

**UGANDA MARTYRS UNIVERSITY**  
**FACULTY OF BUSINESS ADMINISTRATION &**  
**MANAGEMENT**

**BSc. ACCOUNTING & FINANCE**  
**MANAGEMENT DECISION & CONTROL –**  
**PAPER 11**

**TUESDAY 20<sup>TH</sup> DECEMBER, 2022**

**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 40 marks.**

**3. Section B has four questions and only three questions are to be attempted. Each question carries 20 marks.**

**4. Write your answer to each question on a fresh page in your answer booklet.**

**5. 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

Good foods investments Ltd runs a cafeteria situated on the ground floor of a large corporate office block. Each of the five floors of the building are occupied and there are in total 1,240 employees. Good foods investments Ltd sells lunches and snacks in the cafeteria. The lunch menu is freshly prepared each morning and Good foods investments Ltd has to decide how many meals to make each day. As the office block is located in the city centre, there are several other places situated around the building where staff can buy their lunch, so the level of demand for lunches in the cafeteria is uncertain. Good foods investments Ltd has analysed daily sales over the previous six months and established four possible demand levels and their associated probabilities. He has produced the following payoff table to show the daily profits which could be earned from the lunch sales in the cafeteria:

Demand level	Probability	Supply level			
		450	620	775	960
		Shs'000	Shs'000	Shs'000	Shs'000
450	0.15	1,170	980	810	740
620	0.30	1,170	1,612	1,395	1,290
775	0.40	1,170	1,612	2,015	1,785
960	0.15	1,170	1,612	2,015	2,496

### Required:

(a)

- (i) If Good foods investments Ltd adopts a maximin approach to decision-making, which daily supply level will they choose? **(2marks)**
- (ii) If Good foods investments Ltd adopts a minimax regret approach to decision-making, which daily supply level will they choose? **(4marks)**
- (iii) If Good foods investments Ltd adopts the expected value approach to decision-making, which daily supply level will they choose? **(2marks)**
- (iv) If Good foods investments Ltd adopts a maximax approach to decision-making, which daily supply level will they choose? **(2marks)**

The human resources department has offered to undertake some research to help Good foods investments Ltd to predict the number of employees who will require lunch in the cafeteria each

day. This information will allow Good foods investments Ltd to prepare an accurate number of lunches each day.

**Required:**

(v) What is the maximum amount which Good foods investments Ltd would be willing to pay for this information. **(5 marks)**

Duff Co manufactures three products, X, Y and Z. Demand for products X and Y is relatively elastic whilst demand for product Z is relatively inelastic. Each product uses the same materials and the same type of direct labour but in different quantities. For many years, the company has been using full absorption costing and absorbing overheads on the basis of direct labour hours. Selling prices are then determined using cost plus pricing. This is common within this industry, with most competitors applying a standard mark-up.

Budgeted production and sales volumes for X, Y and Z for the next year are 20,000 units, 16,000 units and 22,000 units respectively.

The budgeted direct costs of the three products (Per unit) are shown below:

Product	X	Y	Z
	Shs'000	Shs'000	Shs'000
Direct materials	25	28	22
Direct labour (Shs12,000 per hour)	30	36	24

In the next year, Duff Co also expects to incur indirect production costs of Shs1,377,400,000 which are analysed as follows:

Cost pools	Shs'000	Cost drivers
Machine set up costs	280,000	Number of batches
Material ordering costs	316,000	Number of purchase orders
Machine running costs	420,000	Number of machine hours
General facility costs	<u>361,400</u>	Number of machine hours
	<u>1,377,400</u>	

The following additional data relate to each product:

Product	X	Y	Z
Batch size (units)	500	800	400
No of purchase orders per batch	4	5	4

Machine hours per unit	1.5	1.25	1.4
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Duff Co wants to boost sales revenue in order to increase profits but its capacity to do this is limited because of its use of cost plus pricing and the application of the standard mark-up. The finance director has suggested using activity based costing (ABC) instead of full absorption costing, since this will alter the cost of the products and may therefore enable a different price to be charged.

