Examiner's report

F5 Performance Management

June 2014

General Comments

The examination consisted of five compulsory questions each worth 20 marks. Whilst the majority of candidates attempted all five questions, some candidates did not attempt question 3b, which covered the area of transfer pricing.

Candidates often started with the questions that they felt most comfortable with and finished with the questions that they had less knowledge of. This is always a good approach and increases the likelihood of scoring enough marks to gain an overall pass in the paper.

Candidates performed particularly well on questions 1(b), 4(a), 4(b) and 4(c). The questions candidates found most challenging were questions 1(c), and 3(b). This is mainly due to candidates not understanding core syllabus areas well enough; a lack of technical knowledge and also due to a failure to read question requirements carefully. Question 3(b) covered the area of transfer pricing, which is frequently examined in the F5 paper and covers an issue which is very important for businesses in the real world.

A number of common issues arose in candidate's answers:

- Failing to read the question requirement properly and therefore providing irrelevant answers which scored few, if any, marks.
- Poor time management between questions. Some candidates wrote far too much for some questions and this put them under time pressure to finish the remaining questions.
- Illegible handwriting and poor layout of answers.

Specific Comments

Question One

Part (a) was a 3 mark question asking for a calculation of the absorption cost for each of three products. The total overheads had to be divided by the total machine hours and then allocated to each product on the basis of the number of machine hours used. The expectation would have been that all F5 candidates were able to answer this requirement as it is a common calculation under absorption costing. However, common mistakes included:

- Dividing the overheads by the number of labour hours rather than machine hours i.e. using an incorrect method for absorption.
- Dividing the overheads by the total number of units and then working out a cost per unit by including this figure.

Part (b) examined activity-based costing (ABC). On the whole, this was very well-answered. Where mistakes were made, they generally arose from misreading the information in question. Consequently, the number of batches used by candidates to calculate the machine set up costs per unit was frequently 1,700 rather than the correct 115. Similarly, whilst the machine ordering costs should have been split between the total of 480 batches, misreading of the question often led many candidates to use a figure of 13 batches instead.

Part (c) was a 6 mark written requirement asking how a change to activity based costing would impact on the selling price and sales volume of each product. The correct approach here was firstly, to see whether the cost per product had increased or decreased using activity based costing. Given that the company used cost plus pricing, a comment about whether the selling price would consequently increase or decrease could then be made for each product. Finally, the elasticity of each product was given in the question. Therefore, it was possible to say whether individual sales volumes would increase or decrease as a result of the price change.

Poor marks were often gained on part (c) because firstly, candidates didn't deal with each product separately. It should be noted that, where capitalisation has been used in a requirement, the examiner is trying to emphasize something to candidates. In this case, it was trying to emphasise that the selling price and sales volume needed to be discussed for each product individually, given that ABC would affect the selling price of each product differently. Secondly, some candidates did not read the scenario properly and consequently, did not consider whether demand for each product was elastic or inelastic. Consequently, they just assumed that an increase in price would always lead to a decrease in sales volume, which would not have actually been the case for product Z, for example. If elasticity was not mentioned at all for a product, it was difficult to earn marks for discussing the impact on sales volumes of a move to ABC.

Question Two

This question examined linear programming and overall, there were some good attempts to answer it. However, points that future candidates should note are as follows:

- Production constraints should always be expressed as '≤' not '='. Also, be careful not to write '≥' by mistake.
- The non-negativity constraint (x, y≥0) should always be included.
- Generally, in a question like this, it does not matter whether a candidate works in hours or minutes, as long as a consistent approach is adopted.
- The best way to work out the gradient of the iso-contribution line is to set a value for C, then work out the corresponding values of x and y in turn. So, for example, the iso-contribution line in this question was C=30x+40y. If we use a value of C of 1,200,000, then if x =0, y = 1,200,000/40=30,000. Then, if y=0, x = 1,200,000/30 = 40,000. Many candidates try to use an alternate approach whereby they simply take the contribution of y, multiply it by 1,000, and use this to find the value of x (40,000). Similarly, they do the same for y. Whilst this approach is totally valid, it can result in candidates making a mistake and this happened a lot in this paper. Many candidates consequently used value of 40,000 for y (rather than x) and 30,000 for x (rather than y) and therefore drew an iso-contribution line with the wrong gradient. This meant that the rest of their answer was therefore wrong, although follow-on marks were always awarded.
- Always both shade and/or label the feasible region, as well as actually identifying the fact that it is the 'feasible region.'
- Always state clearly what the optimum point is. This makes it easy to award follow on marks where there has been an error.
- Always show workings when solving the simultaneous equations at the optimum point. Otherwise, the presumption sometimes is that the values have been read off the graph, and this then makes it difficult to award marks.
- When the products are called 'x' and 'y' it makes sense to show x on the x axis of the graph and y on the y axis. This makes marking easier.

In part (b) candidates had to calculate the amount of any slack resources arising as a result of the optimum production plan. Given that the requirement asked for slack *resources*, it was not necessary to calculate the slack i.e. unmet demand for Products X and Y. Some candidates spent time doing this even though there were no marks available for these calculations. Other candidates did not know what slack was and consequently went on to calculate shadow prices instead. On the whole, however, there were some good attempts at this part of question 2. Remember, there will always be slack for a resource which sits outside the optimum point on the graph. Whilst the calculations were quite good for part (b), it was a shame that some candidates forgot to go on and explain the implications of the slack amounts for decision-making, as this was where the easier marks were in this part of the question. Always be sure to read the requirement back after answering a part of a question in order to ensure that everything has been answered.

