CERTIFIED PUBLIC ACCOUNTANT

ADVANCED LEVEL 2 EXAMINATIONS

A2.2: STRATEGIC PERFORMANCE MANAGEMENT

DATE: THURSDAY 30, NOVEMBER 2023

INSTRUCTIONS:

1. **Time Allowed: 3 hours 45 minutes** (15 minutes reading and 3 hours 30 Minutes writing).
2. This examination has two sections: A & B.
3. Section A has one Compulsory Question while section B has three optional questions to choose any **two**.
4. In summary attempt **three** questions.
5. Marks allocated to each question are shown at the end of the question.
6. Show all your workings where necessary.
7. The question paper should not be taken out of the examination room

SECTION A

QUESTION ONE

Zahara Group is a high-technology company located at the Rwanda special economic zone. Its founder and chairperson is Mr. Benon Muhire. Mr. Benon is a tech enthusiast hoping to gain some market share in the tech industry. Currently Zahara Group is producing Zahara phones and Zahara television sets. The Zahara television sets are of two types; Curved screens and flat screens. The curved screen goes at the brand name Zahara Super while the flat screen is Zahara star. Zahara Group sources most of its tech staff from Kigali Institute of Science and Technology. Miss Mpambire Christine is the chief production manager. Formerly she was working in Germany with Delliko Limited, a company that manufactures computer monitors for Dell, Lenovo and Apple brands.

Zahara Group operates a standard costing system and on monthly basis, its chief management accountant conducts variance analysis which must be submitted to the board of directors.

An extract from the management information for the month of March 2023 indicated the following;

		Note
Total number of units assembled and sold	1,400,000	1
Material price variance FRW	28,000,000	2
Total labor variance FRW	6,050,000	3

Explanations to note;

1. The budgeted total sales units for the televisions screens was put at 1,180,000 units, of an equal mix. Actual sales volume was 750,000 units of Zahara super and 650,000 units of Zahara star while the budgeted sales price was FRW 350,000 and FRW 300,000 respectively. The standard contribution per unit of Zahara star and Zahara Super was FRW 190,000 and FRW 180,000 respectively. The actual sales price in the month of March 2023 for Zahara star and Zahara Super turned out to be FRW 330,000 and FRW 290,000 respectively.

2. The main reason for the material price variance was the increase in the price of an integrated circuit, one component used in the manufacturing of screens. The standard cost of each Integrated circuit is FRW 60,000. Currently each integrated circuit is sold at a market price of FRW 85,000. Due to efficiency of Supplies and purchasing department of Zahara Group, they were able to obtain it at FRW 80,000

3. Each Zahara star uses two standard hours of labor while each Zahara super utilizes 1.5 standard hours of labor at a standard rate of FRW 14,000 per hour. This reflects the actual labor cost per hour of permanent staff for the month of March 2023. Due to increase in sales and production volume, the company utilized temporary staff at a higher rate of FRW 18,000 per

hour. At optimality, the permanent staff can work for 2,200,000 hours per month. In the month of March 2023, permanent staffs were all efficient. Each used 2 hours to produce Zahara star and 1.5 hours to produce Zahara super.

The total labor variance relates to temporal staff who took thrice as long as permanent staff to complete their production.

Required

(a) Calculate the following for the month of March 2023, showing you're working

(i) Sales price variance and sales volume contribution variance (4 Marks)

(ii) Material price planning variance and material price operating variance (3 Marks)

(iii) Labor rate variance and labor efficiency variance (4 Marks)

(iv) For each variance calculated above, give one reason of its occurrence (6 Marks)

(b) Explain the reasons as to why Zahara Group will be interested with material price planning variance and material price operating variance. (2 Marks)

(c) In the context of factors of production with specific reference to standard costing, **explain why most firms would prefer setting up their production firms in China as compared to Europe** (3 Marks)

(d) Standard costing and total quality management cannot coexist. This was a statement made in one of the management reports**.** Assuming you are the management accountant of Zahara Group, **describe to the board what this means** (3 Marks)