**Required:**

**(b)**

- (i) Calculate the budgeted full production cost per unit of each product using Duff Co's current method of absorption costing. **(3 marks)**
- (ii) Calculate the budgeted full production cost per unit of each product using activity based costing. **(10 marks)**
- (iii) Discuss the impact on the selling prices and the sales volumes OF EACH PRODUCT which a change to activity based costing would be expected to bring about. **(6 marks)**

Nkozi Town council (NTC) is responsible for the provision of a wide range of services in the Kayabwe region, which is based in the south of the country 'Uganda'. These services include, amongst other things, responsibility for residents' welfare, schools, housing, hospitals, roads and waste management. Over recent months the Kayabwe region experienced the hottest temperatures on record, resulting in several forest fires, which caused damage to several schools and some local roads. Unfortunately, these hot temperatures were then followed by flooding, which left a number of residents without homes and saw higher than usual numbers of admissions to hospitals due to the outbreak of disease. These hospitals were full and some patients were treated in tents. Residents have been complaining for some years that a new hospital is needed in the area. Prior to these events, the NTC was proudly leading the way in a new approach to waste management, with the introduction of its new 'Waste Recycling Scheme.' Two years ago, it began phase 1 of the scheme and half of its residents were issued with different coloured waste bins for different types of waste. The final phase was due to begin in one month's time. The cost of providing the new waste bins is significant but NTC's focus has always been on the long-term savings both to the environment and in terms of reduced waste disposal costs. The NTC is about to begin preparing its budget for the coming financial year, which starts in one month's time. Over recent years, zero-based budgeting (ZBB) has been introduced at a number of regional authorities in the country and, given the demand on resources which NTC faces this year, it is considering whether now would be a good time to introduce it.

**Required:**

**(c)**

(i) Describe the main steps involved in preparing a zero-based budget. (3 marks)

(ii) Outline THREE potential benefits of introducing zero-based budgeting at the NTC (3 marks)

(Total 40 marks)

## Question 2

The XYZ Company produces three products, X, Y, and Z. For the coming accounting period budgets are to be prepared using the following information: Budgeted sales

Product X 2000 units at Shs100,000 each

Product Y 4000 units at Shs130,000 each

Product Z 3000 units at Shs150,000 each

Standard usage of raw material

	Wood (kg per unit)	Vanish (litres per unit)
Product X	5	2
Product Y	3	2
Product Z	2	1
Standard cost of raw material	Shs8,000	Shs4,000

Inventories of finished goods (Units)

	X	Y	Z
Opening	500	800	700
Closing	600	1000	800

Inventories of raw materials

	Wood	Varnish
Opening	21,000	10,000
Closing	18,000	9,000

Labour

	X	Y	Z
Standard hours per unit	4	6	8

Labour is paid at the rate of Shs3,000 per hour

**Required:**

(a)

Prepare the following budgets:

(i) Sales budget (2 marks)

(ii) Production budget (2 marks)

(iii) Material usage budget (2 marks)

(iv) Material purchases budget (2 marks)

(v) Labour budget (2 marks)

A company has prepared the following fixed budget for the coming year.

Sales	10,000 units
Production	10,000 units
	Shs
Direct materials	50,000
Direct labour	25,000
Variable overheads	12,500
Fixed overheads	<u>10,000</u>
	Shs97,500

Budgeted selling price Shs10 per unit.

At the end of the year, the following costs had been incurred for the actual production of 12,000 units.

	Shs
Direct materials	60,000
Direct labour	28,500
Variable overheads	15,000
Fixed overheads	<u>11,000</u>
	Shs114,500

The actual sales were 12,000 units for Shs122,000

**Required:**

**(b)**

(i) Prepare a flexed budget for the actual activity for the year **(5 marks)**

(ii) Calculate the variances between actual and flexed budget, and summarise in a form suitable for management. (Use a marginal costing approach) **(5 marks)**

**(Total 20 marks)**

### Question 3

The standard material cost per unit of a product is as follows:

	Shs
Material X 2 kg @ Shs3,000 per kg	6,000
Material Y 1 kg @ Shs2,000 per kg	<u>2,000</u>
	8,000

The actual production during the period was 5,000 units and the materials used were:

Material X 9,900 kg costing Shs27,000

Material Y 5,300 kg costing Shs11,000

**Required, calculate the:**

**(a)**

- (i) Total materials cost variance **(2 marks)**
- (ii) The materials price variance **(2 marks)**
- (iii) The materials usage variance **(2 marks)**
- (iv) The mix variance **(3 marks)**
- (iv) The yield variance **(3 marks)**

Nkozi Holdings Ltd sells three products – A, B and C. The following table shows the budget and actual results for these products:

	A	B	C
Budget:			
Sales (units)	200	100	100
Price per unit (Shs)	20	25	30
Cost per unit(Shs)	17	21	24
Actual:			
Sales (units)	180	150	170
Price per unit (Shs)	22	22	26
Cost per unit(Shs)	16	18	25

**Required, calculate the:**

**(b)**

- (i) Sales price variance **(2 marks)**
- (ii) Sales mix variance **(3 marks)**
- (iii) Sales quantity variance **(3 marks)**

