



Examiner's report

MA1 Management Information

For CBE and Paper exams covering January to June 2016

General Comments

The examination consists of 50 objective test questions, each worth 2 marks. The purpose of this report is to provide illustrations of questions which have especially posed problems for candidates.

The three sample multiple-choice questions below cover different aspects of the syllabus. The approach to correctly answering each question is explained and the common incorrect approaches, along with the misunderstandings which they indicate, are highlighted. Answering objective test questions requires candidates to have both a clear understanding of the subject matter being examined and a logical approach.

Sample Questions for Discussion

Example 1

Direct labour hours worked in a cost centre in a period were 360 hours above the budget of 5,670 hours. The efficiency ratio in the period was 97%.

Would the capacity and production volume ratios in the period be above or below 100%?

	Capacity ratio	Production volume ratio
A	Below 100%	Below 100%
B	Below 100%	Above 100%
C	Above 100%	Below 100%
D	Above 100%	Above 100%

This question tests candidates' understanding of production labour ratios (efficiency, capacity and production volume) and the linkage between them i.e.

$\text{efficiency (standard hours} \div \text{actual hours)} \times \text{capacity (actual hours} \div \text{budgeted hours)} = \text{production volume (standard hours} \div \text{budgeted hours)}$.

In this question from a given % for efficiency in a period, along with details of hours worked, candidates were required to determine whether each of the other two production labour ratios would be above or below 100%.

The correct answer is Option D. As labour hours worked in the period are above budget then the capacity ratio ($\text{actual hours} \div \text{budgeted hours}$) will be above 100%. If a total of 6,030 hours ($5,670 + 360$) were worked in a period at 97% efficiency then the standard hours of work were 5,849 ($6,030 \times 0.97$). As this is above the budgeted hours of 5,670 then the production volume ratio ($\text{standard hours} \div \text{budgeted hours}$) is also above 100%. Alternatively, the capacity ratio can be calculated as 106.3% [$(6,030 \div 5,670) \times 100$] and the production volume ratio as 103.1% [$(5,849 \div 5,670) \times 100$] or [$(0.97 \text{ efficiency} \times 1.063 \text{ capacity}) \times 100$].

Whilst Option D was the most popular option chosen by candidates a significant proportion selected each of the other three options indicating a widespread lack of understanding of this topic.

Example 2

A company's single product has the following costs:

	\$ per unit	\$ per unit
Production costs:		
Direct	4.60	
Variable overhead	0.80	
Fixed overhead	<u>2.70</u>	8.10
Non-production costs:		
Variable overhead	0.50	
Fixed overhead	<u>1.40</u>	<u>1.90</u>
		<u>10.00</u>

Marginal costing is used for the preparation of profit statements. In the last period, sales were 8,400 units, at \$11.20 per unit, and production was 8,530 units.

What was the total contribution in the period?

- A \$26,040
- B \$48,720
- C \$43,753
- D \$44,520

This question tests candidates' understanding of marginal costing and the calculation of contribution which is a fundamental aspect of this costing method. Contribution is the difference between sales revenue and variable costs (both production and non-production). It is the contribution towards covering fixed costs and providing some profit.

In this question, contribution per unit of the single product is \$5.30 [sales revenue \$11.20 – (variable production costs \$5.40 + variable non-production overhead \$0.50)]. This then needs to be multiplied by the units sold to calculate the total contribution for the period which is \$44,520 (8,400 units sold @ \$5.30 per unit contribution). The correct answer is Option D.

A common misconception amongst a significant proportion of candidates is that contribution is calculated by deducting only the variable production costs from sales revenue (\$11.20 - \$5.40 = \$5.80 per unit). This was Option B (8,400 units × \$5.80 per unit = \$48,720) which was as popular as the correct option.

Option C was also equally as popular as Options B & D. The error here is that the total variable costs per unit are multiplied by the production units, rather than by the sales units, before being deducted from the sales revenue [(8,400 units × \$11.20) – (8,530 units × \$5.90) = \$43,753]. This fails to match the variable cost of sales with the sales revenue which is a fundamental accounting concept.

Option A was also selected by a significant proportion of candidates. This option calculates the gross profit (sales revenue less production cost of sales) rather than the contribution. The gross profit per unit is \$3.10 (\$11.20 - \$8.10) and the total gross profit is \$26,040 (8,400 units @ \$3.10 per unit).

Example 3

Product P3 requires 0.4 litres of material M5 per unit. Inventories are planned to change during period 6 as follows:

Product P3: decrease of 200 units

Material M5: increase of 150 litres

6,000 units of product P3 are planned to be produced in period 6.

What is the planned usage of material M5 in the production of product P3 in period 6?

- A** 2,400 litres
- B** 2,550 litres
- C** 2,250 litres
- D** 2,320 litres

This question tests candidates' ability to calculate the planned usage of a material in production over a period given planned changes in both product and material inventories.

The correct answer is Option A. The amount of material M5 that will be used in the period depends upon how much of product P3 is to be produced and how much of the material is required per unit. Both of these figures are given in the question and, therefore, the planned changes in the product P3 and material M5 inventories are irrelevant. The answer is 6,000 units × 0.4 litres per unit = 2,400 litres.

Options B, C & D were all selected by a significant proportion of candidates. Both B & C adjusted the figure in Option A by the 150 litres planned change in the material M5 inventory. Option B in fact calculated the purchases required of material M5 in the period (2,400 + 150 = 2,550 litres) rather than the usage. Option C (2,400 – 150 = 2,250 litres) would have calculated the purchases if the material M5 inventory change had been a decrease rather than an increase.

Finally, Option D adjusted the planned production for the change in the product P3 inventory [(6,000 – 200 units) × 0.4 litres per unit = 2,320 litres]. This would have been a correct adjustment if the 6,000 units figure given in the question had been the planned sales units rather than the planned production.

Summary

The three multiple-choice questions illustrated in this report reveal a number of misunderstandings, confusion or a lack of knowledge amongst candidates regarding the particular topics being examined. In many cases this may be symptomatic of a more widespread problem which can only be overcome by a rigorous study program and by practicing objective test questions. Candidates



preparing for future examinations should try to ensure that they develop a clear understanding of the different areas of the syllabus, read questions carefully and think logically when answering them.