

# THE PUBLIC ACCOUNTANTS EXAMINATIONS BOARD

*A Committee of the Council of ICPAU*

## CPA(U) EXAMINATIONS

### LEVEL TWO

#### MANAGEMENT DECISION AND CONTROL - PAPER 10

**FRIDAY, 18 JUNE 2010**

#### **INSTRUCTIONS TO CANDIDATES:**

1. Time allowed: **3 hours 15 minutes.**  
The first 15 minutes of this examination have been designated for reading time. You may not start to write your answer during this time.
2. Section **A** has **one** compulsory question carrying 30 marks.
3. Section **B** has **four** questions and only **three** questions are to be attempted. Each question carries 20 marks.
4. Section **C** has **two** questions and only **one** question is to be attempted. Each question carries 10 marks.
5. Please read further instructions on the answer book.

## SECTION A

### Question 1

Mpanga-Azala-Muzibu Limited deals in the processing of sugar which is processed through its two main divisions, Z and Y. Division Z is the only supplier of the intermediate product that is converted by Division Y into the final product. Most of Division Z's costs are fixed. For any output up to 1,000 bags per day, its total costs are Shs 20 million. The total costs increase by Shs 4 million per day for every additional 1,000 bags produced. Division Z believes that its own costs can be optimized if it sets its price at Shs 40,000 per bag and the head of production has written a memo to all heads of department that this will be the price for products from his department.

Division Y incurs additional costs in converting the intermediate product supplied by Division Z into the finished product. These costs are Shs 50 million for any output up to 1000 bags and Shs 10 million per 1,000 bags of output in excess of the 1,000 bags.

On the revenue side, Division Y can increase its revenue by spending more on sales promotion and by reducing selling price. Its sales are forecast as follows:

Sales ('000' bags)	Net price per unit (Shs)
1,000	70,000
2,000	50,000
3,000	41,333
4,000	30,500
5,000	25,200
6,000	23,333

### Required:

- Prepare a schedule comparing Y's costs (including purchases from Z), revenues and net income at various levels of output.  
(8 marks)
- What is Z's highest level of net income? At that level, what is Y's income? At that level, what is the overall company aggregate net income?  
(6 marks)
- Supposing the company abandons its divisionalised structure and combines the two divisions Y and Z into a single profit centre with responsibility for the complete production and marketing of the product.

**Required:**

Prepare a schedule showing the company's revenues, costs and net income at various levels of output. Show the level of output that will be most profitable for the company.

**(8 marks)**

- (d) In evaluating the results in (b) above, why did the Division Y obtain less income than what is obtained by the company in (c) above? Demonstrate how you would adjust the transfer pricing policy to ensure that the overall company's net income is maximized where separate profit centers are maintained.

**(4 marks)**

- (e) It has been argued that full cost-based pricing is an inappropriate basis for setting transfer prices. Outline the objections which can be raised against this basis of pricing.

**(4 marks)**

**(Total 30 marks)**

**SECTION B**

**Question 2**

- (a) Explain the relationship between material price variance and material usage variance.

**(4 marks)**

- (b) Explain the benefits and difficulties of using a zero-based approach of budgeting.

**(6 marks)**

- (c) Akol Ltd manufactures a single product, Toto, and the following information relates to the first quarter of 2010.

Standard cost per batch:

Materials:	Kg	Price per kg (Shs)
A	8	500
B	<u>6</u>	300
	14	
Less standard loss	<u>(2)</u>	
Standard yield	<u>12</u>	

Labour:	Hours	Rate per hour (Shs)
Department R	5	800
Department S	3	500

Budgeted sales for the period were 8,000 kg at Shs 600 per kg. There were no budgeted opening or closing inventories of the product Toto.

The actual results for 200 batches:

Materials:	Kg	Price per kg (Shs)
A	1,800	600
B	<u>1,000</u>	250
	2,800	
Less actual loss	<u>(800)</u>	
Actual yield	<u>2,000</u>	

Labour:	Hours	Rate per hour (Shs)
Department R	400	860
Department S	250	450

All the output of Toto was sold during the period for Shs 700 per kg.

**Required:**

Calculate the following material variances:

- (i) Price.
- (ii) Usage.
- (iii) Mix.
- (iv) Yield.

**(10 marks)**  
**(Total 20 marks)**

**Question 3**

- (a) Explain how value chain analysis can assist an organisation to gain competitive advantage.

**(6 marks)**

- (b) Mufungano Products Limited produces joint products A, B, and C from input material, Alphetex. From 150 kg of Alphetex, which cost Shs 33,000 per kg, 50 kg of A, 45 kg of B and 45 kg of C can be produced and sold. 10 kg are scrapped in the process, and are sold at the scrap price of Shs 10,000 per kg.

Costs and revenues for products A, B and C are as follows:

	<b>A</b>		<b>B</b>		<b>C</b>	
	Shs '000'	Shs '000'	Shs '000'	Shs '000'	Shs '000'	Shs '000'
Revenue		5,000		5,500		3,500
Less: Direct joint costs						
Material	1,750		1,925		1,225	
Labour	<u>1,250</u>		<u>1,125</u>		<u>1,125</u>	
		(3,000)		(3,050)		(2,350)
Less: Other direct costs						
Finishing	500		500		100	
Packaging	500		450		450	
Labour	<u>500</u>		<u>450</u>		<u>450</u>	
		<u>(1,500)</u>		<u>(1,400)</u>		<u>(1,000)</u>
Profit		<u>500</u>		<u>1,050</u>		<u>150</u>

Joint material costs are allocated on the basis of revenue, while joint labour costs are allocated on the basis of weight of output.

