

Series 2 Examination 2007

CERTIFICATE IN MANAGEMENT ACCOUNTING

Level 3

Monday 2 April

Subject Code: 3023

Time allowed: **3 hours**

INSTRUCTIONS FOR CANDIDATES

- Answer **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 is deciding whether to invest in new machinery to enable the production and launch of a new product.

REQUIRED

- (a) Describe briefly the steps that you would take to carry out a discounted cash flow appraisal of the financial viability of the investment. (8 marks)
- (b) Explain why companies calculate a weighted average cost of capital for use in capital investment project appraisal. (6 marks)
- (c) Describe how risk may be incorporated into the capital investment project appraisal process. (6 marks)

(Total 20 marks)

QUESTION 2

The following standards relate to the processing of a single raw material to produce a finished product:

Raw material price	£4.50 per kg
Direct labour rate	£8.20 per hour
Loss of raw material weight in processing	10%
Processing time	10kg of output per direct labour hour

24,000 kgs of the raw material, costing £109,680, were input to the production process during a period. 21,744 kgs of output was completed. There was no work-in-progress at either the beginning or the end of the period. 2,100 direct labour hours were worked at a cost of £17,178.

REQUIRED

- (a) Calculate the following total variances for the period:
- (i) direct materials (4 marks)
- (ii) direct labour (3 marks)
- (b) Analyse each of the total variances, calculated in answer to part (a), in as much detail as possible from the information provided. (8 marks)

In some circumstances the raw material usage variance can be sub-divided into mix and yield variances.

REQUIRED

- (c) (i) What manufacturing circumstances are necessary to make the calculation of a material mix variance appropriate? (2 marks)
- (ii) State a formula for the calculation of the material mix variance. (3 marks)

(Total 20 marks)

QUESTION 3

Product Z is manufactured in a continuous process. Relevant data for the period just ended is listed below:

Opening work-in-progress	£2,820 (1,000 units complete as to materials: 60% complete as to conversion costs)
Closing work-in-progress	1,400 units (complete as to materials: 40% complete as to conversion costs)
Output	13,200 units
Raw materials used	£25,840
Conversion costs	£21,714

No losses occur in the process.

The first-in, first-out (FIFO) method is used to apportion costs between periods.

REQUIRED

- (a) Calculate for the period just ended:
- (i) the equivalent units of production for each element of cost; (4 marks)
 - (ii) the production cost per equivalent unit; (3 marks)
 - (iii) the cost of the 13,200 units completed; (5 marks)
 - (iv) the cost of the closing work-in-progress. (3 marks)
- (b) Reconcile the input and output costs for the period i.e. demonstrate that the cost of opening work-in-progress + period costs = cost of output + cost of closing work-in-progress. (2 marks)

Losses occur in some manufacturing processes.

REQUIRED

- (c) Distinguish between normal and abnormal losses. (3 marks)

(Total 20 marks)

QUESTION 4

A company can manufacture 5,000 units of its single product per period when operating at full capacity. Costs incurred in a period when working at full capacity are:

	£000
Direct materials	17.0
Direct labour	13.7
Variable overheads	5.9
Fixed overheads	<u>15.3</u>
	<u>51.9</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

At a selling price for the product of £11.90 per unit, and 75% capacity utilisation in a period, calculate the:

- (a) direct material cost (£ total); (2 marks)
- (b) total cost (£ per unit); (4 marks)
- (c) contribution/sales ratio (% to one decimal place); (3 marks)
- (d) margin of safety (sales units); (5 marks)
- (e) profit (£ total); (3 marks)
- (f) sales revenue required to earn a profit of £6,000. (3 marks)

(Total 20 marks)

QUESTION 5

A company is preparing budgets for the year ahead. The company manufactures and sells three products (Products A, B and C). Budgeted sales for the year, and expected finished goods stockholding at the beginning of the budget year, are:

	Sales (units)	Finished goods stock (units)
Product A	210,000	9,200
Product B	320,000	8,200
Product C	129,000	7,500

The company plans to reduce the finished goods stockholding of each of Products A and B by 10% by the end of the budget year. The stockholding of Product C is planned to represent 1 month's sales at the end of the budget year.

The company uses five types of raw material (RM1, 2, 3, 4 and 5) in the manufacture of the three products. Standards set for the budget year are:

	Standard price	Standard usage		
	(£ per kg)	in Product A (kg per unit)	in Product B (kg per unit)	in Product C (kg per unit)
RM1	9.40	1	1	2
RM2	12.00	-	1	-
RM3	4.60	2	3	3
RM4	8.30	-	1	1
RM5	6.90	3	-	2

Expected stockholding of raw materials at the beginning of the budget year is:

	kg
RM1	42,300
RM2	14,240
RM3	89,750
RM4	31,030
RM5	28,200

No change is planned to the stockholding of raw materials RM2, RM3 or RM4 over the budget period. A gradual stock reduction of 20% is to be budgeted for both RM1 and RM5.

REQUIRED

- (a) Prepare the following budgets for the year:
- (i) production (units of each product); (6 marks)
 - (ii) raw material usage (kg of each raw material); (6 marks)
 - (iii) raw material purchases (kg of each raw material); (4 marks)
- (b) Calculate the average investment (£) in raw material stock during the period. (4 marks)

(Total 20 marks)

QUESTION 6

Working capital ratios and requirements are to be calculated on the basis of the following financial statements of a trader:

Year-end Balance Sheet (extract):

	£000	£000
Fixed assets (net book value)		190
Net current assets:		
Stock	136	
Debtors	105	
Bank	28	
Creditors	<u>(92)</u>	<u>177</u>
		<u>367</u>

Trading Statement for the year:

	£000
Sales (all on credit)	1,326
Cost of sales	<u>832</u>
Gross profit	<u>494</u>

Assume: 1 year = 364 days = 52 weeks

REQUIRED

- (a) Calculate the following working capital ratios:
- (i) Current; (2 marks)
 - (ii) Acid test (quick); (2 marks)
 - (iii) Debtor payment period (number of days); (3 marks)
 - (iv) Stock turnover (number of times). (3 marks)
- (b) Comment briefly on the liquidity of the business. (2 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 one week's sales; (4 marks)
 - (ii) increasing the period of credit granted to customers by two weeks. (4 marks)

(Total 20 marks)