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Serial No... ..

Society of Certified Management Accountants of Sri Lanka

Professional II Stage Pilot paper

Instructions to candidates:

1. Time allowed is **three (3) hours**.
2. Answer **all** questions in **Section A**, **any two (2)** questions from **Section B** and **any one (1)** question from **Section C**
3. Answers should be entirely in the **English language**.

| <u>Subject</u> | <u>Subject Code</u> |
|--|---------------------|
| Strategic Management Accounting | (SMA) |

Section A

Question No: 1 (40 Marks)

G Limited makes electric water pumps. It is the market leader in making water pumps for the local market. The engine division makes the engines and supplies them to Assembly Division where the pumps are assembled. G Limited is a successful and profitable company that attributes much of its success to decentralized operating style. Each division manager is compensated on the basis of division operating income.

The Assembly Division currently acquires all its engines from the engine division. The Assembly Division manager could purchase similar engines in the market for Rs. 40,000 each.

The Engine Division is currently operating at 80% of its capacity of 4,000 units and has the following costs:

| | |
|---|----------------|
| Direct materials (Rs. 12,500 per unit * 3,200units) | Rs. 40,000,000 |
| Direct manufacturing labour (Rs. 5,000 per unit * 3,200units) | Rs. 16,000,000 |
| Variable manufacturing overhead costs (Rs. 25 per unit * 3,200 units) | Rs. 8,000,000 |
| Fixed manufacturing overhead costs | Rs. 52,000,000 |

All the Engine Division's 3200 units are currently transferred to the Assembly Division. No engines are sold in the out side market.

The Engine Division has just received an order for 2,000 units at Rs. 37,500 per engine that would utilize half the capacity of the plant. The order must either be taken in full or rejected. The order is for slightly different engine than what the engine division currently makes, but it takes

the same amount of manufacturing time. To produce the new engine would require direct materials per unit of Rs. 10,000, direct manufacturing labor per unit of Rs. 4,000 and variable manufacturing overhead costs per unit of Rs. 2,500.

1. From the viewpoint of the G Ltd as a whole, should the Engine Division accept the order for the 2,000 units? Show your computations. (08 marks)
2. What range of transfer prices will result in achieving the actions determined to be optimal in requirement 1 if division managers act in decentralized manner. (04 marks)
3. The manager of the Assembly Division has proposed a transfer price for the engines equal to the full costs of the engines, including an allocation of overhead costs. The engine division allocates overhead cost to engines on the basis of the total capacity of the plant used to manufacture the engines.
 - a) Calculate the transfer price for the engines transferred to the Assembly Division under these arrangements. (04 marks)
 - b) Do you think that the transfer price calculated in requirement 3 (a) will result in achieving the actions determined to be optimal in requirement 1 if division managers act in decentralized manner. (04 marks)
 - c) Comment in general on one advantage and one disadvantage of using full cost of the producing division as the basis for setting transfer prices. (04 marks)
4. Now consider the effect of income taxes.
 - a) Suppose the assembly division is located in a state that imposes a 10% tax on income earned within its boundaries (Lowered tax), and the Engine division is located in a state that imposes no tax on income earned within its boundaries (BOI). What transfer price would be chosen by the G Limited to minimize state income tax payments for the company as the whole? Assume that only transfer prices that are greater than or equal to full manufacturing costs and less than or equal to the market price of “substantially similar” engines are acceptable to the tax authorities. (06 marks)
 - b) Suppose that the G Limited announces the transfer price computed in requirement 4 (a) to price all transfers between the Engine and Assembly division. Each division manager then acts autonomously to maximize division-operating profit. Will division managers acting in a decentralized manner achieve the actions determined to be optimal in requirement 1? Explain. (05 marks)
 - c) Consider your responses to requirements 1 through 4 and assume the Engine division will continue to have opportunities for outside business as described in requirement 1. What transfer pricing policy would you recommend G Ltd, and why? Would you continue to evaluate division performance on the basis of division operating profits? Explain? (05 marks)

