Performance Management (PM) March/June 2024 Examiner's 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 those sitting the exam in the future.

Contents

General comments

This examiner's report should be used in conjunction with the published March/June 2024 sample exam which can be found on the ACCA Practice Platform.

In this report, the examining team provide constructive guidance on how to answer the questions whilst sharing their observations from the marking process, highlighting the strengths and weaknesses of candidates who attempted these questions. Future candidates can use this examiner's report as part of their exam preparation, attempting question practice on the ACCA Practice Platform, reviewing the published answers alongside this report.

The Performance Management (PM) exam is offered as a computer-based exam (CBE). The 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 offer detailed debriefs of selected questions from each section of the exam.

- Section A objective test questions – we focus on four specific questions that caused difficulty in the March/June 2024 sittings of the exam.
- Section B objective test case questions – here we look at one case from syllabus area C in detail.
- Section C constructed response questions – here we provide commentary on two questions, providing guidance on answering these questions and where exam technique could be improved.

Section A

In this section we will look at **FOUR** Section A questions which proved to be particularly difficult for candidates.

Example one

Daly Co needs 600 kg of material K to fulfil a customer order in one month's time. It currently has no material K in inventory but expects to have 200 kg of material J in inventory in one month's time. Material J is not perishable and will have no alternative use other than to sell it for scrap for $28 per kg. The 200 kg of material J could be converted into material K in one month's time at a cost of $6 per kg.

The current purchase price of material K is $30 per kg, and this is expected to rise to $38 in one month's time. Material K is perishable and normally 25% of stored material is lost per month.

What is the relevant cost of material to fulfil the customer order (to the nearest whole $)?

$ _____

What does this test?

✓ The understanding of the concept of relevant costing

What is the correct answer?

✓ The correct answer is **$22,000**

Daly Co has three possible ways in which it can obtain the 600 kg of material K that it requires. It will wish to choose the lowest cost way to obtain the necessary material.

Option 1: convert the material J held in inventory to material K in one month's time. The cost of this will be equal to the scrap value foregone of $28 per kg plus the conversion cost of $6 per kg, a total of $34 per kg.

Option 2: purchase material K today for use in one month's time. The cost per kg (after allowing for losses) available in one month's time for use on the order is equal to $30/0.75 = $40 per kg.

Option 3: purchase material K in one month's time at a cost of $38 per kg.

Option 1 is the lowest cost but will only obtain Daly 200 kg. The remaining 400 kg will have to be purchased, and option 3 is the cheapest way to do this.

So, the total relevant cost = (200 kg x $34) + (400 kg x $38) = $22,000.

Example two

Acorn Care is a government funded organisation which provides postnatal care for first-time mothers who require additional support before returning home with their new baby.

Workers at Acorn Care are mainly full-time staff but occasionally temporary staff from a local employment agency have to be brought in, at great expense.

The performance measures below are used by the management of Acorn Care to monitor performance as part of the value for money framework.

(i) Number of occupied beds as a percentage of total beds

(ii) Direct staff cost as a percentage of total operating costs

(iii) Full-time staff (hours) as a percentage of total staff hours

(iv) Food cost per meal served to patients

Which of the performance measures would be used to measure economy?

A. (ii) and (iii)

B. (ii) and (iv)

C. (i) and (iii)

D. (ii), (iii) and (iv)

What does this test?

✓ The application of the value for money as a public sector performance objective

What is the correct answer?

✓ The correct answer is **B, (ii) direct staff costs as a percentage of total operating costs and (iv) food cost per meal served to patients**

In terms of the value for money approach economy can be thought of as minimising the cost of inputs necessary to provide the quality of service required. The focus of economy is on the monetary input costs.

Staff cost and food costs are likely to be significant expenditure items and hence close monitoring of them would fall under the heading of economy.

Efficiency is the maximisation of the output/input ratio and focuses on utilising the input resources in the best way possible to achieve the desired outputs. This can be seen in the

efficient management of staff and rotas to reduce the expensive temporary staff and in the bed occupancy rates.

