

FACULTY OF BUSINESS

FINAL EXAMINATION

| Student ID (in Figures) | : | | | | | | | | | | | | |
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INSTRUCTIONS TO CANDIDATES

| 1. | This question paper | con | isists of 2 parts: |
|----|---------------------|-----|---|
| | PART A (70 marks) | : | Answer ONE (1) mini case study. Answers are to be written in the |
| | | | Answer Booklet provided. |
| | PART B (30 marks) | : | Answer THREE (3) out of FIVE (5) short answer questions. Answers are to |
| | | | be written in the Answer Booklet provided. |

- 2. Candidates are not allowed to bring any unauthorized materials except writing equipment. Electronic dictionaries are strictly prohibited.
- 3. Only ballpoint pens are allowed to be used in answering the questions.
- **WARNING:** The University Examination Board (UEB) of BERJAYA University College regards cheating as a most serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in accordance with the clauses stipulated in the Students' Handbook, up to and including expulsion from BERJAYA University College.

Total Number of pages = 10 (Including the cover page)

PART A : MINI CASE STUDY (70 MARKS)

INSTRUCTION (S) : Part A consists of **ONE (1)** mini case study. You are required to answer ALL questions in the Answer Booklet provided. All workings are to be shown in the Answer Booklet.

Harmony Engineering Inc. (Harmony) is a family run business in Lancaster since 1970 founded by John Moore specialising in building materials. In 1980, due to the need for raising fund for the expansion of the factory, he decided to convert the sole proprietor business to a private limited. This had made available for the company to apply bank borrowings for that purpose.

When John Moore first started the business in manufacturing the building materials, it was practically no competitors and he monopolised the whole building material market in Lancaster. He had no worry about setting the selling price as all builders or property developers would definitely purchase from him.

However in the late 1990, he saw many big or small players have started the same kinds of business and he realised that he should step down as the managing director of Harmony and passed the baton to his son, Jerry Moore who had a Bachelor degree in Economics and Finance. As John has been the founder of the company and he has vast experience in the industry, the board of directors has unanimously consented to appoint him as the chairman of Harmony.

On the other hand, Jerry waste no time and made a slew of key senior management changes in to order to drive the business growth and set the direction of the company. One of the changes that he made was to consolidate the products by discontinuing manufacture some of the unprofitable building materials particularly for one off order or smaller quantities order. These orders are mainly from his long-standing customers who have been with them since his father started the business. He has also brought in some high technology machineries at the production process in order to reduce the costs of the direct labour. After the revamping exercise, the company has managed to hit the desired sales target and profits. The most saleable and core building material products are JA118, GR988 and ZO168.

The three products are manufactured by using three production processes namely, Alpha Process, Beta Process and Omega Process. In addition, the production processes are serviced by three support departments: setup, handling charges and other overheads. Price is then calculated as total cost plus a 35% mark-up.

In recent years, Jerry Moore was very concerned about the performance and financial stability of the company as it found itself in choppy financial waters and was not able to achieve the budgeted sales and profits. Jerry could not comprehend why the products were unable to make a profit even though cost cutting measure has been carried out.

After reading an article about activity based costing (ABC) by Robert Kaplan, he was convinced that the ABC could be the solution to his problem. At the senior management meeting convened recently, Jerry voiced his predicament about the profits of the company as in long run, it would ultimately affect the cash flows and liquidity of the company to meet its working capital as well as to service the bank borrowings if no action is taken.

In the meeting, the finance director, Bernard Christin has some concern over the introduction of ABC system. He argued: 'I very much doubt whether selling product JA118 and GR988 are viable since we are not able to compete with our competitors in terms of pricing. Furthermore, I'm also doubtful about product ZO168 has been selling below than the competitors' pricing. However, I am not convinced that ABC system would tell us any more than assessing the viability of each product. I personally believe that the current system of absorbing overhead costs using different basis of hours have been accurately costed'.