**(Total 20 marks)**

#### Question 4

A company manufactures three products, Pepsi, Mirinda and Mountain dew. The present net annual income from these is as follows:

	Pepsi Shs'000	Mirinda Shs'000	Mountain dew Shs'000	Total Shs'000
Sales	50,000	40,000	60,000	150,000
Variable costs	(30,000)	(25,000)	(35,000)	(90,000)
Contribution	20,000	15,000	25,000	60,000
Fixed costs	(17,000)	(18,000)	(20,000)	(55,000)
Profit/(loss)	3,000	(3,000)	5,000	5,000

The company is considering whether or not to cease selling Mirinda. It is felt that selling prices cannot be raised or lowered without adversely affecting net income. Shs5,000,000 of the fixed costs of Mirinda are direct fixed costs which would be saved if production ceased. All other fixed costs would remain the same.

#### Required:

(a) Advise whether the company should cease production and sale of Mirinda **(10 marks)**

A company produces and sells three products: C, V and P. The budget information for the coming year is as follows:

#### (b)

	C	V	P
Sales (units)	4,800	4,800	12,000
Selling price per unit (Shs)	5,000	6,000	7,000
Variable cost per unit(Shs)	(3,750)	(5,250)	(4,350)
Contribution per unit(Shs)	1,250	750	2,650

The total budgeted fixed overheads for the year are Shs8,000,000

#### Required:

- Calculate the C/S ratio for each product individually (2 marks)
- Calculate the average C/S ratio **(2 marks)**
- Calculate the breakeven revenue **(4 marks)**
- Construct a PV chart **(2 marks)**

**Total marks (20marks)**



### Question 5

(a) JMM is a car manufacturer. It is a relatively new company and the directors are keen to establish a reputation for high quality. The management of JMM recognises the need to establish a culture of Total Quality Management (TQM) at the company.

The management accounting team at JMM has collected the following actual information for the most recent quarter of the current year:

<u>Cost data</u>	Shs
Customer support centre cost per hour	58
Equipment testing cost per hour	30
Manufacturing rework cost per car	380
Warranty repair cost per car	2,600
<u>Volume and activity data</u>	
Cars requiring manufacturing rework	800 cars
Cars requiring warranty repair	650 cars
Customer support centre time	500 hours
Production line equipment testing time	400 hours

Additional information:

JMM undertook a quality review of its existing suppliers during the quarter at a cost of Shs60,000. Due to the quality issues in the quarter, the car production line experienced periods of unproductive 'down time' which cost Shs375,000.

#### Required:

- (i) Produce a Cost of Quality report for JMM using the four recognised quality cost headings. (6 marks)
- (b) Explain how a Cost of Quality report would support the development of a TQM culture at JMM. (4 marks)

PBB is a toy manufacturer and retailer. PBB sells toys to consumers through its large network of retail outlets in its home country and via the company's website. PBB purchases the materials and components that it needs to manufacture toys from a number of different suppliers. All of the purchases are delivered to PBB's raw material store at its factory and are held there until they are needed for production. Finished toys are transported from the factory to PBB's retail outlets by PBB's fleet of vehicles. The vehicles follow the same schedule each week irrespective of the load they are carrying. Finished toys that are destined for sale via the company's website are transported to PBB's distribution centre. PBB has recently won the contract to manufacture and sell a new toy. The new toy, Toy Z, is a doll based on a character from a very popular international children's film. PBB is free to set the selling price of Toy Z as it sees fit, but must pay a royalty fee of 15% of the selling price to the film company. PBB intends to sell Toy Z through its network of retail outlets. PBB plans to adopt a target costing approach for Toy Z. Market research has determined that the

selling price will be Shs25 per Toy Z. PBB requires a profit margin of 25% of the selling price of Toy Z.

The forecast costs per Toy Z are:

	Shs
Component A	2.15
Component B	1.75
Other materials	see note below for additional information
Labour (0.4 hours at Shs15 per hour)	6.00
Product-specific production overhead cost	1.89
Product-specific selling and distribution cost	2.38

Note: Each Toy Z requires 0.6kg of 'other materials'. These 'other materials' are purchased from a supplier at a cost of Shs4 per kg and 4% of all materials purchased are found to be substandard.

**Required:**

(i) Calculate the cost gap that exists between the forecast total cost per unit and the target cost per unit of Toy Z. (3 marks)

(b) Discuss how PBB could reduce costs in THREE primary activities in its value chain. (7 marks)

**(Total marks 20 marks)**

**END**