

Series 4 Examination 2010

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**CERTIFICATE IN MANAGEMENT ACCOUNTING**

**Level 3**

**Tuesday 7 December**

Subject Code: 3724 S

Time allowed: **3 hours**

**INSTRUCTIONS FOR CANDIDATES**

- Answer **all 5** questions.
- All questions carry equal marks.
- Write your answers in blue or black ink/ballpoint. Pencil may be used only for graphs, charts, diagrams, etc.
- Begin your answer to each question on a new page.
- All workings must be shown.
- All answers must be correctly numbered but need not be in numerical order.
- You may use a calculator provided the calculator gives no printout, has no word display facilities, is silent and cordless. The provision of batteries and their condition is your responsibility.

## QUESTION 1

A company can manufacture 30,000 units of its single product per period when operating at full capacity. Costs incurred in a period at full capacity are:

	\$
Direct materials	257,400
Direct labour	191,100
Variable overheads	136,500
Fixed overheads	<u>210,600</u>
	<u>795,600</u>

It can be assumed that total direct costs and total variable overheads vary in proportion to activity, and that total fixed overheads remain unchanged, over the relevant range of activity.

### REQUIRED

- (a) At a selling price for the product of \$31.20 per unit, and 65% capacity utilisation in a period, calculate the:
- (i) total cost of direct materials; (2 marks)
  - (ii) total cost per unit; (3 marks)
  - (iii) total profit for the period; (3 marks)
  - (iv) break-even point (in units); (4 marks)
  - (v) margin of safety (expressed as a percentage); (2 marks)
  - (vi) total sales (in units) required to earn a profit of \$117,000. (3 marks)
- (b) Briefly explain the meaning of relevant range of activity in the context of cost-volume-profit analysis. (3 marks)

**(Total 20 marks)**

## QUESTION 2

A company manufactures and sells three products. The selling price and variable costs of the products are as follows:

	<b>Product X</b>	<b>Product Y</b>	<b>Product Z</b>
	\$ per unit	\$ per unit	\$ per unit
Selling price	15.42	26.84	13.56
Direct materials:			
Material A	4.60	6.90	2.30
Other materials	2.64	4.22	2.73
Direct labour	4.50	6.75	6.00

Maximum available supplies of Material A (costing \$11.50 per kilo) and hours of direct labour (paid at \$15.00 per hour) are expected to be 7,400 kilos and 8,500 hours respectively in the coming period. There are sufficient quantities of other materials available.

The sales forecast for the coming period is as follows:

Product X	5,600 units
Product Y	7,500 units
Product Z	8,200 units

### REQUIRED

For the coming period:

- (a) Determine the limiting factor (Material A or direct labour), showing clearly your workings. (7 marks)
- (b) Prepare a production schedule that will maximise contribution and calculate the amount of the contribution. (13 marks)

**(Total 20 marks)**

### QUESTION 3

The following information is extracted from the balance sheet of a retail company at the end of a recent period:

	<b>\$000</b>
Stock	730
Trade debtors	624
Cash at bank	52
Trade creditors	<u>( 878 )</u>
<b>Net current assets</b>	<b><u>528</u></b>

The company earned a constant gross profit ratio of 35% on sales of \$2,920,000 (all on credit) for the period.

Assume that 1 year = 365 days.

#### REQUIRED

- (a) Calculate the following working capital ratios:
- (i) current (2 marks)
  - (ii) acid test (quick) (2 marks)
  - (iii) stock turnover (number of times) (4 marks)
  - (iv) debtors payment period (number of days) (2 marks)
- (b) Comment briefly on the liquidity of the company. (3 marks)
- (c) Calculate the effect of each of the following changes on each relevant balance sheet item (**\$ change** and **revised \$ total**):
- (i) reducing the level of stock by the equivalent of 30 days' sales (4 marks)
  - (ii) reducing the period of credit granted to customers by 18 days. (3 marks)

**(Total 20 marks)**

#### QUESTION 4

A company budgeted to produce and sell 12,500 units of its single product at a selling price of \$32.50 per unit during Period 5. The following information is extracted from its standard cost card for Period 5:

		<b>\$ per unit</b>
Direct material	(0.5 kilo × \$25.20 per kilo)	12.60
Direct labour	(0.4 hour × \$12.80 per hour)	5.12
Fixed production overhead	(0.4 hour × \$16.45 per hour)	6.58

Actual results for the period were as follows:

Production	13,600 units
Sales (12,750 units)	\$367,200
Direct material (6,520 kilos)	\$138,550
Direct labour (5,100 hours)	\$69,360
Fixed production overhead	\$91,180

The stocks of raw material were unchanged during the period.

#### REQUIRED

- (a) Calculate the actual gross profit for Period 5. (3 marks)
- (b) Calculate the following variances for Period 5:
- (i) sales price (2 marks)
  - (ii) sales volume profit (3 marks)
  - (iii) direct material price (2 marks)
  - (iv) direct material usage (2 marks)
  - (v) direct labour rate (2 marks)
  - (vi) direct labour efficiency (2 marks)
  - (vii) fixed overhead expenditure (2 marks)
  - (viii) fixed overhead volume (2 marks)

**(Total 20 marks)**

## QUESTION 5

The following details relate to a proposed capital investment project:

Investment of \$2,000,000 in new plant and equipment would be required at the beginning of the project (Year 0).

The forecast of net operating cash inflows is as follows:

	<b>\$000</b>
Year 1	360
Year 2	640
Year 3	820
Year 4	1,150
Year 5	830

Initial working capital of \$250,000 would be required at the beginning of the project. Further working capital of \$30,000 per annum would be required from the end of Year 1 until the end of Year 4. The total working capital would be released at the end of the project (Year 5). The plant and equipment would have no residual value after 5 years and the straight-line method would be used to depreciate it.

The cost of capital used to evaluate capital investment projects is 15% per annum.

Discount factors:	Year	5%	10%	15%	20%	25%
	1	0.952	0.909	0.870	0.833	0.800
	2	0.907	0.826	0.756	0.694	0.640
	3	0.864	0.751	0.658	0.579	0.512
	4	0.823	0.683	0.572	0.482	0.410
	5	0.784	0.621	0.497	0.402	0.328

### REQUIRED

- (a) Calculate, in relation to the capital investment project, the:
- (i) accounting rate of return, based on the capital employed in Year 0; (5 marks)
  - (ii) net present value; (6 marks)
  - (iii) internal rate of return. (3 marks)
- (b) Advise the company, with reasons, whether it should undertake the project, based on the net present value and internal rate of return in part (a). (2 marks)
- (c) Briefly describe the limitations of the accounting rate of return as a method of evaluating investment projects. (4 marks)

**(Total 20 marks)**