The marketing director, Donald Tham argued: 'I am in the process of negotiating a major new contract with a building construction company, Santiago Ltd for the product JA118, GR988 and ZO168. For such a big order they will not pay our normal prices but we need to at least cover our incremental costs. I am not convinced that ABC would achieve this as it merely averages costs for our entire production.'

Jerry Moore argued: 'I concern that the current costing could be distorted especially the factory overhead costs incurred in the production department and support department. Therefore, we are potentially using the incorrect absorption basis to absorb the factory overhead costs to products. ABC system would be an improvement but it still has its problems. For instance, if we carry out an activity many times surely we get better at it, and costs fall rather than remain constant. Similarly, some costs are fixed and do not vary either with labour hours or any other cost driver. He is opined that one of the support departments, other overheads could be further analysed as the costs do not vary to the current basis of allocation'.

The chairman, John Moore argued: 'I cannot see the problem. The overall profit for the company is the same no matter which method of allocating overheads we use. It seems to make no difference to me. Anyway, we seriously have to look into this problem and take into all factors internal and external of what has gone wrong. I would probably agree with Jerry to implement the ABC if it can prove that the current costing is distorted. Bernard, as you are the finance person, you are now given the task to look into the implementation of ABC and prepare a management report which contains a comprehensive detailed analysis of the current costing and ABC. We shall convene our meeting in a month's time'.

Bernard was skeptical whether ABC would make any different. However, as the chairman, John has agreed to the implementation of ABC, he has no choice but to go along with it.

Harmony operates three support departments (Setup, Handling and Other Overhead) and three production departments (Alpha Process, Beta Process and Omega Process). The support department costs are allocated directly to the production department based the allocated percentage provided and the production departments are then absorbed either on machine hours, equipment hours or direct labour hours. These hourly basis have been used to absorbed the support department overheads to the processes of the production departments. Bernard has been using this basis of overhead absorption since the time John was then the managing director.

| | \$ |
|------------------------|---------|
| Production department: | |
| Alpha process | 61,000 |
| Beta process | 54,800 |
| Omega process | 25,000 |
| | |
| Support department: | |
| Set-up costs | 42,900 |
| Handling charges | 45,600 |
| Other overhead costs | 50,700 |
| Total | 280,000 |

The following are the existing breakdown of overhead costs:

It has been a practice that the costs incurred in the production departments are treated as direct costs and the support departments are allocated to the production department using the following basis:

| | Alpha process | Beta process | Omega process | Total |
|-----------------|---------------|--------------|---------------|-------|
| Setup | 45% | 45% | 10% | 100% |
| Handling | 60% | 30% | 10% | 100% |
| Other overheads | 55% | 40% | 5% | 100% |

The following information is available for the basis of overhead rate for each of the production departments:

| Allocation basis | Alpha process | Beta process | Omega process | Total |
|---------------------------|---------------|--------------|---------------|--------|
| Total machine hours | 6,000 | 11,500 | 4,000 | 21,500 |
| Total direct labour hours | 2,500 | 1,000 | 7,400 | 10,900 |
| Total equipment hours | 6,500 | 500 | 1,800 | 8,800 |

| | JA118 | GR988 | ZO168 |
|-------------------------------|---------|---------|---------|
| Production (metres) | 10,000 | 10,000 | 10,000 |
| | | | |
| Direct material per meter | \$16.00 | \$15.00 | \$12.00 |
| Skilled worker: | | | |
| Direct labour hours per meter | 2.5 | 1.5 | 0.25 |
| Direct labour paid | \$16.00 | \$16.00 | \$16.00 |
| Unskilled worker: | | | |
| Direct labour hours per meter | 3.0 | 2.5 | 0.25 |
| Direct labour paid | \$5.00 | \$5.00 | \$5.00 |
| Fauipment hours | 3 | 2 | 0.5 |
| Machine hours | 2 | 1 | - |
| Direct labour hours | 5.5 | 4 | 0.5 |

At the same time, the following product cost information is prepared for the analysis:

After thorough analysis, Bernard and his task force realised that the current costing has been too simplify and they have identified the following which could explain the reason why the current product costs are distorted:

