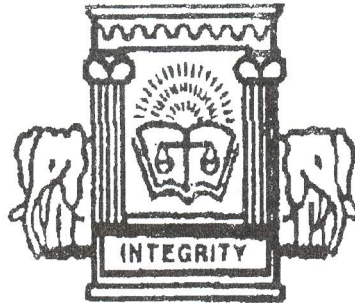


**THE INSTITUTE OF CHARTERED  
ACCOUNTANTS (GHANA)**



**NOVEMBER 2009 EXAMINATIONS  
(PROFESSIONAL)**

**PART 2**

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

**Attempt five (5) Questions in ALL**

**TIME ALLOWED: 3 HOURS**

**NB: please use Separate Booklet(s) for each Part**  
**Do not answer PARTS A & B in the same Answer Booklet(s)**

## PART A

**Attempt ALL Questions in this Section**  
**NB: Use a Separate Answer Booklet(s) for Part A**

### QUESTION 1

- a) The Standard Cost Card for Enyo Company Ltd for the past five (5) years revealed the following:

Direct Material Cost	GH¢3.00
Wages & Salaries	GH¢1.00
Contribution-Sales Ratio	60%

The company expects net profit after tax to be GH¢1,200,000 and pays corporate tax at the rate of 50%.

The company budgeted the following fixed costs in 2009 for its annual output of 500,000 units.

	GH¢
Factory light and heat	300,000
Rental of factory premises	150,000
Depreciation of plant & Machinery	70,000
Sales Managers' Salaries	60,000
Selling, General & Administrative expenses	20,000

*You are required to:*

- i. Determine the total budgeted sales for the period. *(4 marks)*
  - ii. Determine the unit selling price. *(3 marks)*
  - iii. Calculate the break-even point for 2009. *(3 marks)*
  - iv. Prepare income statement for 2009. *(6 marks)*
- b) Outline the usefulness of making contribution analysis by a manufacturing company. *(4 marks)*

**(Total: 20 marks)**

## QUESTION 2

- a) Explain any **five (5)** features of relevant costs and revenue in decision making. **(5 marks)**
- b) Mugu Transport Services Ltd is faced with the decision as to whether to produce in-house or buy from an outside supplier some of its components (tyres). The costs of producing 50,000 tyres for its fleet of vehicles are as follows:

	GH¢
Direct materials	60,000
Direct labour	30,000
Variable overheads	12,000
Fixed overheads	<u>8,000</u>
Total cost	<u>110,000</u>

The company has found a Supplier who has offered to supply the tyres to it at GH¢2.15 per tyre. If the tyres are purchased, all the variable costs and one-half of the fixed costs will be saved.

### **Required:**

- (i) Using only the financial information provided, show whether the company should make or buy the tyres. **(8 marks)**
- (ii) Will your answer in (i) be different if the released production capacity will generate additional income of GH¢25,000? **(7 marks)**

**(Total: 20 marks)**

## QUESTION 3

Action Chemical Company Ltd manufactures a single product, "Magic Pill" and has provided you with the following information which relates to the period which has just ended:

Standard cost per batch of product Magic Pill

Material	Kilos	Price per Kilo GH¢	Total GH¢
F	15	4	60
G	12	3	36
H	<u>8</u>	6	48
	35		
Less: Standard loss	<u>(3)</u>		
Standard yield	<u>32</u> kg		

Labour	Hours	Rates per hour GH¢	Total GH¢
Department P	4	10	40
Department Q	2	6	12

Budgeted sales for the period are 4,096 kilos at GH¢16 per kilo. There was no budgeted opening or closing stocks of finished goods.

The actual materials and labour used for 120 batches were:

Material	Kilos	Price per Kilo GH¢	Total GH¢
F	1,680	4.25	7,140
G	1,650	2.80	4,620
H	<u>870</u>	6.40	<u>5,568</u>
	4,200		17,328
Less: Actual loss	<u>(552)</u>		
Actual yield	<u>3,648</u>		

Labour	Hours	Rates per hour GH ¢	Total GH¢
Department P	600	10.60	6,360
Department Q	270	5.60	<u>1,512</u>
			<u>25,200</u>

The entire production of Magic Pill was sold during the period for GH¢16.75 per kilo.