(e) Make notes on standards which you think can impact employee motivation of Zahara Group (4 Marks)

Uwera limited is a food processing firm located in Ruhengeri, two-hour drive from the capital city of Rwanda, Kigali. Its main competitor is Filunga Limited, a foreign company whose main office is located in Brussels. Amongst the products produced at Uwera limited include Cakes, cookies and milkshakes. These products are sold both locally in Rwanda and international in Europe and the Southern part of Africa. Its products are very competitive in the markets. Through the commercial attached for Rwanda in the United States of America, Uwera limited is looking for ways of expanding into this market. The management accountant, Miss Marie Mupenzi, projects that this move will boost its annual revenue to FRW 800 million in the end of the year 2023.

Each of these products contains special ingredients sourced from farmers in Southern province of Rwanda and its environs. The first of these is Zen, a lower-level caffeine extracted from the purple tea. The second one is known as Chan, an extract from the Stinging nettle plant.

These two extracts have boosted the economic lives of the residents of the Southern province of Rwanda. The government of the republic of Rwanda through the Ministry of Agriculture (MINIAGRI) has recently begun extensive training of farmers to maximize the productivity of this plants that generate Zen and Chan extracts. There is a huge international market for these extracts in the neighboring countries forming the East Africa Community.

Miss Marie Mupenzi has projected the following selling prices and costs for each (per unit) of the three products in FRW

Particular Per Unit	**Cakes FRW**	**Cookies FRW**	**Milkshakes FRW**
Selling price	5,400	4,900	6,000
Costs			
Ingredient Zen	300	600	1,500
Ingredient Chan	700	300	1,500
Another food additive	300	450	900
Total material cost	**1,300**	**1,350**	**3,900**
Labor at FRW1000 per hour	1,000	1,200	800
Variable overhead cost	500	600	400

Additional information:
Cake requires 3 units of Zen and 2 units of Chan while a cookie requires 2 units of Zen and 5 units of Chan.

The firm can only obtain 3400 units of Zen and 6500 units of Chan. There are 1200 available labor hours. The management has made a decision to drop Chan from any statistical analysis.

The expected demand for Cakes, Cookies, and Milkshakes for the month of June 2023 is 110,200; 980,000 and 25,000 units respectively. The fixed costs are projected to be FRW 300,000
Several months later, the demand for cakes and cookies increased significantly to 4,900,000 and 3,000,000 respectively per month. Due to climate change and labor shortage, Uwera limited management has made a decision to discontinue Milkshakes from its production line.

It was a hard decision to make. This will lead to layoffs and decommissioning of some production machines which were recently imported from France. Though these machines can be modified and used to produce dairy meal as suggested by Marie Mupenzi, the senior Management accountant. Marie Mupenzi now wants to calculate the optimal production plan for Cakes and Cookies for the coming month. She ran the data in Linqo statistical software which gave abnormal results.

Required

(**f)** Using the whole information, **formulate this problem into a linear programming model and draw it.** (8 Marks)

(g) From the graph, **identify the optimal point** (1 Mark)

(h) Calculate the maximum contribution (2 Marks)

Notes;

1. The change in product mix will not affect the cost structure of the three products
2. Make an analysis using only the existing products.

(i) Define the term external benchmarking as used in the context of manufacturing firms. (2 Marks)

(j) Explain the key steps which Uwera limited will likely follow in conducting external benchmarking (4 Marks)

(k) Discuss the key difficulties Uwera Limited will face in the process of conducting external benchmarking. (4 Marks)

(Total: 50 Marks)