(Total 40 Marks)

End of section A

Section B

Answer any two questions

Question No: 2 (20 Marks)

Chartered Management Bank (CMB) is examining the profitability of its select banking account, a combined savings and current account. Depositors receive a 7% annual interest rate on their average deposit. CMB earns an interest rate spread of 3% (the difference between the rate at which it lends money and the rate it pays depositors) by lending money for housing loan purposes at 10%. Thus CMB would gain Rs. 6,000 on the interest spread if depositor has an average select banking account balance of RS. 200,000 in 2006 (Rs. 200,000 * 3% = Rs. 6,000).

The select banking account allows depositors unlimited use of services such as deposits, withdrawals, current accounts, and foreign currency drafts. Depositors with select banking account balances of Rs. 100,000 or more receive unlimited free use of services. Depositors with minimum balances of less than Rs. 100,000 pay Rs. 2,000-a-month service fee for their select banking account.

CMB recently conducted an activity –based costing study of its services. It assessed the following costs for six individual services. The uses of these services in 2006 by three customers were as follows:

| Details | Activity-Based cost per Transaction (Rs.) | Account Usage | | |
|--|---|---------------|--------|------------|
| | | Ranjith | Ram | Raheem |
| Deposit/withdrawers with teller | 250.00 | 40 | 50 | 5 |
| Deposit/withdrawal with (ATM) | 80.00 | 10 | 20 | 16 |
| Deposit/withdrawals on pre-arranged basis | 50.00 | 0 | 12 | 60 |
| Bank Cheques written | 10.00 | 9 | 3 | 2 |
| Foreign currency drafts | 120.00 | 4 | 1 | 6 |
| Inquiries about account balance | 150.00 | 10 | 18 | 9 |
| Average premier account balance for 2006 (Rs.) | | 110,000 | 80,000 | 25,000,000 |

Assume Ranjith and Ram always maintains the balance above Rs. 100,000, whereas Raheem always has a balance below Rs. 100,000.

You are required to:

3. Compute the 2006 profitability of the Ranjith, Ram and Raheem's premier accounts at CMB? (09 marks)
 2. What evidence is there of cross-subsidization among the three premier accounts? Why might Chartered Management Bank (CMB) worry about this cross-subsidization if the Premier Account product offering is profitable as a whole? (07 marks)
 3. What changes would you recommend for CMB's premier accounts? (04 marks)
- (Total 20 marks)**

Question No: 3 (20 Marks)

Designer Group is investigating the financial viability of a new product X. Product X is a short-life product for which a market has been identified at an agreed design specification. It is not yet clear whether the market life of the product will be six months or 12 months.

The following information is available in respect of product X:

- 1) Sales should be 10,000 units per month in batches of 100 units on a just-in-time production basis. An average selling price of Rs.120,000 per batch of 100 units is expected for a six month life cycle and Rs.105, 000 per batch of 100 units for a 12 month life cycle.
- 2) An 80% learning curve will apply in months 1 to 7 (inclusive), after which a steady state production time requirement will apply, with labour time per batch stabilizing at that of the final batch in month 7. Reductions in labour requirements will be achieved through natural labour turnover. The labour requirement for the 1st batch in month one will be 500 hours at Rs.500 per hour.
- 3) Variable overhead is estimated at Rs.200 per unit.
- 4) Direct material input will be Rs.50,000 per batch of product X for the first 200 batches. The next 200 batches are expected to cost 90% of the initial batch cost. All batches thereafter will cost 90% of the batch cost for each of the second 200 batches.
- 5) Product X will incur directly attributable fixed cost of Rs.1,500,000 per month.
- 6) The initial investment for the new product will be Rs.7,500,000 with no residual irrespective of the life of the product.

A target cash in flow required over the life of the product must be sufficient to provide for:

- a) The initial investment plus 33 1/3% thereof for a six month life cycle, or
- b) The initial investment plus 50% thereof for a 12 month life cycle.

