Examiner's report

F5 performance management
December 2014

General Comments

There were two sections to the examination paper and all of the questions were compulsory. Section A consisted of 20 multiple choice questions (two marks each) which covered a broad range of syllabus topics. Section B had three shorter questions (worth 10 marks each) and two longer questions (worth 15 marks each). These questions covered all of the key syllabus areas.

This is the first examiner's report since the introduction of the new exam format and question types.

The following paragraphs report on each section and focus on some of the key learning points.

Specific Comments

<u>Section A</u>

It was pleasing to see that the majority of candidates attempted all of the questions. Candidates preparing for the next examination of F5 are advised to work through the sample questions discussed here and to carefully review how each of the correct answers were derived. The following two questions are reviewed in detail with the aim of giving future candidates an indication of the types of questions asked, guidance on dealing with these exam questions and to provide a technical debrief on the topics covered by the specific questions selected.

Example 1

A linear programming model has been formulated for two products, X and Y. The objective function is depicted by the formula C = 5X+6Y, where C = contribution, X = the number of product X to be produced and Y= the number of product Y to be produced.

Each unit of X uses 2 kg of material Z and each unit of Y uses 3 kg of material Z. The standard cost of material Z is $2 per kg.

The shadow price for material Z has been worked out and found to be $2.80 per kg.

If an extra 20 kg of material Z becomes available at $2 per kg, what will the maximum increase in contribution be?

A Increase of $96
B Increase of $56
C Increase of $16
D No change

Solution

By definition, a shadow price is the amount by which contribution will increase if an extra kg of material becomes available. In this question, the shadow price is $2.80 per unit and therefore if 20 kgs of additional material Z becomes available, the increase in contribution would be $56 (20 x $2.80). The answer is therefore B.

In the first distractor A, the cost of the material (20kg x $2) has also been added to the $56. This is because a common mistake made is to add the cost of the material in too.

Similarly, in distractor C, the $40 has been deducted from the $56 leaving a figure of $16. This is because candidates often fail to realise that the shadow price is the amount over and above the normal cost that one would be prepared to pay for an extra unit of scarce material if it becomes available. Therefore, this would lead

candidates to think that contribution would only increase by $0.80 ($2.80-$2) for each extra kg of material Z that becomes available resulting in a total increase in contribution of only $16.

The final distractor, D, 'no change' is there to identify candidates who don't understand shadow prices at all.

Example 2

Tree Co is considering employing a sales manager. Market research has shown that a good sales manager can increase profit by 30%, an average one by 20% and a poor one by 10%. Experience has shown that the company has attracted a good sales manager 35% of the time, an average one 45% of the time and a poor one 20% of the time. The company's normal profits are $180,000 per annum and the sales manager's salary would be $40,000 per annum.

Based on the expected value criterion, which of the following represents the correct advice that Tree Co should be given?

A Do not employ a sales manager as profits would be expected to fall by $1,300.
B Employ a sales manager as profits will increase by $38,700.
C Employ a sales manager as profits are expected to increase by $100
D Do not employ a sales manager as profits are expected to fall by $39,900.

Solution

In order to answer this question it is necessary to start by calculating the new profit figures at an increase of 30%, then 20% and finally 10%. Once these figures have been calculated the expected value of profits can be calculated by applying the three probabilities of 35% (good sales manager), 45% (average one) and 20% (bad one.) Once the expected profit figure has been calculated the salary cost of a new manager then needs to be deducted from it. Then, this expected net profit figure can be compared to the existing profit figure of $180,000 to then decide whether the manager should be employed. Hence, the calculations are as follows:

New profit figures before salary paid:
Good manager: $180,000 x 1.3 = $234,000
Average manager: $180,000 x 1.2 = $216,000
Poor: $180,000 x 1.1 = $198,000

Expected value of profits = (0.35 x $234,000) + (0.45 x $216,000) + (0.2 x $198,000) = $81,900+ $97,200 + $39,600 = $218,700.
Deduct salary cost and expected net profit with manager = $178,700

Since the company's current profits are $180,000, the decision is therefore that the manager should not be employed as his employment would cause profits to fall by $1,300. So, the answer is A.