SECTION B

QUESTION TWO

Kajuga construction limited is the oldest construction firm whose headquarter is based in the Gasabo district. The company has two divisions: The building construction division (BCD) and the Roads construction division (RCD). Each division is currently managed by a divisional manager who has the authority to spend a maximum of FRW 15,000,000 as capital expenses. This company has an employee base of 2,650 and its overall cost of capital is 12% p.a. Its chief executive officer is Mr. Gilbert Munyaneza. Gilbert is a qualified civil engineer trained at the Jaffa institute of building and construction based in Israel. Recently he attended a performance management seminar at Rubavu organized by the National Construction Authority of Rwanda. Among the tools of performance discussed in the seminar were;

1. Fitzgerald's and Moon`s building block model
2. Balanced scorecard
3. Traditional performance measures

Kajuga construction limited has won a tender to build 350 kitchens in schools based at Western province and 250 kitchens in Schools based at the Southern province. The following data has been provided in relation to each kitchen for each province

Particulars	**Southern province**	**Western province**
Quoted price FRW	30,000,000	35,000,000
Discount issued	3%	2.50%
Kitchens built	250	350
Cost per Kitchen		
	FRW	**FRW**
Bricks	7,500,000	6,800,000
Sand	2,000,000	2,000,000
Cement	3,850,000	3,100,000
Iron sheet	4,000,000	4,500,000
Other materials	500,000	700,000

Labor cost is based on 30% of material cost. Cement, sand, and iron sheets were bought at a discounted price of 5%,10% and 2.5% respectively. All costs are variable.

The total fixed cost for the year is FRW 380,000,000. One-half of these fixed costs relates to the Kitchen project apportioned based on the discounted total sales.

The use of cement cost is restricted by the Gilbert Munyaneza to FRW 3,000,000 per kitchen. The market price of each bag of cement FRW 12,500 and an iron sheet costs FRW 8,000. A standard kitchen utilizes 300 bags of cement. The maximum bags of cement and iron sheets available for the two projects are 10,000 bags and 9,000 respectively.

Required:

(a) Analyze the financial performance of each tender (10 Marks)

(b) Discuss the applicability of customer profitability (3 Marks)

(c) Explain reasons why conducting the analysis above is important to the financial well-being of Kajuga Limited. (2 Marks)

(d) Describe the business framework used to track and manage organizations strategy (3 Marks)

(e) Calculate the shadow price of each bag of cement using the information given above and give your comment. (7 Marks)

(Total: 25 Marks)

QUESTION THREE

Uwimana Chemical Ltd. (UCL) produces chemical Zed. The standard ingredients of 1 kilogram of Zed are:
0.60 kilograms of ingredient E @ FRW 40,000 per Kg
0.25 kilograms of ingredient F @ FRW 60,000 per Kg.
0.15 kilograms of ingredient G @ FRW 25,000 per Kg.

The following additional information is provided:

1. Production of 4,000 kilograms of chemical Zed was budgeted for October 2022.
2. The production of chemical Zed is entirely automated and production costs attributed to its production comprise only direct materials and overheads.
3. The production process works on a just-in-time inventory system and no ingredients or inventories of chemical Zed are held.
4. The overheads budgeted for the production of Zed in the month of October 2022 were as follows:

Activity	**Total amount (FRW)**
Receipt of deliveries from suppliers (Standard delivery quantity is 460 kilograms)	40,000,000
Dispatch of goods to customers (Standard dispatch quantity is 100 kilograms)	80,000,000
Total	120,000,000

5. In October 2022, 4,200 kilograms of Zed were produced and the cost details were as follows:

Materials used

2,840 kilograms of E, 1,210 kilograms of F, and 860 kilograms of G at a total cost of FRW 203,800,000.

Actual overhead costs

12 supply deliveries at a cost of FRW 48,000,000 and 38 customer dispatches at a cost of FRW 78,000,000 were made.

6. The budget team met recently to discuss the preparation of the cost control report for October 2022 and the following discussion took place:

Chief accountant: "the overheads do not vary directly worth output and are therefore by definition 'fixed'. They would be analyzed and reported accordingly".

Management accountant: "the overheads do not vary with output, but they are certainly not fixed. They should be analyzed and reported on an activity-based basis."

