



UNIVERSITY
OF
JOHANNESBURG

Department of Accountancy
Financial Management 200

FMA200/BSR2000

SIXTH ASSESSMENT OPPORTUNITY

29 November 2016

Time: 225 minutes

Marks: 150

Assessors: Mrs E Kocks
Mrs M Strauss
Mr T Madiba
Mrs M McKenzie

Internal Moderator: Prof G Swartz
Mr L Maseko

INSTRUCTIONS:

- This paper consists of **13** pages (Including front page).
- Answer ALL questions.
- Start each question on a new page.
- Silent, non-programmable calculators may be used, unless otherwise instructed.
- Show all calculations clearly. Round all calculations to two decimal places.

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016

QUESTION 1

(35 MARKS)

PART A

(23 Marks)

Sihle's African Brewery (Pty) Ltd (hereafter SAB or "the company"), a microbrewer of craft beers, was incorporated in 2010 to service the ever growing consumer demand for alcohol-free beer. SAB produces 3 brews, all of which are produced in the same factory, using the same processes, but with each brew using different ingredients. The company sells only to retailers in bulk; there are no direct sales to individual customers.

Due to several competing microbreweries entering the market, SAB has been unable to increase prices for the third consecutive year. Over this same period, raw material costs have increased substantially due to the weak Rand to Dollar (ZAR/USD) exchange rate (for imported ingredients), as well as the continuing drought conditions in South Africa (for locally sourced ingredients). In order to remain competitive, the company recently upgraded its bottling department to a fully automated system, reducing direct labour costs substantially. The new bottling system has a capacity far larger than the company can presently utilise.

The following **budgeted information** reflects the new cost structure, at a normal capacity of 1 500 barrels of craft beer per annum. The company uses absorption costing.

| | Brewing department | Bottling department | Machinery maintenance | Materials storage |
|--|--------------------|---------------------|-----------------------|-------------------|
| Number of employees | 9 | 0 | 1 | 1 |
| Number of material requisitions | 145 | 55 | | |
| Value of machinery | R495 000 | R1 688 500 | | |
| Area occupied in the brewery (m ²) | 84 | 63 | 21 | 42 |
| Total manufacturing overheads | R1 985 000 | | | |
| Total non-manufacturing overheads | R4 142 500 | | | |

| | Brew #1 | Brew #2 | Brew #3 |
|--------------------------------|------------|---------------|--------------|
| Wholesale selling price | R17.50 | R11.50 | R26.00 |
| Hops used (raw material) | Pacifica | African queen | Amarillo hop |
| Cost of hops per 100 g (gram) | R50.00 | R69.10 | R123.10 |
| Malt used (raw material) | Amber malt | Caramalt | Black malt |
| Cost of malt per kg (kilogram) | R27.00 | R39.00 | R39.00 |
| Bottles brewed per annum | 216 000 | 240 000 | 24 000 |
| Direct labour cost per year | R388 800 | R439 200 | R50 400 |

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QUESTION 1 (Continued)

The following additional information is provided:

- **1 beer barrel is equal to 160 litres.** Craft beer is bottled in 500ml (milliliter) bottles. All three brews use the same bottle. The total cost of all bottles is budgeted at R960 000 per annum.
- Each barrel requires 22.5 kg of malt, and 375 g of hops (the rest of the ingredients are considered indirect and are included with overhead figures already provided).
- Direct labour is paid R50 per hour. Indirect labour is included in overhead figures already provided.
- It is proposed that primary overhead allocation is based on the area occupied in the brewery.
- None of the service departments provide any services to each other. The service departments (machinery maintenance and materials storage) were established solely to support the Brewing and the Bottling departments.
- Materials storage is based on the number of material requisitions.
- The Brewing department costs are allocated using labour hours, and the Bottling department costs using number of bottles produced.