Example three

Douglas Co is producing a new product and expects its workforce to experience an 85% learning curve in production. The estimated labour time for the first batch of the new product is 260 hours and the estimated cumulative average time per batch for the eighth batch is 159.83 hours.

Note: Use the learning index of -0.234 for an 85% learning curve.

What is the expected incremental time for the eighth batch of the new product (to one decimal place)?

A. 164.9 hours

B. 162.4 hours

C. 120.7 hours

D. 124.3 hours

What does this test?

✓ The understanding of the learning rate and learning effect

What is the correct answer?

✓ The correct answer is **D, 124.3 hours**

To calculate the time for the eighth batch it is necessary to calculate the total time for eight batches and deduct the total time for seven batches, thereby isolating the incremental time for the eighth batch.

It is important to remember that the learning curve formula (given on the formulae sheet) will enable you to calculate the cumulative average time for a stated number of units or batches. To obtain a total time it will be necessary to multiply this cumulative average time by the number of units or batches.

The initial calculations have been carried out and you are provided with the cumulative average time for the eighth batch, hence the total time can be calculated as follows:
Total time for eight batches = 159.83 x 8 = 1,278.64 hours

It is then necessary to apply the formula to work with seven batches:
Cumulative average time for seven batches: $Y = 260 \times 7^{-0.234} = 164.90$ hours
Total time for seven batches = 164.90 x 7 = 1,154.30 hours

Therefore the incremental time for the eighth batch = 1,278.64 – 1,154.30 = 124.34 hours.

Distractors:

Option A is incorrect as it is the cumulative average time for seven batches.

Option B is incorrect as it equals (159.83 + 164.90)/2 which is an irrelevant calculation.

Option C is incorrect as it is the time for the ninth batch as opposed to the eighth.

Example four

Bazile Co uses the services of a number of market research consultants based in the different geographical regions in which it operates. These consultants are provided with hard copies of designs for new products, sent in sealed packages via a courier service due to their commercially sensitive nature.

To further ensure that details of new products are not leaked, the consultants are required to work using non-networked computers, and to save all market research findings on a password protected hard drive that is again sent by courier.

Which TWO of the following controls are likely to be of use to this company?

A. An anti-spyware software program

B. A lockable cabinet or safe

C. A firewall

D. A confidentiality contract

What does this test?

✓ The understanding of the controls necessary for information security

What is the correct answer?

✓ The correct answers are **B and D, a lockable cabinet or safe and a confidentiality contract**

This is an unusual scenario for information security, and one that is not often encountered in the workplace, as there is no use of networked technology. Hence, the common controls of firewalls and anti-spyware may not be suitable.

It is essential that the information provided in a scenario is carefully read and interpreted, and that assumptions are not made as to the suitability of generic approaches. The ability to apply generic concepts to a specified scenario is a key one in the Performance Management exam.

In this situation as the computers used by the consultant are non-networked a firewall and anti-spyware are not needed to preserve security at the consultant end.

The consultants will need lockable cabinets/safes for the hard copy design documents to be kept secure, along with any hard drives awaiting dispatch back to Bazile Co. Bazile Co will need similar secure storage for the receipt of items from the consultants.

A confidentiality contract will serve as a legal support to protect the commercially sensitive information.

Section B

In this section we will look in detail at a case covering pricing decisions from syllabus area C – Decision-making techniques.

Runf Co

Runf Co makes and sells a range of fitness equipment for use in gymnasiums and customers' homes.

It currently produces a stationary fitness bicycle called the Quikcyc.

The Quikcyc has a demand function of P = 893 - 0.009Q and a variable cost per unit of $230.

The company has also been developing another type of stationary fitness bicycle called the Fitcyc, which it is about to launch. It has commissioned some research which has established that at a price of $500 the demand for the Fitcyc would be 20,000 units. The research also noted that for every $8 increase in price, demand for the Fitcyc would be expected to fall by 1,000 units.