Question Three

Part (a) asked for some ratios to be calculated together with some discussion of performance. The calculations were done quite well, although a common mistake was to combine the two divisions of W Co and calculate ratios for W Co as a whole. The question was very clear in asking candidates to 'discuss the performance of C Co and each division of W Co…..' so presumably, this error arose because of insufficient reading of the requirement. However, the biggest problem with this question was the discussion that followed. In total, the discussion was worth 5.5 marks. Candidates were supposed to identify the fact that it was difficult to compare a design business to a manufacturing business. One would expect their return on capital employed, for example, to be totally different as a manufacturing business would usually have a far bigger asset base than a design business. Similarly, because the businesses are so different, it would actually be far more useful to have either prior year ratios and/or ratios of similar businesses as a basis for comparison. Rather than identifying these two main points and then going on to make some further analysis, candidates tended to make fairly weak points such as 'the Design division's profit margin is higher than the Gearbox division's margin', without going on to emphasise that this would be expected as they are totally different types of businesses.

Part (b) covered transfer pricing and appeared to be the question that candidates found the most challenging on the paper. The requirement read 'advise, using suitable calculations, the transfer price or prices at which the components should be supplied to the Gearbox Division from C Co.' From the scenario, it was apparent that C Co (the supplier) was only meeting 60% of external demand for its products. Since these sales could be made at a higher price than it would cost the Gearbox division (the receiver) to buy the products from outside the group, the optimum solution would ideally be that C Co should satisfy external demand in full and then sell the remainder of its capacity to the Gearbox division. However, since group policy states that sales must be made within the group first, C Co had to sell to the Gearbox division at a price that would be acceptable to both of them. Therefore, the price for these sales that could otherwise have been made outside the group, if permitted, would have to be somewhere between the price C Co would secure from outside and the price that the Gearbox division would have to pay to an external supplier (which was 5% less.) However, candidates were meant to identify the fact that the price for those sales that could not have been made outside the group, due to the cap on external demand, would be at a much lower price.
This question was such a struggle for candidates that they really need to review it carefully if they are not successful in F5 this time. Similarly, it is a useful revision tool for future candidates.
It is also worth noting that pages of calculations without any kind of supportive narrative and explanations won't score highly. The narrative is very important in these types of questions.

Question Four

This was the most well-answered question on the paper overall. Part (a) asked for a calculation of six profit outcomes. Many answers scored full marks. Where mistakes were made, they tended to be because:

- Variable costs had not been calculated correctly. This was down to inaccurate reading of the question, which stated that if production exceeded 100,000 units, the production costs would fall to $11 *for all units produced*, not just the incremental units above 100,000.
- Probabilities were incorrectly applied to the profit figures. Probabilities should only have been applied when calculating the expected values in part (b).

Moving on to part (b), the calculation of expected values at the two price options, this was also well answered. However, a significant number of candidates calculated the expected values but then failed to go on and 'recommend….which option Gam Co would choose.' Again, this highlights the need to reread a requirement after answering a question and make sure that the whole of the requirement has been answered.

Part (c) asked for a brief explanation of the maximin rule and a recommendation as to which price option should be chosen by the company if it applied this rule. Where errors were made, they often included:

- Mixing up maximin with minimax regret or maximax and consequently giving the wrong explanation and recommendation.

- Failing to support a recommendation with the numbers to back it up, i.e. comparing the $740k profit and the $742k profit and choosing the lower of these.
- When supporting the recommendation, using the profit figures after applying probabilities to them, rather than simply comparing the $740k and the $742k.

Part (d) was where candidates struggled most on this question. It read 'discuss the factors which may give rise to uncertainty when setting budgets.' Answers were weak because they focussed on internal rather than external factors too much or because they were too vague, saying, for example, that uncertainty arises because of 'external factors' but not saying what those external factors were.

Question Five

This examined the area of variances, a very popular F5 topic. Part (a) required calculations of the total sales mix contribution variance and the total sales quantity contribution variance. On the whole, it seemed that candidates either knew how to calculate these variances and scored full marks, or did not and scored zero. A minority of candidates calculated the volume variance instead of the quantity variance, which failed to attract marks. It really is a case of revising this area, learning the method and performing the calculations.
Part (b) was gave rise to the weakest answers in question 5, although it only asked for a brief description of the variances tested in part (a). Again, I think it is simply a question of making sure that this area is revised more carefully in future.

Part (c) asked for a discussion of the sales performance of the business. There were some good answers to this part of the question. However, it is useful here once again to mention that capitalisation in a requirement is used to emphasise something and help candidates. Here, it was used to emphasise the fact that only the sales performance of the business needed discussing. Thus, because some candidates didn't read this carefully, they spent time discussing costs and calculating numbers that could not be awarded any marks.

Overall performance was not as expected given that this F5 paper tested many core syllabus areas and the pass rate reflects the fact that many candidates sitting the F5 exam have not yet fully grasped these key areas. This report should be utilised to help improve performance in the future.