REQUIRED:

- (a) Calculate the product cost of one 500 ml bottle of Brew #2, for stock valuation purposes. Hint: One of the steps required in order to calculate this, will be the preparation of the overhead analysis sheet. **(14)**

- (b) After analysing your cost calculations in (a), the sales manager made the following statement: "It is obvious that we are now selling Brew #2 at below manufacturing cost. We cannot increase our selling price; we should therefore discontinue production immediately."

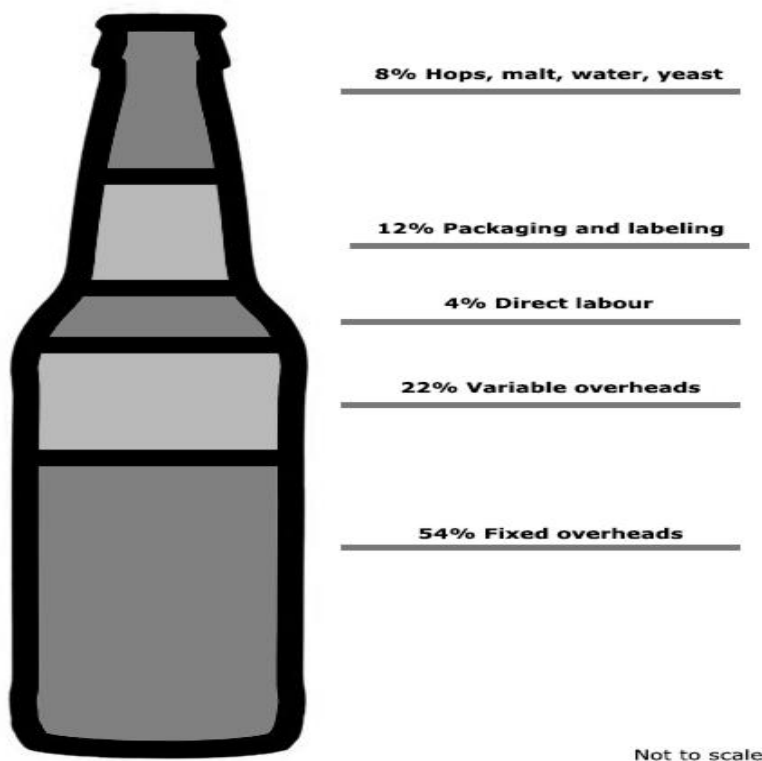
Critically evaluate the validity of the above statement. Your argument should include comments on the suitability of the proposed overhead allocation rates, as well as considering necessary tools for decision making.

(5)

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- (c) A recent market survey has indicated that a bottle of craft beer is, on average, 3.5 times more expensive than an equivalent commercial beer.

The infographic at the bottom shows a summary of what makes up the cost of a craft beer. Based on this infographic and your knowledge of cost behavior, explain why craft beer may be so much more expensive than commercial, mass-produced beer? **(4)**



FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 1 (Continued)****PART B****(12 Marks)**

SAB produces its craft beer in two production processes namely: Brewing and Bottling. The Brewing process starts with creating malt from barley, which is then transferred to the mash and lauter tuns. The lauter tun sieves and filters the rich, fermentable liquid (called wort) before sending it to the wort kettle for boiling. Newly hopped wort is sent to the fermenting cellar, where it remains before sending it to the Bottling process.

During the Bottling process, the bottles are added at the start of the process, and are inspected by a PVI machine. Labels are added at the 50% mark; and bottle caps are securely fastened at the 90% mark. All completed bottles that have reached this point are inspected. It is expected that 1% of all bottles that have reached inspection point (90%) would be rejected due to various inconsistencies including: labels not correctly inserted and caps not being properly secured.