It also sells 48,000 sets of hand weights per year. Based on this activity level, selling price and cost information for these weights is as follows:

	$ per set
Selling price	36
Variable cost	5
Fixed cost	2

The demand function for the hand weights is P = 84 - 0.001Q. Runf Co has 75,000 sets in inventory and wants to sell them all in the coming year.

Question one

Using the optimal pricing approach, what should the selling price of the Quikcyc be in order to maximise profits?

A. $230

B. $332

C. $562

D. $663

✓ The correct answer is **C: $562**

Profit will be maximised when marginal revenue (MR) = marginal cost (MC).

In a question such as this we can substitute variable cost for marginal cost, which for the Quikcyc is given as $230.

The demand function (P = a – bQ) has been provided as P = 893 - 0.009Q. Marginal revenue is found as MR = a-2bQ.

Marginal revenue (MR)	MR = 893 - 0.018Q
Marginal cost (MC)	230
Equate MC and MR	230 = 893 - 0.018Q
Rearrange and solve for Q	0.018Q = 893 - 230
	0.018Q = 663
	Q = 36,833
Use Q = 36,833 in price equation to find optimum price	P = 893 - (0.009 x 36,833)
Solve for P	P = $562

Distractors:

Option A – Correct calculation of Q, but incorrect equation used for price.

Option B – Arranged incorrectly hence wrong value of Q, and subsequent price.

Option D – Correct calculation of Q, but then used incorrectly to obtain price.

Question two

Based on the research commissioned, at what selling price would demand for the Fitcyc be zero (to the nearest $)?

$ _____

✓ The correct answer is **$660**

P= a – bQ is the demand function, a straight line relationship. The value of ‘a’ reflects the price at which the quantity demanded is zero (it is the intercept on the y axis). So, we need to find ‘a’.

Firstly the value of ‘b’ has to be calculated from the information provided relating to the impact of price changes on the demand for the Fitcyc.

b= change in price/change in quantity = 8/1,000 = 0.008.

So using the price/demand combination provided for the product ($500 price will lead to sales of 20,000 units) 'a' can be calculated through substitution.

P = a – bQ

500 = a - (0.008 x 20,000) = 660

The price at which demand will be zero is $660.

Question three

If Runf Co sets a selling price in order to sell the 75,000 sets of hand weights in inventory, what would be the total profit earned?

A. $150,000

B. $204,000

C. $300,000

D. $675,000

✓ The correct answer is **B: $204,000**

The demand function for hand weights is given as P = 84 - 0.001Q. The price at which 75,000 sets can be sold is calculated from this.

P = 84 - (0.001 x 75,000) = 9. Price of $9 is required to sell the 75,000 sets.

Total contribution = ($9 – $5) x 75,000 = $300,000.

Total fixed cost can be calculated at the activity level of 48,000 sets = $2 x 48,000 = $96,000.

Profit = $300,000 - $96,000 = $204,000.

Distractors:

Option A - incorrect fixed cost used to calculate profit

Option C – total sales value calculated as opposed to profit

Option D – total contribution calculated but fixed costs not deducted

Question four

Runf Co has also recently developed a new electronic fitness device for tracking an individual's daily activity.

Which of the following facts about this new product would indicate that a market skimming pricing strategy would be suitable when it is launched?

(1) The fitness device has a three-year life-cycle
(2) The company has incurred high development costs
(3) The company wants to discourage new entrants into the market
(4) The fitness device is currently the first of its kind

A. 1, 2, 3 and 4

B. 1 and 3 only

C. 1, 2 and 4 only

D. 2, 3 and 4 only

✓ The correct answer is **C: 1, 2 and 4 only**

Statement 1 means that the device has a short life-cycle. Price skimming is suitable as profits can be made relatively quickly.

Statement 2 means that Runf Co will want to recover costs quickly. Price skimming is therefore favourable.

