



Examiner's report

F5 Performance Management

December 2017

General comments

The F5 Performance Management exam is offered in both computer-based (CBE) and paper formats. The structure is the same in both formats but our model of delivery for the CBE exam means that candidates do not all receive the same set of questions. In this report, the examining team share their observations from the marking process to highlight strengths and weaknesses in candidates' performance, and to offer constructive advice for future candidates.

- Section A objective test questions – we focus on two specific questions that caused difficulty in this sitting of the exam
- Section B objective test case questions – here we look at the key challenge areas for this section in the exam
- Section C constructed response questions - here we provide commentary around some of the main themes that have affected candidates' performance in this section of the exam, identifying common knowledge gaps and offering guidance on where exam technique could be improved, including in the use of the CBE functionality in answering these questions.

Section A

It was very pleasing to see that once again almost all candidates attempted all of the questions. Section A questions aim to provide a broad coverage of the syllabus, and future candidates should aim to revise all areas of the F5 syllabus, rather than attempting to question spot. The following two questions are reviewed with the aim of giving future candidates an indication of the types of questions asked, guidance on dealing with exam questions and to provide a technical debrief on the topics covered by the specific questions selected.

Sample Questions for Discussion

Here we take a look at two Section A questions which proved to be particularly difficult for candidates.

Example 1

The standard costs and revenues of Log Co.'s only product are as follows:

	\$ per unit	
Sales price	60	
Direct materials		12
Direct labour	15	
Variable production overhead	3	
Fixed production overhead	<u>15</u>	
Profit	<u>15</u>	

Fixed overheads are absorbed on budgeted production and sales of 10,000 units per year. Sales staff receive a sales commission of 5% of sales revenue.

What is Log Co.'s margin of safety (to the nearest whole %)?

- A** 80%
- B** 50%
- C** 44%
- D** 55%

What does this test?

- ✓ The calculation of a margin of safety %

What is the correct answer?

- ✓ The correct answer is **C**
 - In order to calculate the margin of safety, the break-even point must first be calculated. The break-even point is calculated by dividing fixed costs by the contribution per unit. In this example fixed costs are budgeted to be \$150,000 (10,000 units x \$15 per unit) and the contribution per unit is \$27 (\$60 - \$12 - \$15 - \$3 - \$3) which would give a break-even point of 5,556 units. Note: in the contribution calculation includes the deduction of the 5% sales commission as this is a variable cost related to the sales price. The margin of safety % is then calculated by (budgeted sales units – break-even sales units)/budgeted sales units therefore in this example (10,000 – 5,556)/10,000 = 44%.
 - Selecting option A would have been based on calculating the margin of safety as a % of the BEP units i.e. 4,444/5,556
 - Selecting option B meant that the sales commission had been missed in the calculation of the contribution per unit
 - Selecting option D meant that both the variable production overhead and the sales commission had been missed in the calculation of the contribution per unit

Example 2

A company has a target mark-up of 25% and sells into a competitive market where the market price is \$120 per unit. The company's current costs per unit are \$46 for variable costs and \$60 for fixed costs, and it has a budgeted output of 10,000 units.

What is the minimum production required to close the target cost gap?

- A** 11,778 units
- B** 13,636 units
- C** 11,042 units
- D** 12,000 units

What does this test?

- ✓ The calculation of a target cost and cost gap, and the implication for production decisions.

What is the correct answer?

✓ The correct answer is **D**

- First of all, the target cost needs to be calculated; the market price is \$120 and the company has a target mark-up of 25% therefore the target cost is $\$120/125\% = \96 . Of this target cost \$46 is variable, leaving \$50 which can be fixed. The current budgeted fixed cost is \$600,000 (10,000 units x \$60) so if these are to be absorbed at \$50/unit then the minimum production must be 12,000 units.
- Selecting option A meant that the target cost was calculated based on a 25% margin rather than a mark-up i.e. $\$120 \times 75\% = \90 . The total costs were calculated to be \$1,060,000 ($\$106 \times 10,000$ units) and then divided by the \$90 so the variable costs were not removed from the \$90 either.
- Selecting option B meant that the target cost was also calculated based on a 25% margin but the variable costs were deducted which left an incorrect fixed cost of \$44. The total fixed costs were calculated correctly at \$600,000 but were divided by \$44.
- Selecting option C calculated the target cost correctly at \$96 but did not adjust for the variable costs. The total costs of \$1,060,000 were then divided by the \$96.

Section B

Section B tests students' knowledge on a topic in more detail than section A, with three case questions of 5 two-mark objective test questions. The range of topics covered in the December 2017 examination was:

- Costing
- Pricing
- Learning curves
- Short-term decisions
- Budgeting

A few key points that came out of section B were:

- Read the case scenario and requirements very carefully. This goes for the whole exam, but any objective test question is 'all or nothing' – if you misread the requirement or miss a vital piece of information from the scenario and get the answer incorrect you score zero for that question. This applies also to instructions on how to round your answers.
- Cover the whole syllabus. The list above should highlight this – F5 has a large syllabus which can be daunting, but it is essential to have a broad knowledge. If, for example, a section B case covering learning curves comes up and you haven't covered this in your studies, the 10 marks available are left to chance.
- Be able to apply your knowledge of theories/techniques to the scenario given as in the case questions these areas will often be examined in the context of the case. It is important that you are able to apply the logic of a concept or theory to a problem and so you need to understand the method and why you are doing the calculations and not just focus on how to do the calculations.