(i) The other overhead costs of \$50,700 identified at the support department could be further broken down as follows:

| | \$ |
|------------------------|--------|
| Production scheduling | 10,500 |
| Production engineering | 27,400 |
| Maintenance | 12,800 |
| Total | 50,700 |

(ii) The costs incurred in the production departments that are treated as direct costs could be more accurately allocated if these costs are traced based on the following:

| Alpha Process | Equipment hours |
|---------------|---------------------|
| Beta Process | Machine hours |
| Omega Process | Direct labour hours |

| Department | Allocation basis | JA118 | GR988 | ZO168 |
|------------------------|---------------------|-------|-------|--------|
| Alpha process | Equipment hours | 880 | 1,640 | 6,280 |
| Beta process | Machine hours | 1,500 | 2,000 | 18,000 |
| Omega process | Direct labour hours | 1,635 | 545 | 8,720 |
| Set-up costs | Number of setup | 15 | 15 | 270 |
| Handling charges | Number of movements | 20 | 20 | 400 |
| Production scheduling | Machine hours | 1,400 | 800 | 13,800 |
| Production engineering | Direct labour hours | 200 | 800 | 7,000 |
| Maintenance | Maintenance hours | 750 | 750 | 13,500 |

(iii) The following activity cost driver has been identified for the implementation of ABC:

The marketing director, Donald Tham is very concerned about the contract with Santiago Ltd and if Harmony is able to secure this contract, it would potentially generate total revenue to the company of \$40 million annually.

Santiago Ltd is a company listed on the London stock exchange and the company is one of the largest property developers eyeing estimated sales of \$1 billion in annual property sales for the next two years at least. Santiago Ltd is always price sensitive and they only award the contract to any building material suppliers who could provide them the best price.

Looking at the current pricing, Donald is skeptical that they would be able to secure the contract and it is anticipated that they would lose out to their close competitor, Downham Engineering.

Downham Engineering has been a fierce competitor to Harmony. In the past, they have always won the contract for product JA118 and GR988 providing the same standard of quality. However, they are always willing to let go product ZO168 because Harmony charged a lower selling price.

In a separate meeting between the managing director and chairman, Jerry rationalised: 'if the analysis of product profitability shows that the product ZO168 ranks the lowest profitability as compared to product JA118 and GR988, and the ABC system reveals a higher costing, then it is wiser to forgo the product ZO168. That's the reason why I am trying to justify to the management that the ABC system would tell the truth picture about the product costing. With the understanding of the costing and how products consume the activities, at least the products pricing would not be over or under costed. Importantly, a decision has to be made whether to lower the selling price in order to secure the contract or to use the ABC's selling price and maintaining the same mark-up so that it won't jeopardize the profit margin'.

Jerry anticipated that with the implementation of ABC system, he hopes to achieve the following:

- (i) Concentrate products that will yield a better profit margin.
- (ii) Discontinue product ZO168 if it is found to be over-costed.
- (iii) Improve the bottom line of the company.

(All prices and rates are to be rounded up to 2 decimal places. For others are to be rounded up to the nearest whole number)

Required

- 1. Using the traditional approach to assigning factory overhead costs to product:
 - a) Allocate the support department costs to production department. Calculate the factory overhead rate for each production department using the current basis of absorption.

(6 marks)

- b) Assign the factory overhead costs using the factory overhead rate for product JA118, GR988 and ZO168. (6 marks)
- c) Calculate the unit product costs for the three products. (6 marks)
- 2. The ABC team has identified and combined major activities of a facility's production process into a single activity. Describe **FOUR** (4) categories of production activities introduced by Robert Kaplan.

