

# THE PUBLIC ACCOUNTANTS EXAMINATIONS BOARD

*A Committee of the Council of ICPAU*

## CPA(U) EXAMINATIONS

### LEVEL TWO

#### MANAGEMENT DECISION AND CONTROL - PAPER 10

**THURSDAY, 21 JUNE 2012**

#### 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. Write your answer to each question in a separate answer booklet.
6. Please, read further instructions on the answer booklet, before attempting any question.

## SECTION A

*This section has one compulsory question to be attempted*

### Question 1

Mensee University offers a range of undergraduate degree courses. The university's organization structure consists of faculties each with a number of teaching departments. In addition, there is a university administration / management function and a central services function.

The following information is available for the year ended 30 June 2011:

- Occupancy costs total Shs 15 million. Such costs are apportioned on the basis of area used which is:

	Area (m <sup>2</sup> )
Faculties	7,500
Teaching departments	20,000
Administration/ management	7,000
Central Services	3,000

- Administration / management costs:

Direct costs; Shs 17,750,000

Indirect costs are apportioned on the basis of occupancy costs.

Direct and indirect costs for the administration /management function are charged to degree courses on a percentage basis.

- Faculty costs:

Direct costs; Shs 7 million

Indirect costs are apportioned on the basis of occupancy and central service costs.

Faculty direct and indirect costs are charged to the teaching departments.

- Teaching departments:

Direct costs; Shs 55,250,000

Indirect costs are apportioned on the basis of occupancy costs and central services costs plus all faculty costs.

Direct and indirect costs for the teaching departments are charged to degree courses on a percentage basis.

- Central services:

Direct costs; Shs 10,000,000

Indirect costs are apportioned on the basis of occupancy costs.

Direct and indirect costs of central services have, in the previous years, been charged on a percentage basis.

The estates manager has now completed a study which has estimated what user departments would have paid to external suppliers for the same services on an individual basis. For the year ended 30 June 2011, the apportionment of central services costs is to be calculated in a manner which recognizes the cost/savings achieved by using the central services facilities instead of the external service companies. This is to be done by apportioning the overall savings to user departments in proportion to their share of estimated external costs which are given below.

Estimated external cost of service provision

	Shs '000'
Faculties	2,400
Teaching departments	8,000
Degree courses:	
Business Studies	320
Telecom Engineering	480
Food Science	320
All other courses	<u>4,480</u>
	<u>16,000</u>

The management accountant of the university has provided you with information that there are 80 business studies, 50 mechanical engineering and 120 catering studies undergraduate students in the university

The total costs of the university are apportioned to degree courses as follows:

	Business studies	Mechanical engineering	Catering studies
Teaching departments	3%	2.5%	7%
Administration / management services	2.5%	5%	4%

Central services are apportioned on the basis of external cost of service provision. For the year ended 30 June 2011, the number of undergraduates at the university was 2,500.

**Required:**

- (a) To help the management accountant understand the flow of information, prepare a flow diagram which shows the apportionment of costs to user departments. (No cost information need be input).  
**(5 marks)**
- (b) Calculate the overall average cost per undergraduate for the university for the year ended 30 June 2011 and for each of the degree courses of business studies, mechanical engineering and catering studies. Central services costs are apportioned on the basis of external cost of service.  
**(15 marks)**
- (c) Basing on the calculations in (b) above, advise the Vice Chancellor-Finance and Administration on which the following proposals is likely to maximize returns to the university:
- (i) Charge a uniform fee of Shs 45,000 per student.
  - (ii) Charge differing fees per undergraduate degree course undertaken.  
**(5 marks)**
- (d) Suggest reasons for any difference in the average cost per undergraduate from one degree course to another.  
**(5 marks)**
- (Total 30 marks)**

## SECTION B

*Attempt three of the four questions in this section.*

### Question 2

- (a) The standard labour cost of one batch of 10,000 units is Shs 504,000. This assumes a standard time of 420 hours costing Shs 1,200 per hour. The standard time for 4,200 direct labour hours is the average time expected per batch based on a product life of 1,280,000 units or 128 batches. The expected time for the first batch was 2000 hours and an 80% learning curve is expected to apply throughout the product lifecycle.

The company has now completed the production of 32 batches and the total actual direct labour cost was Shs 349,300.

The following direct labour variances have also been calculated.

Direct labour rate variance Shs 8500 (Adverse).

Direct labour efficiency variance Shs 88,100 (Adverse).

Further analysis has shown that the direct labour efficiency variance was solely caused by the actual rate of learning being different from the expected. However the time taken for the first batch was as expected.

#### **Required:**

- (i) Calculate the actual rate of learning that occurred. **(5 marks)**
- (ii) Assuming that the actual rate of learning and the actual labour rate continue throughout the life of the product, calculate the total direct labour cost that the company will incur during the life of the product. **(5 marks)**
- (b) Experience and learning curves have been proved to improve profitability of businesses.

#### **Required:**

Identify and explain at least **five** areas where business efficiencies can be improved using the learning and experience curves.