Section C

Candidates were presented with questions drawn from the areas of:

- Performance management and measurement
- Divisional performance measurement and transfer pricing
- Budgeting and control
- Risk and uncertainty

Performance management and measurement

This area was examined in two of the questions in December 17's diet, once within a private company context and once within a public sector/not-for-profit organisation context.

Considering the former first, the question was similar to Jungle Co from December 2016's published exam. As is usual with these questions, the marks available for calculations were stated in the question so that candidates could be guided as to how much time should be spent making calculations. Some candidates performed well on this question, producing good commentary and linking information in the scenario in order to analyse the company's financial performance. There were several different items included in 'cost of sales' and stronger candidates discussed each of these individually rather than trying to make sweeping comments about cost of sales in general. Weaker candidates tended to focus on making general comments about the decline in gross or net profit margin, but this was insufficient as the level of analysis of both cost of sales and expenses needed to be more detailed than this. On the whole, there were different reasons for the changes in each of the different line items so it was not possible to generalise. As an additional point, candidates should note that where, for example, salaries are increased mid-way through the year by a certain percentage e.g. 5%, you would only expect to see a 2.5% increase in the salaries figure in that year since the change occurred mid-year. This level of detail is often ignored by weaker candidates.

General errors on these performance analysis questions continue to be of the following nature:

- Offering movement calculations in absolute \$ terms rather than percentages
- Inability to calculate a percentage accurately
- Making general comments without adding any value e.g. "miscellaneous costs are increased and should be investigated"
- Providing far too many calculations for the six marks available, and having a pre-determined list of ratios to produce. In one recent question, the classic ROCE appeared regularly in candidates' answers even though there was no capital employed information provided.

The other performance measurement question in the December 2017 diet focused more on non-financial performance measurement and assessment of the extent to which an organisation was meeting a pre-defined set of objectives. The requirement clearly asked candidates to use the objectives to structure their answers. However, many failed to do this and, as a result, didn't answer the requirement. When guidelines are given as to how to structure an answer, these are there to help candidates stay focused in their answers; they should not be ignored.

Divisional performance and transfer pricing

There were two questions on this area in the December 17 diet. This area is examined under section D of the syllabus, which covers a variety of possible requirements including both calculations of and explanations for different transfer pricing bases and different divisional performance measures (return on investment and residual income).

One question related to transfer pricing; questions in this area are generally less popular with students, although it has been examined a number of times over recent years, including in June 2017. The format of the question has varied each time. Students are expected to understand the aims of a transfer pricing system and the problems which can arise if a system is not working as it should be. They are also expected to calculate suitable transfer prices and produce profit statements when required. It is important to read the 'content' in the requirement. For example, being asked the 'aims' of a transfer pricing system is not the same as describing the 'benefits' of a good one.

Preparing profit statements for businesses with a divisionalised organisational structure includes adequately dealing with internal and external transactions and recognising the fact that internal transactions are included in the divisions' profit statements but not in the company's profit statement. A columnar format is the best way to present profit statements and will generally lead to less mistakes being made. The use of spreadsheets in CBE exams should really aid candidates when answering these questions, as formulae, for example, can be copied across from one column to the next. However, as is often the case, candidates do not always make use of formulae and simply type totals into cells. When a formula is used, markers can see the formula to understand how a candidate has worked out a number. It is then not always necessary to show every working for every number, like paper based exams require. However, where candidates do not use formulae and also fail to show workings, it becomes impossible to allocate marks when they have made an error because the point at which an error took place cannot be identified.

In any transfer pricing question, it is important to read the wording of the scenario carefully to identify what the maximum production levels of the supplying divisions are. In this most recent transfer pricing question, the supplying division had the opportunity to increase supply levels to the buying division without this affecting its own supplies outside the group. This was because it had sufficient capacity to meet all the demand. However, a significant number of candidates fail to read the questions properly and therefore make incorrect calculations.

Another question focused on divisional performance measures and generally these questions seem to pose fewer difficulties for candidates. Requirements sometimes ask for calculations of ROI and RI for two divisions of the same company, with some accompanying discussion. However, they may also ask, for example, for ROI and RI calculations for one division following a particular investment decision. Often, in both scenarios, the outcome will show that using these measures can lead to dysfunctional decision-making, with candidates being asked to identify this and discuss it. If the scenario is that of an investment decision, then the calculation of the 'profit' figure for ROI and RI will require an adjustment for depreciation. Mistakes are often made here, with some candidates ignoring depreciation altogether.

As regards the discussion around ROI and RI, if a question asks for an explanation of the advantages and disadvantages of RI or ROI, it is not sufficient to simply write a list of bullet points. There needs to be some level of detail here. Also, it is important to address the requirement, specifically whether it is asking for discussion of ROI or RI or both. Although there are some advantages/disadvantages that are common to both of them, not all of them are.