As management accountant of SAB, you have been asked to calculate the cost per equivalent unit for the Bottling Department for the month of September 2016, based on the information as provided below:

| Costs incurred: | R |
|---|----------------|
| Transfers from the Brewing process | 218 880 |
| Bottles | 80 000 |
| Labels | 2 200 |
| Caps | 2 500 |
| Conversion costs | 183 600 |
| Opening work-in-progress | |
| - Brewing process | 12 900 |
| - Bottles | 6 200 |
| - Labels | 152 |
| - Caps | 170 |
| - Conversion costs | 9 150 |
| Production: | Bottles |
| Opening work-in-progress | 2 000 |
| Current month inputs (inclusive of the Brewing process) | 40 000 |
| Completed output | 37 000 |
| Closing work-in-progress | 4 000 |
| Wastage | ? |

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 1 (Continued)****Additional information**

- Opening work-in-progress is 100% complete, apart from the conversion costs which are 50% complete.
- Closing work in progress is 100% complete, apart from the conversion costs which are 70% complete.
- For the production bottles (as indicated above) – this figure has been provided in bottles for ease of calculation. However, this is the equivalent of the litres of non-alcoholic beer.
- The company uses the weighted average stock valuation method.
- Conversion costs are incurred evenly throughout the process.
- Wastage does not have a saleable value. However, the bottles relevant to this can be sold to home-brewers for R0.50 per bottle.
- Abnormal loss bottles do no share in the normal loss allocation.

REQUIRED:

- (d) Calculate the cost per equivalent unit for all costs by preparing an equivalent production unit schedule for the month ended 30 September 2016. **(12)**

For all calculations, round to the nearest two decimal places

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 2****(40 MARKS)**

Zoya Ltd operates a process which produces three joint products. In the period just ended, costs of production totaled R509 640. Output from the process during the period was:

Product W 276 000 kg; Product X 334 000 kg and Product Y 134 000 kg.

There was no opening stock for any of the three products. Products W and X are sold at the end of this process. Product Y is subjected to further processing during which it is converted to Product Z. Sales of Products W and X during the period were: Product W 255 000 kg at R0.945 per kilogram, and Product X 312 000 kg at R0.890 per kilogram.

128 000 kilograms of Product Y were further processed during the period. The balance of the period production of the three products W, X and Y remained in stock at the end of the period. The value of closing stock of individual products is calculated by apportioning costs according to weight of output.

The additional costs in the period relating to the further processing of Product Y were: Direct labour R10 850 and Production overhead R7 070.

96 000 kg of Product Z were produced from the 128 000 kg of Product Y. This is according to expectation.

A by-product, BP, is also produced when Y is converted into Z, and can be sold for R0.12 per kg. 8 000 kg of BP were produced and sold in the period.

Sales of Product Z during the period were 94 000 kg, with a total revenue of R100 110. Opening stock of Product Z was 8 000 kg, valued at R8 640. The FIFO method is used for pricing transfers of Product Z to cost of sales.

Selling and administration costs are charged to all main products when sold, at 10% of revenue.

REQUIRED:

- (a) Prepare a profit and loss account for the period, identifying separately the profitability of each of the three main products, as well as the total profit. **(18)**
- (b) Zoya Ltd has now received an offer from another company to purchase the total output of Product Y (i.e. before further processing) for R0.70 per kg. Calculate and discuss the viability of this alternative. **(5)**
- (c) Identify and briefly discuss the various methods of joint cost apportionment, including the advantages and disadvantages of each method. **(9)**
- (d) Describe the accounting treatment of by-products. **(2)**
- (e) Provide two reasons for allocating joint costs to individual products or services. **(2)**

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- (f) Managers must decide whether a product should be sold at split-off, or processed further. The sales value at split-off method of joint-cost allocation is the best method for generating the information managers need. Explain whether you agree with this statement. **(2)**
- (g) Managers should consider only additional revenues and separable costs when making decisions about selling now or processing further. Explain whether you agree with this statement. **(2)**

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 3****(35 MARKS)**

Exotic Flavour (Pty) Ltd (“EF”) is a potato chip manufacturer that was incorporated by Mr Piccard in 1998. He has been the sole shareholder and Chief Executive Officer (CEO) ever since. Mr Piccard believes that everyone has a responsibility towards the community, and EF thus strives to be a responsible corporate citizen, involved in several community projects. EF owns two manufacturing plants, one in Porterville that manufactures only small packets of chips, and the other in Hopefield, where only bigger packets of chips are manufactured.