Distractor B would be selected by candidates who have forgotten to deduct manager's costs from the expected profit of $218,700. With this omission, they would therefore advise the company to employ manager as profits will then increase by $38,700.

Distractor C would be selected by candidates who calculated an expected value based on profits of $140,000 instead of $180,000 i.e. they incorrectly deducted the manager's costs at the start. Therefore their calculations would be as follows:

Good manager: $140,000 x 1.3 = $182,000
Average manager: $140,000 x 1.2 = $168,000
Poor manager: $140,000 x 1.1 = $154,000

Expected value of profits = (0.35 x $182,000) + (0.45 x $168,000) + (0.2 x $154,000) = $63,700+ $75,600 + $30,800 = $170,100.
Deduct salary cost and expected net profit with manager = $140,100
Therefore employ manager as profits will increase by $100 if comparing to the $140,000.

Distractor D is similar to C and would be selected by candidates who compared the $140,100 to $180,000 and advised the company not to employ the manager as it would cause profits to fall by $39,900.

Section B

Question One

This was a ten mark question examining learning curves and rates. In part (a) candidates were asked to calculate a price for a new seat. This part was worth 5 marks. Candidates had to work out the incremental time it took to make the 8th seat as this was the point at which the learning curve stopped. This part of the question was answered well, with the majority of candidates scoring full marks. Where errors were made, it was usually because a candidate had forgotten to multiply up the cumulative average time for 7 units and then for 8 units, and then work out the incremental time for the 8th unit by taking the difference between these two totals. Instead the difference between the cumulative average time for 7 units and the cumulative average time for 8 units was calculated, without first multiplying up these figures by the number of units.

Part b (i) asked for a calculation of the actual rate of learning that took place in the period. Although this hasn't been examined before answers on the whole were very good with many candidates getting the calculation correct. A common problem, however, was to correctly work out the actual rate of 70% but then to say that this meant that the learning rate was slower than the originally expected rate of 75%. Candidates should note that when the percentage decreases, it means that the learning force has learnt more quickly than anticipated.

Part b (ii) asked for a brief explanation of whether the adjusted price would be higher or lower than the original price calculated in part (a), taking into account the actual learning rate calculated in b (i). It was a simple requirement that just required candidates to interpret their answer in b (i) a little bit more. Most candidates answered this well. It should be noted that the requirement did NOT ask candidates to calculate the new price so if this was done no mark was awarded for this calculation. If a requirement says 'explain' then an explanation must be given in order to earn marks. A calculation cannot replace an explanation.

Question 2

This ten mark question tested throughput accounting. Part (a) was a 4 mark discussion question asking for a brief explanation of why the senior stylists' time had been described as the 'bottleneck activity', with some supporting calculations. The answers to this were generally weak and it was apparent that candidates do not really understand what a bottleneck activity is. The majority of answers stated that this was the bottleneck activity because a senior stylist spends more time on each client than any of the other staff spend. Whilst this is true, this fact alone would not necessarily make the senior stylists' time the bottleneck resource. Candidates also needed to consider the total amount of senior stylists' time available compared to the other staff, so they needed to take into account the number of each type of staff member that were available and base their explanation on this. Future candidates should be sure to read through the suggested answer carefully. Note that the suggested answer only provides one approach to answering this question, however there were numerous approaches that could have been taken and credit was duly given where appropriate.

Part (b) asked for calculations of the throughput accounting ratio for cuts and treatments. This question was answered better than part (a). However, a common error was to base calculations on total salon hours of 2,400 rather than 7,200. As regards the staff costs, it did not matter whether candidates assumed that the salary costs

given in the question were the individual salary costs per staff member or the total salary costs for each category of staff. Either assumption was acceptable.

Whilst part (b) was of a better standard than part (a) very few candidates got full marks for part (b). This is definitely an area of the syllabus that needs careful consideration when preparing for F5.

