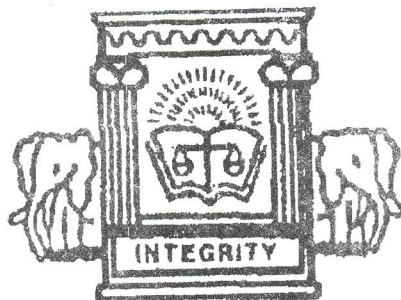


**THE INSTITUTE OF CHARTERED
ACCOUNTANTS (GHANA)**



**NOVEMBER 2005 EXAMINATIONS
(PROFESSIONAL)**

PART 2

**MANAGEMENT ACCOUNTING AND CONTROL
(Paper 2.2)**

**NB: Please use separate booklet/booklets for each part.
Do not answer Parts A & B in the same answer booklet/booklets**

TIME ALLOWED: 3 HOURS

QUESTION 1

(a) The Managing Director of Onua Enterprise Limited wants to adopt Zero Base Budget approach in next year's budget. As Management Accountant you are required to explain the following to the Managing Director.

- (i) The process of Zero Base Budget (ZBB). (2 marks)
- (ii) The steps in the implementation of Zero Base Budget. (3 marks)
- (iii) The advantages of using Zero Base Budgeting. (3 marks)
- (iv) The problems involved in using Zero Base Budgeting (1 marks)

(Total: 9 marks)

(b) Akwaba Manufacturing Company Limited uses a standard cost system in its Production Department. The following are the materials standards for its main product, Alpha, used in the detergent industry in the sub-region:

<u>Material</u>	<u>Units</u>	<u>Std Price/Unit</u>	<u>Amount</u>
		¢	¢
X	18	1,000	18,000
Y	9	800	7,200
Z	23	400	9,200
			34,400

The standard mix is expected to produce 40 units of finished products. The actual results for the period were:

Raw materials of 300,000 units were used as follows:

Material X	138,000 units at ¢1,100
Y	30,000 units at ¢750
Z	132,000 units at ¢450

The output of the finished product was 230,000 units.

You are required to:

- (i) Calculate the material price, mix and yield variances. (9 marks)
- (ii) Describe briefly two major reasons for material variances. (2 marks)

(Total: 20 marks)

QUESTION 2

- (a) The financial information provided below relates to the operations of Unique Manufacturing Company Limited, producers of household consumables.
1. The finance department had budgeted a net profit before tax of €3 million per annum over the period of the foreseeable future, based on a net capital employed of €10 billion.
 2. Plant replacement anticipated over this period is expected to be approximately equal to the annual depreciation each year. These figures compare well with the organisation's required rate of return of 20% before tax.
 3. Management is currently considering a substantial expansion of its manufacturing capacity to cope with the forecast demands of a new customer who is prepared to offer a 5-year contract providing the company with annual sales of €2 billion.
 4. In order to meet this contract, a total additional capital outlay of €2 billion is envisaged, being €1.5 billion of new fixed assets plus €500 million working capital. A five-year plant life is expected.
 5. Operating costs on the contract are estimated to be €1.35 billion per annum, excluding depreciation.
 6. This is considered to be low-risk venture as the contract will be firm for five years and the manufacturing processes are well understood within the company.

Required:

Calculate the impact of accepting the contract on the finance department's Return on Capital Employed (ROCE) and Residual Income (RI) indicating whether it would be attractive to the management of Unique Manufacturing Company Limited.

(15 marks)

- (b) A large organisation, with a well-developed cost centre system is considering the introduction of profit centres and/or investment centres throughout the organisation, where appropriate.

As a Management Accountant, you will be providing technical advice and assistance for the proposed scheme.

You are required to:

- (i) Describe the main characteristics and objectives of Profit Centres and Investment Centres.
- (ii) Explain what conditions are necessary for the successful introduction of such Centres.

(5 marks)

(Total: 20 marks)

QUESTION 3

Osu General Services Limited provides social support services to the general public. The annual cost of running the laundry department of the company is provided below:

	€'m
Wages and Salaries	175
Maintenance contract for the equipment	145
Depreciation on the equipment	130
Soap powder	118
Other direct costs	<u>112</u>
	<u>680</u>

The company, just over one year ago, re-equipped the laundry department with machinery at a cost of €500 million. The current replacement cost of this machinery is €600 million. However, as it was specially made for the company's laundry services, its highest resale value would be obtained from the manufacturer who guarantees to give back 10% of its initial cost at anytime up to ten (10) years in the future, for its scrap value.

The following information is also available:

- i. A new laundry has just been set up in the area by a firm specialising in commercial laundry. It has offered to launder the items that would be handled by the Osu General Services Limited for €550 million per annum for the next nine (9) years.
- ii. If the offer is accepted, most of the staff could be redeployed. However, it is estimated that if the laundry was closed, redundancy costs would amount to €115 million.
- iii. The second year's maintenance contract payment had just been made. This is non-refundable.