The manufacturing process at the plant in Hopefield works as follows:

Potatoes are firstly sourced and then graded. One manager, two forklift drivers, and four unskilled labourers are involved in the **grading** process.

Suitable graded potatoes for use in chip manufacturing are then machine **washed** in a mixture of cleaning liquid, disinfectant and water. This mixture complies with health regulations.

The potatoes are then machine **peeled** to be ready for cutting.

The **cutting** machine cuts the potatoes into chips.

The chips are then ready to be **flavoured**. EF believes that they maintain a competitive advantage by selling several exotic flavoured chips.

These flavours include: Smoked Paprika, Cajun Chicken and Peri-Peri.

0,05 liter of flavourant is required per packet of chips. The Cajun Chicken flavourant cost R15 per liter.

Currently only the Cajun Chicken and Peri-Peri flavours are produced commercially. The Smoked Paprika was purchased on the spur of the moment. This line was withdrawn shortly thereafter, as there was no demand for this flavour of chips.

The flavourant is mixed with water and then sprayed over the unbaked chips.

The unbaked chips are then ready to be **baked**. The oven has a capacity of 200kg unbaked chips and chips are only baked if the oven is full.

The baked chips are then **packed** and ready for distribution. EF distributes the packets of chips to several cities in the Western Cape to several large retail chain stores.

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QUESTION 3 (Continued)

The financial manager calculated the cost of a packet of chips as follows:

| Cost Directly allocated | | |
|-------------------------|------|----------|
| | Note | R/Packet |
| Potatoes | 1 | 7.52 |
| Cleaning Liquid | | 0.05 |
| Disinfectant | | 1 |
| Flavour (see above) | | ? |
| Packet bags | 2 | 1.1 |
| Oven cleaning cost | 3 | ? |

| Other Costs | | |
|--------------------------------------|------|--------|
| | Note | R |
| Salaries | | |
| Grading manager | | 7 000 |
| Forklift drivers (each) | | 2 000 |
| Washing and peeling machine operator | | 3 000 |
| Production manager | 4 | ? |
| Water and Electricity | 5 | 15 000 |

These costs relate to the month of March, and you may assume that these calculations are correct.

Notes:

1. This cost represents direct material and labour costs relating to grading.
2. Included in this cost is a patent fee of R0.10 per printed bag, which is paid to the developers of the logo, as well as the cost of the bag used.
3. After every 8 baking sessions the oven is cleaned at a cost of R400.
4. The Production Manager performs a quality inspection after every baking session. This inspection takes 15 minutes. He earns R 120 per hour. He is however also responsible for continuous supervision throughout the entire process. His employment contract stipulates that a total of 160 hours per month should be worked.
5. The warehouse and manufacturing plant both use the same water and electricity supply.

Lights are permanently used throughout the plant. Machinery runs continuously. The movement in the electricity bill is mostly due to load shedding and maintenance on machinery, resulting in no electricity usage by the machinery during that time.

Besides the water used in the production process, the plant is also washed weekly.

Municipal bills were as follows:

| | Water bill (R) | Electricity bill (R) | Production (Packets) |
|----------|----------------|----------------------|----------------------|
| January | 8 000 | 4 600 | 6 000 |
| February | 7 000 | 4 400 | 4 000 |
| March | 10 000 | 5 000 | 10 000 |

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 3 (Continued)****Additional information:**

- Sales price per packet of chips, irrespective of the flavour, is R16 per packet.
- 100kg potatoes equals 40 packets (500g each) of dry potato chips.