(8 marks)

- 3. Using the activity based costing, complete the following requirements:
 - a) Calculate the cost driver rates for each of the activity cost pools. (4 marks)
 - b) Using the cost driver rates calculated in (3a), assign the factory overhead costs for the three products. (6 marks)
 - c) Based on the results of (3b), calculate the unit product costs for the three products. (6 marks)
- As part of the information required in the management report, prepare the total product costs for the three products under the traditional costing system and ABC system highlighting the difference in the report. Indicate which product is over costed or under costed. (9 marks)
- 5. In the management report, Discuss **TWO** (2) reasons why the two methods reported in Question (4) above produced different product costs. (6 marks)
- Given the company's markup policy, calculate the selling price under the traditional costing system and activity based costing system.
 (6 marks)
- Based on the selling price obtained in Question (6), propose whether Harmony Engineering Inc. will be able to secure the contract with Santiago Ltd for the production of the three products. State your justification. (7 marks)

[Total 70 marks]

END OF PART A

PART B : SHORT ANSWER QUESTIONS (30 MARKS)

INSTRUCTION (S) : There are **FIVE (5)** questions in this section, answer only **THREE (3)** questions. Write your answers in the Answer Booklet(s) provided. The total marks allocated for each of the questions are shown within brackets.

QUESTION 1

The differences between management accounting and financial accounting reports suggest differences in the information needs of managers and those of other users. While differences undoubtedly exist, there is also a good deal of overlap between the information needs of both.

Required

- a) Outline FOUR (4) key differences between management accounting and financial accounting.
- b) Outline **THREE** (3) factors that influence a company's demand for management accounting information. (6 marks)

[Total 10 marks]

(4 marks)

QUESTION 2

David Norton and Robert Kaplan developed the balanced scorecard, a management tool that integrates performance measures to guide operations toward achieving an organisation's strategy.

Required

- a) Discuss the purpose of a balanced scorecard and how it differs from the traditional financial performance measurement. (4 marks)
- b) Describe any **ONE** (1) perspectives of the balanced scorecard and provide an example of the measures for each of the four perspectives. (6 marks)

[Total 10 marks]

QUESTION 3

In a highly competitive environment, strategic management accounting emphasises the importance of managing costs at different phases of a product from pre-production phase, production phase and right to the post production phase.

Required

- a) Briefly describe **ONE** (1) of the following management accounting tools and techniques:
 - (i) Target costing
 - (ii) Kaizen costing
 - (iii) Life cycle costing

(7 marks)

 b) Identify which management accounting tools in part (a) that could be applied in different phases of a product. (3 marks)

[Total 10 marks]

QUESTION 4

The managing director of Jewel Limited has asked you to prepare a report suitable for senior management, to assist in its understanding of management accounting. He has suggested that senior management need clarification on the topic of cost terms and their importance and application in management accounting

Required

Define **TWO** (2) of the following commonly used cost terms in management accounting:

- a) Direct and indirect costs
- b) Variable and fixed costs
- c) Product and period costs

Illustrate your answer with **ONE (1)** example each.

[Total 10 marks]

QUESTION 5

DJL Ltd makes a standard model of camera drones which it sells to mining, construction and surveying companies for \$200.00 each. Next year the company plans to make and sell 5,000 camera drones.

The following presents the cost structure:

| Manufacturing costs: | |
|---------------------------------------|-------------------|
| - Direct materials | \$90.00 per drone |
| - Direct labour | \$14.00 per drone |
| - Other variable overheads | \$12.00 per drone |
| - Fixed overheads | \$80,000 per year |
| Administrative and selling overheads: | |
| - Variable | \$3.00 per drone |
| - Fixed | \$60,000 per year |

Additional information:

The company proposed to acquire high technology machineries in the manufacturing process in order to cater the increasing demands of drones in the overseas market. However, such acquisition would change the manufacturing cost structure.

It is projected that the change would increase the total fixed costs by \$10,000 and a reduction of total variable costs by \$28.00 per drone.

Required

- a) Calculate the break-even point for next year expressed both in quantity and value. (3 marks)
- b) Calculate the margin of safety for next year expressed both in quantity and value. (2 marks)
- c) Advise the management, using supporting calculations such as break-even point, whether to proceed with the acquisition of the new machineries. Justify your answer. (5 marks)

[Total 10 marks]

END OF QUESTION PAPER