Required:

Having regard to this discussion,

(a) Prepare a variance analysis of the production costs of Zed in October 2022. (Separate the material cost variance into price, mixture, and yield components and the overhead cost variance into expenditure, capacity, and efficiency components using consumption of ingredient E as the overhead absorption base). (12 Marks)

(b) Prepare a variance analysis of the overhead production costs on Zed in October 2022 on an activity-basis. (8 Marks)

(c) Describe the steps you followed in computing material mix variance (5 Marks)

Note: Round you values to the nearest Rwanda Francs.

(Total: 25 Marks)

QUESTION FOUR

Urukundo Limited is a manufacturing company fully registered to do manufacturing and related activities in Rwanda. This company has two divisions; the soft drink and Liquor division. In the first half of the year 2023, the Liquor division is planning to launch a new product. Urukundo limited will invest FRW 50,000 million in a new machinery needed to manufacture the new product. The company will do a major marketing campaign on behalf of the Liquor division in support of the new product launch.

The company`s weighted average cost of capital is 12.5% and the return on investment is 16% The management accounting department believes that this is appropriate for both divisions. The divisional performance for two last years were as follows;

Particulars	**Soft drink division**		**Liquor division**	
	2022	**2021**	**2022**	**2021**
	FRW Million	**FRW Million**	**FRW Million**	**FRW Million**
Revenue	103,000	100,000	140,0000	125,000
Controllable costs	59,000	57,000	70,000	66,000
Traceable costs	13,000	12,000	31,000	16,000
Apportioned head office costs	17,000	14,000	21,500	18,000
Net capital investment	185,000	125,000	275,000	265,000

Additional information:

Expected sales from the new investment is FRW 45,500 million

Operating costs specific to the new investment are 80.5% of the cost of the new investment

Required:

(a) Using traceable profits determines the Return on investment for the two divisions for the years 2021 and year 2022 (2 Marks)

(b) Calculate the Residual income figures for the two years. (2 Marks)

(c) Comment on the effects of the new investment on the general financial soundness of Urukundo limited. (3 Marks)

(d) Global warming has become a global concern as seen in the last world environment meeting held in Egypt. **Briefly write notes on categories of environmental costs that a manufacturing firm can incur according to the concept of environment activity-based costing.** (3 Marks)

Muzehe Limited, an overseas division of Mukuru limited located in northern province has provided the following details.

Particulars	2022 FRW `000`	2021 FRW `000`
Operating profit	6,500,000	5,500,000
Interest expense	1,000,000	900,000

Further information is as follows:

1. The allowance for doubtful debts was FRW 300 million at 1 January 2021, FRW 250, Million at 31 December 2021 and FRW 350 million at 31 December 2022.
2. Research and development costs of FRW 500 million were incurred during each of the years 2021 and 2022 on Project Z. These costs were expensed in the income statement, as they did not meet the requirements of financial reporting standards for capitalization. Project Z is not yet completed.
3. At the end of 2020, the company had completed another research and development project, Project X. Total expenditure on this project had been FRW1,500 million none of which had been capitalized in the financial statements. The product developed by Project X went on sale on 1 January 2021, and the product was a great success. The product's life cycle was only two years, so no further sales of the product are expected after 31 December 2022.
4. The company incurred non-cash expenses of FRW 15 million in both years.
5. Capital employed (equity plus debt) per the statement of financial position was FRW 33, 500 million at 1 January 2021, and FRW 37, 000 million at 1 January 2022.
6. The pre - tax cost of debt was 5% in each year. The estimated cost of equity was 12% in 2021 and 14% in 2022. The rate of corporate income tax was 27% during both years.
7. The company's capital structure was 60% equity and 40% debt.

Required:

(e) Calculate economic value-added value (EVA) for year 2021 and 2022 (10 Marks)
(f) Calculate ROI for the year 2022 (2 Marks)
(g) Interpret the residual income of the year 2021 (3 Marks)

(Total: 25 Marks)

End of Question Paper

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