*You are required to:*

- a) Calculate the following material variances
  - i. Price; (4 marks)
  - ii. Usage; (4 marks)
  - iii. Mix; (4 marks)
  - iv. Yield. (4 marks)
- b) Calculate the sales variances. (4 marks)

**(Total: 20 marks)**

**PART B: QUANTITATIVE TECHNIQUES**

**Attempt ANY Two (2) Questions**

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

### QUESTION 4

- a) In PERT analysis only critical activities contribute to the project variance. True or False?

(1 mark)

- b) The Chief Surveyor of a firm that moves earth in preparation for the construction of roads has identified the activities and possible durations for each activity as shown in the table below:

Activity	Duration (days)			Preceding Activities
	Most likely	Pessimistic	Optimistic	
A	5	6	4	-
B	10	13	7	-
C	1	3	2	-
D	8	10	6	B
E	10	10	10	B
F	9	10	8	B
G	3	5	1	A,D
H	7	10	4	A,D
I	4	6	2	E,F
J	3	4	2	F
K	5	7	3	C,J
L	8	9	7	H,I,K
M	4	5	3	C,J

**Required:**

- i. Draw the network diagram for the project.

(10 marks)

- ii. Determine the expected duration of the project and the critical path.

(4 marks)

- iii. What is the probability that the project will be completed within 40 days?

(5 marks)

**(Total: 20 marks)**

## QUESTION 5

- a) State **two (2)** quantitative methods for measuring the strength of the relationship between two variables. **(2 marks)**
- b) How are ties treated in ranked correlation analysis? **(2 marks)**
- c) The following table is a summary of data collected on a sample of 10 students in JHS3 of Bibikang International School:

Name	Ama	Afua	Ajoa	Akua	Agie	Kofi	Kojo	Kwame	Kwesi	Kojogah
No. of times students slept during classes	12	32	19	31	30	15	22	10	17	16
Student's position in end of term examination	6	10	4	20	16	25	5	10	18	16

### **Required:**

- (i) Using the method of least squares, determine the equation of the regression line of student's position on the sleeping time of a student. **(6 marks)**
- (ii) Calculate the Spearman's Rank Correlation Coefficient between a student's position in end of term exams and the number of times the student slept during classes. **(5 marks)**
- (iii) Use your results in (i) above to estimate the position in the end of term's exams of a student of Bibikang International Schools who slept 30 times during classes. **(2 marks)**
- (iv) Provide a quantitative measure of the reliability of your estimate in (iii) above. **(3 marks)**

**(Total: 20 marks)**

## QUESTION 6

The managers of Namine Rural Bank, having realised substantial profits last year, decided to give the bank's loan officers three different offers on their monthly earnings to make a choice.



- Offer I: A 20% increase on their GH¢1,000 monthly gross salary.  
 Offer II: An initial amount of GH¢500 plus GH¢200 per successful loan transaction.  
 Offer III: A commission of GH¢500 per successful loan transaction.

Assume all earnings by a loan officer are taxable and that no loan officer can successfully carry out 5 or more transaction in a month.

**Required:**

- (a) Construct a payoff table for the offers made by the management of Namine Rural Bank to its loan officers. (4 marks)
- (b) Determine the best offer for a loan offer with the following attitude to risk:
- (i) risk averse (3 marks)
- (ii) risk-taker (3 marks)
- (iii) risk-neutral (5 marks)
- (c) Find the expected value of perfect information (EVPI) assuming the following probabilities:

P(No successful loan transaction in a month)	=	0.20
P(1 successful loan transaction in a month)	=	0.25
P(2 successful loan transaction in a month)	=	0.35
P(3 successful loan transaction in a month)	=	0.15
P(4 successful loan transaction in a month)	=	0.05

(5 marks)

**(Total: 20 marks)**

**QUESTION 7**

- a) Differentiate the following equation with respect to x and determine the coordinates of the turning points, notably minimum, maximum and inflection.

$$Y = 4x^3 - 12x^2$$

(8 marks)

- b) An accountant of GOLDBAR Co. Ltd has undertaken an investigation into some activities of the company and has discovered that the total cost curve, TC, is given by

$$TC = 120 + 5x^2$$

and

$$p = 100 - 5x$$

Where P is price and x is output

**Required:**

- (i) Determine the equation of profit (3 marks)
- (ii) Find the output of the company that maximizes profit. (3 marks)
- (iii) Derive the equation of marginal revenue. (2 marks)
- (iv) If elasticity of demand is given by

$$\frac{P}{X} \frac{1}{dP/dx}$$

Find the elasticity of demand when profit is maximized.

(4 marks)

**(Total: 20 marks)**