**(10 marks)**

### Question 3

Flakiness General Enterprises specializes in the production of one-litre plastic bottles but can also produce children's toys for the Ugandan market using a plastic moulding machine. The machine is capable of producing 100 bottles per hour. The company has estimated that the variable cost of producing a plastic bottle is Shs 400. The bottles are sold for Shs 1,000 per bottle.

Recently, management was approached by a local children play shop company that would like the firm to produce moulded plastic toys for them. The play shop company is willing to pay Shs 4,000 per toy. The variable cost per toy is estimated at Shs 2,400. In addition, the company will have to incur a one-off cost of Shs 20 million to set up the mould required specifically for this order.

Due to the fact that the toys use more plastic and the designs are more intricate, it is expected that the machine can only produce 40 toys per hour. However, the customer order is for 100,000 toys.

Assume that Flakiness General Enterprises has a total capacity of 10,000 machine hours available during the period in which the toy company wants delivery of the toys, and that the firm's fixed costs, excluding the costs to set up the toy mould during the same period would be Shs 200 million.

#### Required:

- (a) Supposing the demand for the bottles varies between the absolute values of 750,000 units and 850,000 units and the special order has to be taken either in full or rejected totally, advise management whether they should accept the special toy order.
- (10 marks)**
- (b) The marketing manager of the company has just told you that the demand for the bottles is forecast to be 700,000 bottles and the special order for the toys has to be accepted in full or totally rejected. He further informs you that to meet this special order for toys, the union of plastic workers has demanded from the company a special one-off fee of Shs 60 million.

Advise management whether the special order for the toys should be accepted or rejected.

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

#### Question 4

Air Cantona owns a single jet aircraft whose sitting capacity is 360 passengers and operates between Kampala and Juba. The aircraft flies from Kampala on Mondays and Thursdays and from Juba on Wednesdays and Saturdays. The average number of passengers per flight is 200 and it offers an average number of 4 flights per week. Air Cantona cannot offer any more flights between Kampala and Juba.

According to the flight accountant, the average cost of a one-way fare is Shs 500,000 and fuel costs Shs 14 million per flight. Food and beverage service costs Shs 20,000 per passenger. The tour agents that help book passengers charge an 8% commission on the fares per passenger.

The plane is leased at a cost of Shs 53 million per flight. PENHAS, the ground handling company charges Shs 7 million per flight for maintenance, check-in and baggage handling. The company pays its flight crew Shs 4 million per flight.

#### Required:

- (a) Determine the operating profit that Air Cantona makes on each one-way flight between Entebbe and Juba.  

**(15 marks)**
- (b) The marketing department of Air Cantona has estimated that lowering the price of the one-way ticket to Shs 480,000 would increase the average number of passengers to 212.

Advise management whether it should proceed with this proposal.

**(5 marks)**

**(Total 20 marks)**

#### Question 5

Mande Singa is the owner and manager of a large tyre trading business, Kampala Tyres and Tubes. He uses the economic order quantity model for managing his inventory of tyres. He initially predicts the annual demand for heavy duty tyres to be 2,000 units. Each tyre costs Shs 300,000. If he is to place an extra order the additional costs per order is Shs 2 million. The additional carrying cost is Shs 400,000 per unit plus 10% of the purchase price.

#### Required:

- (a) Calculate the economic order quantity for the heavy duty tyres , together with the annual ordering costs and carrying costs.

**(10 marks)**

- (b) Suppose Mande Singa is correct in all his predictions except for the purchase price. If he had correctly predicted the events, he would have foreseen that the price would drop to Shs 200,000 at the beginning of the year and remain unchanged throughout the year.

Determine how much this error in prediction has cost him.

**(10 marks)**

**(Total 20 marks)**

### SECTION C

*Attempt one of the two questions in this section.*

#### Question 6

In an address to industrialists who attended the recently concluded annual general meeting of the Uganda Industrialists Association, the chief guest, a Japanese industrialist stated, in his keynote address, that “the just-in-time philosophy championed in most Japanese industries undertakes to eliminate non-value adding activities, zero inventory, zero defects, have a batch size of one and have zero breakdowns”. The managing director of XYZ Industries who attended the meeting was excited by the remarks of the chief guest though he did not fully comprehend some of the terminologies used. He has requested you for further explanation.

#### **Required:**

Write a memo to the managing director of XYZ Industries, explaining the terms ‘non-value adding activities, zero inventory, zero defects, and a batch size of one’ referred to in the keynote address above.

**(10 marks)**

#### Question 7

In the budget conference for Vaco Ltd, a leading company in Uganda, a budgeting consultant stated the following: “In order to overcome the shortcomings involved in incremental budgeting, alternative methods have been developed. The most widely used alternative methods are zero-based budgeting and programme planning and budgeting system”.

#### **Required:**

Write a letter to the chief executive officer of Vaco Ltd defining zero-based budgeting and programme planning and budgeting system, giving **two** advantages and **two** disadvantages of each.

**(10 marks)**