- iv. The expected total life of the machinery is ten (10) years.
- v. The other direct costs for the current year have been incurred and paid.
- vi. There is a contract to obtain soap powder. This contract is renewable each year and has a cancellation clause in it which can be invoked by the company during any year at a cost of €30 million. However, the powder could be used by the company as a substitute for a floor cleaning liquid which currently costs €116 million.

Required:

You are to advise the management committee as to whether or not the offer from the commercial laundry should be accepted.

(Total: 20 marks)

PART B

Attempt ANY Two (2) Questions

NB: Use a SEPARATE Answer Booklet(s) for this Section

QUESTION 1

A supermarket buys its daily newspapers from a local newspaper vendor. A newspaper sells for €3,000 per copy and costs €2,500 per copy delivered to the supermarket.

Newspapers left over at the end of the day are sold at €1,500 per copy to a groundnut seller. Demand for newspapers is relatively constant over time, but varies from day to day. The results of a recent daily demand of the supermarket's newspapers is shown below:

Daily demand (No. of copies)	70	80	90	100
Probability of demand	0.1	0.2	0.4	0.3

The problem now facing the supermarket is the number of copies of the newspaper to stock in order to maximize expected profits.

Required:

- Prepare the conditional profits table. (8 marks)
- Calculate the expected conditional profit for each course of action taken. (5 marks)
- State the optimum number of copies of the newspaper that the supermarket should buy daily. (2 marks)
- Determine the expected value of perfect information for this problem. Interpret your answer. (5 marks)

(Total: 20 marks)

QUESTION 2

- A Pharmaceutical Company believes that there is a 0.95 chance that the Food and Drugs Board (FDB) will approve a new drug the company plans to distribute if the results of current testing show that the drug causes no side effects. The company further believes that there is a 0.50 probability that the FDB will approve the drug if the test shows that the drug does cause side effects. A physician working for the company believes that there is 0.20 probability that the test will show that the drug causes side effects.

Required:

- i. What is the probability that the drug will be approved by FBD?
- ii. If the drug is not approved, what is the probability that the test shows that the drug causes side effects?

(6 marks)

- (b) A computer Company is considering a plant expansion that will enable the Company to begin production of a new computer product. The company's CEO must determine whether to make the expansion a medium or large-scale project. An uncertainty involves the demand for the new product which, for planning purposes may be low demand, medium demand or high demand. The probability estimates for the demands are 0.20, 0.50 and 0.30 respectively.

Demand	Medium-scale expansion		Large-scale expansion	
	Profit	Probability	Profit	Probability
Low	50	0.20	0	0.20
Medium	150	0.50	100	0.50
High	200	0.30	300	0.30

Required:

- i. Compute the expected values for the profit associated with the two expansion alternatives and hence state the expansion alternative that is preferred for the objective of maximizing the expected profit.
- ii. Compute the standard deviations for the profit associated with the two expansion alternatives and hence state the expansion alternative that is preferred for the objective of minimizing the risk or uncertainty.

(14 marks)

QUESTION 3

- (a) A manufacturing Company is concerned about the stock level of one of its inventory items which appears to be too low. The item is used in the manufacture of the company's product. Demand for the item is fairly constant at 250 units a week for each of the 50 working weeks in the year. The Purchasing department of the company is currently ordering the item, which costs ₦400 per unit, in batches of 2000 units. The cost of ordering a batch of the item is ₦50,000 and the inventory carrying the cost per year is estimated at $12\frac{1}{2}$ per cent of the cost of the item.

Required:

Calculate:

- i. the economic order quantity (4 marks)
 - ii. the total annual inventory cost at this order quantity (3 marks)
 - iii. the annual saving, if any, that would be made over the current policy of ordering in batches of 2000 units. (4 marks)
 - iv. the re-order level, if the lead time is one week. (2 marks)
- (b) The Management of the company is contemplating making the item in-house using its present idle capacity and technical expertise. Investigations have shown that it could be produced at the rate of 25 units per hour for 40 hours per week in a part of the factory at present unoccupied. The set-up cost per production run would be €96,000. Annual demand, unit cost and inventory holding cost per unit per annum for the item remain the same as in (a) above.

Required:

- i. Calculate the economic batch quantity. (3 marks)
- ii. Calculate the total annual inventory cost at this batch quantity. (2 marks)
- iii. Based on your calculations above, should the company make or buy the item? (2 marks)

(Total: 20 marks)

QUESTION 4

- (a) The demand function for a manufacturer is given by:

$$p = 400 - 2x$$

where **p** represents price per unit, in hundreds of cedis

x represents output, in units

the manufacturer's average cost function is:

$$AC = 0.2x + 4 + \frac{400}{x}$$

Where AC represents average cost per unit, in hundreds of cedis

x represents output, in units.

Required:

Find:

- i. the level of output at which profit is maximized. (8 marks)
- ii. the price per unit that must be charged for maximum profit (2 marks)
- iii. the maximum profit. (2 marks)

(b) As a regulatory device, government imposes a tax of €2,200 per unit on the manufacturer.

Required:

Ascertain the effect of the tax on the manufacturer's maximum profit.

(8 marks)

(Total: 20 marks)