REQUIRED:

- (a) Identify and explain the nature (i.e. cost behaviour) of the following costs with regards to EF's manufacturing process described above.
 - i. Electricity
 - ii. Water
 - iii. Oven Cleaning Cost
 - iv. Production Manager Salary **(4)**
- (b) Calculate the contribution per Cajun Chicken packet of chips. **(7)**
- (c) Calculate the total fixed cost for March relating to the Hopefield plant. **(4)**
- (d) Assuming that EF sells 1 Cajun Chicken packet for every 2 Peri-Peri packets and the contribution per packet is R 4.46 and R 4.97 respectively:
Calculate the Breakeven point of the Hopefield plant with reference to sales volume. **(5)**
- (e) Calculate the Breakeven point in sales value for EF and prove the correctness of your answer by illustrating zero profit. *Assume the same contributions given in (d) above for the two products.* **(5)**
- (f) Describe the differences between the accountant's and the economist's model for CVP analysis. **(5)**
- (g) Describe and distinguish between the three different approaches to presenting cost-volume-profit relationships in graphical format. **(5)**

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 4****(40 MARKS)**

Abalone Limited (hereafter referred to as “ABALONE”) is listed on the AltX, a division of the JSE Limited (JSE). Abalone is preparing a bid to acquire an unlisted rival, Swordfish (Pty) Ltd (hereafter referred to as “Swordfish”) in the same business sector. The summarised financial statements of the two companies are as follows:

Statement of Financial Position at 30 September 2016:

| | ABALONE Ltd |
|--------------------------------|--------------------|
| | R'm |
| Assets | |
| Non-current assets | 616 |
| Current assets | 84 |
| | <hr/> |
| | 700 |
| | <hr/> |
| Equity and liabilities | |
| Ordinary shares | 165 |
| Retained earnings | 115 |
| | <hr/> |
| | 280 |
| | <hr/> |
| Non-current liabilities | |
| 9% Medium term notes | 160 |
| 12% Long term loan | 220 |
| Current liabilities | 40 |
| | <hr/> |
| | 700 |
| | <hr/> |

ABALONE's corporate advisor has suggested that any acquisition be done on a cash basis, funded by debt. Ms Strauss, the financial director of ABALONE, believes that ABALONE's weighted average cost of capital needs to be determined before they proceed with negotiations.

FMA200 SIXTH ASSESSMENT OPPORTUNITY – 29 NOVEMBER 2016**QUESTION 4 (Continued)**

The following information was gathered:

Ordinary Shares

- ABALONE issued their ordinary shares at 50 cents each.
- The current share price of ABALONE is 455 cents per share and its equity has a beta coefficient of 1.25.
- ABALONE has maintained a dividend cover of 2.2 for the last three years – no change in the policy has been communicated.
- The current earnings per share is 80 cents and the earnings have grown at an average rate of 11% per year for the last three years, a rate considered sustainable for the foreseeable future.

Medium term notes

- The 9% medium term notes held by ABALONE are redeemable in eight (8) years' time.
- The notes are currently trading at 96.31% of the par value.
- The par value of the notes is R100.
- The notes will be redeemed at a 10% premium of the par value.

Long Term Loan

- Long term loans similar to that held by ABALONE currently have a market-related rate of 10,5%.
- The full capital on the ABALONE loan is repayable in two years' time.

Other relevant information:

- The market risk premium is 5.5%.
- The corporate tax rate is 28% and is expected to remain at this level for the foreseeable future.
- The yield on government bonds maturing in the long term is 8.5%.
- Round all numbers to two decimal places.
- The statement of financial position has been prepared on the historic cost basis.

REQUIRED:

- Identify and explain which sources of finance will be excluded from the cost of capital calculation. **(5)**
- Calculate the cost of capital of ABALONE as at 30 September 2016. **(30)**
- Discuss the advantages and disadvantages of debt and equity as sources of finance available to use for the planned acquisition. *(Include both term notes and long term loans in the debt discussion.)* **(5)**

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