Question 3

This was the final ten mark question on the paper and it tested relevant costing within the context of preparing a cost estimate for a business which made sofas. The calculations were not overly difficult and there were lots of good answers as far as the numbers were concerned. The problem that arose was that it became clear that some candidates were not able to explain their reasons for using the figures they had selected and some didn't even attempt to give explanations. This was regrettable as presumably, if a candidate knows what numbers to use, they do understand relevant costing.

When asked for a brief explanation it is not enough, as regards the administration overheads, for example, to simply say that 'these costs are not relevant.' Instead, it is necessary to say that 'these costs are not relevant as they represent an apportionment of general overheads and, since these costs will be incurred irrespective of whether this work goes ahead, they are not incremental.'

Also, some candidates also seem to be confused as to what the work 'sunk' means. In a relevant costing context, a sunk cost is one that has already been incurred. That is not the same as saying that a cost is not incremental such as the administrative overheads. Many candidates said that these were 'sunk' but this was not the case as the money had not already been spent. The administration overheads weren't relevant as they were going to be incurred regardless and so were not specific to the decision being analysed.

Question 4

The first 15 mark question examined the balanced scorecard. This was a purely written question. Part (a) asked for a description of the four perspectives of the balanced scorecard. This was worth 6 marks and tested pure knowledge. It was generally well answered and if anything, some candidates went overboard and talked extensively about the balanced scorecard as a whole rather than sticking to the question. This caused them to waste valuable time.

Part (b) was more challenging. Candidates had to apply their knowledge to the scenario and identify corresponding goals and performance measures for Jamair, a low-cost airline. There was a general absence of understanding about the difference between a goal and a measure. A goal is an objective and should begin with the word 'to'. So, for example, under the customer perspective, a goal could be 'to reduce the number of flights cancelled.' Then, the corresponding performance measure would be 'the number of flights cancelled.' Since the question also asked for an explanation, which was equally as important as the goal and measure, a candidate would have to go on, in this example, to say that reducing the number of flights cancelled is important as customers would not want to fly with Jamair if they were unreliable. If explanations were missing, marks could not be fully awarded.

The question did ask that candidates chose goals and measures that were specific to Jamair. This meant that generic goals and measures did not usually score marks, unless, via the explanation, the candidate had made sure that the goal/measure was relevant to Jamair.

Question 5

The final question on the paper was for 15 marks and covered material mix and yield variances. Part (a) asked for the calculations for these and was very well answered. It was impressive to see the number of candidates who scored full marks here.

Part b(i) asked for a brief explanation of what each of the variances indicates about production at the company, Safe Soap Co. Some candidates did not read the question properly and started discussing the manager's performance. This was not what the question asked so – future candidates – make sure that you always read requirements carefully. So, for example, as regards the adverse material mix variance, answers should have stated that it shows that the mix of materials used in October was more expensive than the standard mix. It was surprising to see that many candidates did not know that this is what an adverse materials mix variance shows. This was similar to some of the responses to question 2, where the calculations were done reasonably well but understanding of what the calculations actually meant was sometimes lacking.

Part b (ii) also proved problematic for a number of candidates. It read 'discuss whether the sales manager could be justified in claiming that the change in the materials mix has caused an adverse sales volume variance in October.' The expectation was that candidates would identify the fact that the change in mix could have led to the adverse sales volume variance but it cannot be definitively said that it did. Many answers tried to make it a black and white matter i.e. yes or no, when in fact the answer was grey.

Quite a few candidates said that the sales manager couldn't be justified in his claims because a more expensive mix of materials was used and this means sales volumes should go up. Again, it's simply not as straight-forward as this. A more expensive mix might be used in production but this doesn't mean that a product will necessarily be better. In the case of something like soap, adhering to a certain formula is very important.

Conclusion

Overall, despite the issues raised above, there were some very good papers and it is clear that some areas of the syllabus are well understood by F5 candidates.