Note: Learning Curve formula

$$Y = ax^b$$

Where y = average cost per batch
a = cost per initial batch
x = total number of batches
b = learning factor (-0.3219 for a 80% learning curve)

You are required to

- a) Prepare detailed calculations to show whether product X will provide target cash inflow over six months and/or 12 months? (13 marks)
- b) Prepare a report to the management which:
 - (i) Explains why the product X proposal is an example of a target costing/ pricing situation? (03 marks)
 - (ii) Suggest specific actions which may be considered to improve the return on investment where a six month product life is forecast? (04 marks)

(Total 20 Marks)

Question No: 4 (20 Marks)

ABC Ltd is considering a new product with a three year life. The product can be made with the existing machinery, which has spare capacity, or buy a labour-saving specialized new machine which would have a disposal value of 10% of the original cost of the machine after four years.

The following estimates have been made at current prices:

| | | |
|--------------------------------|---|----------------------------|
| Sales volume | - | 1 million units per annum. |
| Selling price | - | Rs.150/- per unit. |
| Labour costs (without machine) | - | Rs.60/- per unit. |
| Material costs | - | Rs.20/- per unit. |
| Variable overheads | - | Rs.20/- per unit. |

Additional fixed overheads for the new product are estimated to be Rs.30 million per year. The new machine will cost Rs.50 million and would halve the labour cost per unit.

The economists at ABC Ltd anticipate inflation to be as follows:

| | | |
|---------------------|---|-----|
| General Price Index | - | 2% |
| Labour costs | - | 12% |
| Material | - | 8% |
| Overheads | - | 8% |

The company can claim capital allowances on the machine at 25% on reducing balance. The company pays corporation tax at 30%. The tax is generally payable one year in arrears. The company's before tax money cost of capital is 15.75%.

You are required to:

- To calculate the NPV of the new product assuming ABC uses the existing machinery? (06 marks)
- To calculate the NPV assuming that the new machine is purchased? (10 marks)
- To recommend what action should be taken, and to comment on your recommendation? (04 Marks)

(Total 20 Marks)

End of section B

Section C

Answer one question only

Question No: 5 (20 Marks)

The traditional performance measurements based on Return on Capital Employed (ROCE) and Residual Income (RI) has been severely criticized by Academics & Practitioners due to their inherent weaknesses.

Balance Score Card approach and Economic Value Added (EVA) concepts have been commonly discussed amongst many as alternatives to ROCE and RI.

You are required to:

- a) Discuss the drawbacks of ROCE & RI specially focusing on the lack of goal congruence? (06 marks)
 - b) Discuss the concepts of Economic Value Added (EVA) and the advantages of Economic Value Added (EVA) approach to performance evaluation? (06 marks)
 - c) Explain how Balance Score Card could be used as a measure of performance measurement with particular emphasis on non-financial performance factors. (08 marks)
- (Total 20 Marks)**

Question No: 6 (20 Marks)

- a) Consider the operation of a fast-food company with hundreds of retail-outlets scattered around the country. Identify the management accounting information needs for the following:
 - i) The manager of a local fast-food outlet that prepares food and serves it to customers who walk-in or pick it up in a drive-through window;
 - ii) The regional manager who supervises the operations of all the retail outlets in a larger region
 - iii) Senior management (Chairman and the Managing Director) located at the company's corporate head-quarters. (06 marks)
- b) Consider the operation of a hospital. Identify the management accounting information needs for the following:
 - i) The manager of a patient unit where patients stay while being treated for illness or while recuperating from an operations;
 - ii) The manager of a nursing service, who hires and assign nurses to all patient units and to specialty services such as the operating room, emergency room, recovery room and radiology room
 - iii) The Chief Executive Officer of the Hospital (06 marks)
- c) You are required to discuss the essential elements of a good Strategic Management Accounting Information System (SMAIS) (08 marks)

(Total 20 Marks)

End of section C

End of question paper
