to produce Parapain for the foreseeable future. Experience has shown there will be a significant learning curve involved in making Parapain as it is extremely difficult to handle. The first batch of Parapain made using one of the agency workers took 5 hours to make. However, it is believed that an 80% learning curve exists, in relation to the production of the drug, and this will continue until the first 1,000 batches have been completed. TR Co.'s management has said that any pricing decisions about Parapain should be based on the time it takes to make the 1,000th batch of the drug.

Note: The learning co-efficient, $b = -0.321928$

Required:

Calculate the optimum (profit-maximizing) selling price for Parapain and the resulting annual profit which TR Co will make from charging this price.

Note:

Learning curve

$$Y = ax^b$$

Where

Y = cumulative average time per unit to produce x units

a = the time taken for the first unit of output

x = the cumulative number of units produced

b = the index of learning ($\log LR/\log 2$)

LR = the learning rate as a decimal

Demand curve

$$P = a - bQ$$

b = change in price/change in quantity

a = price when Q = 0

$$MR = a - 2bQ$$

If $P = a - bQ$, then $MR = a - 2bQ$

(20 marks)

Q3. Jola Publishing Co publishes two forms of book.

The company publishes a children's book (CB), which is sold in large quantities to government-controlled schools. The book is produced in only four large production runs but goes through frequent government inspections and quality assurance checks.

The paper used is strong, designed to resist the damage that can be caused by the young children it is produced for. The book has only a few words and relies on pictures to convey meaning.

The second book is a comprehensive technical journal (TJ). It is produced in monthly production runs, 12 times a year. The paper used is of relatively poor quality and is not subject to any governmental controls and consequently, only a small number of inspections are carried out. The TJ uses far more machine hours than the CB in its production.

The directors are concerned about the performance of the two books and are wondering what the impact would be of a switch to activity based costing (ABC) approach to accounting for overheads. They currently use absorption costing, based on machine hours for all overhead calculations. They have accurately produced an analysis for the accounting year just completed as follows:

CB

TJ

\$per unit \$per unit

\$per unit \$per unit

Direct production costs

Paper 0.75 0.08

Printing ink 1.45 4.47

Machine costs 1.15 1.95

3.35 6.50

Overheads 2.30 3.95

Total cost 5.65 10.45

Selling price 9.05 13.85

Margin 3.40 3.40

The main overheads involved are:

Overhead % of total Activity driver

overhead

Property costs	75·0%	Machine hours	
Quality control	23·0%	Number of inspections	
Production set up costs	2·0%	Number of setups	

If the overheads above were re-allocated under ABC principles then the results would be that the overhead allocation to CB would be \$0·05 higher and the overhead allocated to TJ would be \$0·30 lower than previously.

The directors are keen to introduce ABC for the coming year and have provided the following cost and selling price data:

- i. The paper used costs \$2 per kg for a CB but the TJ paper costs only \$1 per kg. The CB uses 400g of paper for each book, four times as much as the TJ uses.
- ii. Printing ink costs \$30 per liter. The CB uses one-third of the printing ink of the larger TJ. The TJ uses 150ml of printing ink per book.
- iii. The CB needs six minutes of machine time to produce each book, whereas the TJ needs 10 minutes per book. The machines cost \$12 per hour to run.
- iv. The sales prices are to be \$9·30 for the CB and \$14·00 for the TJ

As mentioned above there are three main overheads, the data for these are:

Overhead	The annual cost for the coming year
	\$
Property costs	2,160,000
Quality control	668,000
Production set up costs	52,000
Total	2,880,000

The CB will be inspected on 180 occasions next year, whereas the TJ will be inspected just 20 times.

Jola Publishing will produce its annual output of 1,000,000 CBs in four production runs and approximately 10,000 TJs per month in each of 12 production runs.

Required:

- i. Explain why the overhead allocations have changed in the way indicated above. **(5 marks)**
- ii. Calculate the cost per unit and the margin for the CB and the TJ using machine hours to absorb the overheads. **(5 marks)**
- iii. Calculate the cost per unit and the margin for the CB and the TJ using activity-based costing principles to absorb the overheads. **(10 marks)**

Q4. VVT is based in a small southern European country and has been trading for 12 years. It imports electronic consumer products, such as televisions, home entertainment systems, computers and printers from one supplier, MMM, which is based in an Asian country. VVT re-brands and re-packages these products as VVT 'own brand' and then sells them to customers within its own country.

Most customers pick up their products directly from VVT's stores and set them up themselves. However, for more complex products such as large home entertainment systems, VVT offers a home set-up service, for which VVT makes a small charge. VVT's technicians will also visit customers' homes to solve technical problems with equipment if it is still within the warranty period. VVT offers an online helpline and also a warehouse-based repair facility for its customers if the products VVT sold to them are out of the warranty period. Feedback from customers suggests that this customer support is highly valued as VVT's larger competitors don't offer such extensive product support.

VVT has a website which provides a comprehensive display of its products, product specifications and prices. However, customers cannot order or pay for products online. Orders are placed through a dedicated phone number clearly identified on the website. Trained technicians are on hand to help customers decide on the product which best meets their needs. Customer feedback indicates that this support is highly valued. As well as using the website to advertise its products, VVT advertises in the national newspapers and undertakes direct mailing by post. VVT also maintains a customer and product database, which holds customer details and records their buying history. VVT uses this database solely to help with its direct mailing activities. However, the marketing managers of VVT are aware that this database could be more effective if it employed a more sophisticated analysis.

VVT places its orders for products through MMM's website and pays by bank transfer. VVT is not committed to a long-term contract with MMM and therefore MMM does not offer credit terms to VVT. When the payment is authorized,

MMM sends an automatic e-mail to VVT to confirm the order, to provide an order reference number and a proposed shipping date. A further email is sent to VVT once the order has been despatched. A logistics company based in Europe, but not in VVT's home country, delivers the order from the shipping port to VVT. MMM organizes the whole supply process, from initial product despatch right through to the delivery of the order to VVT's warehouse.

This supply process has, in the past, caused a number of problems for VVT. First, missing or delayed shipments can only be tracked by going through MMM, which has often been slow to respond to queries. Second, MMM cannot always provide reliable shipping dates and does not track the progress of shipments carefully. Third, the European logistics company has not always been reliable which has resulted in delays to deliveries which are quite unpredictable. This can cause congestion in VVT's delivery bay or lead to VVT being out of stock of some products. As a result, VVT tends to order more products than is necessary to ensure that it is not left short, but this adds to its warehousing and inventory holding costs.

On arrival of the order at VVT's factory, the products are quality inspected. This is a rigorous process and only those products which are 100% defect-free are re-branded and re-packaged with VVT's recognised logo. Products which fail VVT's quality inspection are returned to MMM for a refund.

Required:

- i. Evaluate the primary activities of VVT. Your answer should clearly explain the significance of each of these primary activities in adding value to VVT's customers. Note: You should use Porter's Value Chain to structure your answer, but you are NOT required to draw the value chain as part of your answer. **(11 marks)**
- ii. Discuss the potential benefits to VVT of carrying out more sophisticated analysis of its customer database through the use of data warehousing and data mining.

(3 marks)

- iii. Recommend, with reasons, THREE ways in which VVT could improve its supply chain activities to remove nonvalue-adding activities. **(6 marks)**

END