The company has recently received an order of an additional 10,000 kg of product A from one of its biggest customers at Shs 95,000 per kg. The sales manager has informed you that a decision on whether to fulfill this additional order has to be made basing on the following assumptions:

- At present because of the demand for products B and C, 12,000 kg of product A have to be sold as scrap because they cannot be sold on the open market.
- The present demand for product A is such that all output of products B and C cannot be sold on the open market and thus have to be scrapped.

**Required:**

Under each of the two assumptions, advise whether the order should be accepted and if so, show the amount of additional profit that will be made.

**(14 marks)**

**(Total 20 marks)**

#### Question 4

- (a) Explain ways in which management can reduce the riskness of a project. **(5 marks)**
- (b) Tweedy Engineering Company Limited recently sent their chief engineer to South Korea and China to review engineering developments in those markets. He has now returned with details of a new type of concrete mixer. The company believes that the introduction of this new mixer will revolutionalise the building sector in Uganda. The chief engineer, in his brief to the company, explained that some experts he interviewed, in both countries that he visited, believed that this machine would reach the Ugandan market in a year's time, whereas others believed that it would be launched in four years' time and the rest believed that the machine would reach Uganda in five years' time.

A number of alternatives present themselves; the company could abandon acquiring the mixer and this is forecast to cost the company Shs 80 million. Alternatively the company could wait for a whole year to see if the mixer is introduced in the Ugandan market or better still develop the mixer itself.

Internal research has revealed that the company has a 60% chance of developing the mixer itself, 30% of delaying it for one year in which case it would incur additional costs of Shs 30 million. The research manager has also informed you that there is a 10% chance of the board of directors recommending abandoning the project, this course of action has been estimated to cost the company a net present value of Shs 80 million.

On the internal development of the mixer, there is a 50% chance of the company being successful in launching it. On successful launch, the sales manager has told you that there is a 10% chance of the sales being Shs 80m, 40% chance of the sales being Shs 50m and 50% chance of the sales being Shs 32 million.

On the launch being unsuccessful after internal development, the company is expected to incur a loss of Shs 10 million as a result of lost sales opportunities.

After the 1<sup>st</sup> year's delay, there is a 70% chance of the mixer being successfully launched in the market. The research manager has further informed you that due to the delay, sales are expected to be as follows: Shs 80 million, Shs 50 million and Shs 32 million with probabilities of 0.2, 0.5, and 0.3 respectively.

However, with the expected failure in the first year, the company will incur additional development costs of Shs 12 million and sales are expected to

be Shs 40 million, Shs 25 million and Shs 16 million with probabilities of 0.6, 0.3 and 0.1 respectively.

**Required:**

Using an appropriate method, advise the company on the course of action to take.

**(15 marks)**

**(Total 20 marks)**

**Question 5**

- (a) Define the term 'activity-based costing' (ABC) and briefly explain the major steps involved under ABC.

**(8 marks)**

- (b) Atraco Uganda Limited manufactures three products, P, Q and R.

Data for the period just ended are as follows:

	<b>P</b>	<b>Q</b>	<b>R</b>
Units produced and sold	12,000	16,000	8,000
	<b>Shs</b>	<b>Shs</b>	<b>Shs</b>
Sales price per unit	50	70	60
Direct material cost per unit	16	24	20
Direct labour cost per unit	8	12	8

<b>Production overhead costs</b>	<b>Total (Shs)</b>	<b>Cost driver</b>
Machine costs	102,000	Machine hours
Production scheduling	84,000	Number of production runs
Set-up costs	54,000	Number of production runs
Quality control	49,200	Number of production runs
Receiving materials	64,800	Number of component receipts
Packing materials	36,000	Number of customer orders

Information on the cost drivers is given as follows:

	<b>P</b>	<b>Q</b>	<b>R</b>
Direct labour hours per unit	1.0	1.5	1.0
Machine hours per unit	0.5	1.0	1.5
Number of components per unit	3.0	5.0	8.0
Number of components receipts	18.0	18.0	64.0
Number of customer orders	6.0	20.0	10.0
Number of production runs	6.0	16.0	8.0

**Required:**

Using ABC, compute the cost and gross profit per unit for each product during the period.

**(12 marks)**

**(Total 20 marks)**

**SECTION C**

**Question 6**

Pakajo Global Telecommunications Ltd has recruited a chief finance officer (CFO) who has been a top analyst in one of the leading financial services companies in Uganda. In his first address to a retreat of senior managers of the company, he stated the following: "As my legacy to this company, I intend to put in place a budgetary control system that encourages goal congruence, does not contain budgetary slack, attempts to control operations by feedback and feed forward and tries to take advantage of the aspiration levels of all participants in the budgetary process".

All the senior managers are excited by the new CFO. However, the managing director, having an engineering background, seems not to be emotionally moved by the new CFO.

**Required:**

Write a memo to the managing director explaining the following terms as used by the CFO:

- (a) Goal congruence.
- (b) Budgetary slack.
- (c) Feedback and feed forward.

**(10 marks)**

**Question 7**

In the financial crisis of 2009, a chief economist in a leading financial publication stated that "one of the causes of the financial meltdown we have just witnessed is that corporations had tended to get away from the basic balanced scorecard model and were pursuing other aims". The chief finance officer (CFO) of your organization, where you work as the management accountant, seems perturbed by this statement and is yet to fully grasp the full implication of it on your organization.

**Required:**

Write a memo to the CFO explaining the basic perspectives of the balanced scorecard stating at most **two** advantages of the balanced scorecard to the organization.

**(10 marks)**