Budgeting and control

There were two questions covering this area from Section C of the syllabus. The first of them was a classic 'sales mix and quantity' variance question requiring calculations and was similar to 'Valet Co' from June 2014's published exam. The usual errors that arise in these types of questions are:

- Lack of knowledge of the requested variances, often providing price and volume variances instead of mix and quantity.
- Using selling prices or contribution figures when asked for profit variances or selling prices/profit figures when asked for contribution variances.
- Over complicated and lengthy calculations for the standard contribution/profit for each product.
- Completely unnecessary actual profit/contribution calculations – these have no role in assessing the performance of a sales team, so this simply wasted valuable exam time.

Part (b) of the published Valet Co asked for a description of each of the variances calculated in part (a). This is often a common requirement in such questions, the purpose being to ensure that students show an understanding of what they are calculating. It is worrying to see that even those candidates that get such calculations 100% correct are sometimes unable to say what the calculations mean. Candidates should note that these small requirements can often be quite generic in nature and are not asking about the company in question's performance. They are the 'easy marks' in the question and could be attempted first.

In the published Valet Co, candidates were asked to discuss 'SALES performance'. Please be reminded that, in such questions, marks will not be available for discussing costs. Many marks are lost because candidates don't answer the actual requirement.

The second question on this area covered activity-based budgeting. It was a balance of some straight-forward knowledge requirements testing activity-based budgeting and some basic calculations. Even though the question was not technically difficult, it proved challenging for candidates, presumably because they are less familiar with these types of questions. Candidates should note that using activities as a basis for budgeting is very similar, easier really, than using them for costing. Instead of working out individual product costs, questions of this nature could focus on calculating production requirements and comparing these to the resources available. For example, a question might ask candidates to calculate the number of machine set-ups that are possible each week within a business and then compare this to the number required to produce a particular number of each product each week.

Risk and uncertainty

Section B of the syllabus examines dealing with risk and uncertainty in decision-making. Amongst other things, this section involves calculating expected values and using other techniques, such as maximax and maximin, to make decisions. An example of one such question would be June 2011's 'Cement Co.' In Cement Co, candidates were asked to prepare a pay-off table and then make decisions based on the decision rules of maximin, maximax and expected values. Whilst December 17's CBE question on this area was obviously not the same as Cement Co, there were some similarities.

Questions in this area often require a little bit of thought and planning. However, many candidates in this diet seemed to dive into doing calculations all over the spreadsheet with little thought for what the scenario had asked them to do. Once again, there was also a tendency to type totals into cells rather than use formulae and then markers were unable to see what the workings were.

Common errors in these risk and uncertainty questions include:

- Not providing data in a pay-off table if asked to provide one
- Failing to identify that some costs could possibly relate to sales quantities, rather than production quantities
- Failing to properly take into account whether there are any production losses which could affect supply levels, which can sometimes be stated in a question
- Failing to realise that no profit can ever be made from unsatisfied demand

Candidates generally seem more comfortable with applying the decision rules of maximax and maximin than calculating expected values, however, candidates need to make sure that they justify their answers when asked to. It is not enough to just state the supply level that a business should choose using each of the different criteria without explaining why that is the correct supply level.

This area also includes the minimax regret criterion which is a little more complicated than maximax and maximin. A common error that candidates seem to make with minimax regret is the adding up of the regrets for each supply level. The basis for minimax regret is identifying the maximum regret at each supply level and then choosing the supply level with the lowest maximum. At no point should the regrets in each column be totalled up.

Further points on exam technique on CBE and paper exams

As always, exam technique is an important aspect of success in any exam. Throughout this report the importance of reading and interpreting requirements very carefully has been reiterated many times; failure to do this is often the cause of poor scores. The tendency for some candidates is to answer the question that they want to get rather than answering the question which they have been given.

As the number of candidates sitting F5 by CBE continues to grow, two potential points arise. Firstly, it takes a little more effort to make sure that the requirements are properly broken down when reading them as they can be split over several screens. So, at the start of an answer, candidates should do a small plan in which they have broken down a requirement and asked themselves how many things they are being asked to do, making sure that they consider all

aspects of the requirement. Secondly, however, it is easier to be more focussed when answering a question using word processing skills and spreadsheets, as the mere fact that you can see more clearly what you have written helps avoid the temptation to discuss issues which are irrelevant. Also, if you realise that you have missed a point out from an earlier part of a question, it is easier to go back and insert it in the correct place.

Guidance and Learning Support resources to help you succeed in your exam

Preparing for the F5 exam may appear daunting but there are many resources available to help you. There are many technical articles available on the topics in this report. In addition, all the past exams referred to are available for your use. You should refer to these throughout your studies. Please make sure that you visit the ACCA's website and look at everything available to you. There are also plenty of support materials to help you feel confident about taking your exams on CBE.

<http://www.accaglobal.com/uk/en/student/exam-support-resources/fundamentals-exams-study-resources/f5.html>