Statement 4 means that the device is innovative. Customers are likely to pay a high price for something which is new and different and so price skimming is favourable.

Statement 3 does not favour a market skimming pricing policy. Potential competitors will be attracted to the idea of producing their own version of the device in order to obtain high profits. Discouraging new entrants is usually a reason to adopt a penetration strategy.

Question five

Which of the following statements about price elasticity of demand (PED) is/are true?

(1) PED is measured as 'the percentage change in price' divided by 'the percentage change in demand'

(2) If the PED indicates that demand is elastic, prices should be increased in order to maximise profit

A. 1 only

B. 2 only

C. Neither 1 nor 2

D. Both 1 and 2

✓ The correct answer is **C: neither 1 nor 2**

Statement 1 is false as PED is calculated by percentage change in demand / percentage change in price, the inverse of that which has been suggested.

Statement 2 is false because elastic demand means that customers are sensitive to price changes. Therefore, a price increase would lead to a proportionately larger fall in demand, and hence have a negative impact on total revenue.

Section C

In this section we will look in detail at TWO constructed response questions from different syllabus areas. The full questions and solutions have been published and are available on the ACCA Practice Platform.

Venhosp Co

This question is from the Budgeting and Control area of the syllabus, specifically focussing on using least squares linear regression as a forecasting tool. This topic was an addition to the Performance Management syllabus in 2021.

Venhosp Co is a staffing agency looking to forecast the demand for staff days based upon its correlation with the number of events taking place in the region.

Requirement (a) – 11 marks

Part (a) is broken down into three requirements which require you to work through elements of the least squares regression calculations.

(a) (i) Use least squares regression, based on the quarterly data for 20X2-20X5, to calculate Venhosp's expected staff days in Quarter 4 20X6.

Note: Round your answer to the nearest full day.

(5 marks)

(ii) Assume that your answer to (a)(i) gave you a figure of 30,000 expected staff days. Based on this figure, calculate Venhosp's forecast revenue, staff costs and gross profit (revenue less staff costs) for Quarter 4 20X6.

(4 marks)

(iii) Calculate the correlation coefficient ('r') between the total number of events in Deeland, and Venhosp's staff days, based on the quarterly data for 20X2-20X5.

(2 marks)

Least squares linear regression is a useful forecasting method. Although the mathematical formulae involved may appear daunting they are straightforward to use with practice. It may be useful to refer to this article written by a member of the PM examining team that provides a detailed explanation of the technique.

The full solution can be found on the ACCA Practice Platform, and it shows the correct approach to the calculations which should be studied. Rather than repeat these workings, here are a couple of points worth noting about this specific situation:

- Parts (i) and (iii) required the use of the regression analysis formulae provided on the formulae sheet. The various summation totals, along with the value for 'n', were provided in the scenario.

- To calculate the expected staff days in part (i) it was necessary to utilise a value of 'x' equal to 114, as given in the scenario information about quarterly forecasting, where this is the total number of stadium events scheduled for Quarter 4 20X6.
- It should be noted that part (ii) of this requirement required no knowledge of linear regression and did not rely on the answer to (i). Be careful to ensure that you multiply the staff days figure given by 8 to get the number of staff hours in total. This can then be used to calculate revenue and wages as these are given on an hourly basis.

Utilising the spreadsheet response area

It is essential that use of the spreadsheet software is practised as part of exam preparation to ensure that complex formulae such as those required in part (a) can be worked with smoothly. Where workings are clearly shown in the spreadsheet (either within a formula or a written explanation) marks can be awarded when minor errors (such as not multiplying by 8 in part (ii)) are made.

With lengthy formulae such as those required for regression calculations, you may find it easier to calculate the numerator and denominator figures in separate cells of the spreadsheet before bringing them together to calculate the values for 'b' and 'r'.

Requirement (b) – 3 marks

(b) Briefly discuss the limitations of regression analysis.

(3 marks)

The advantages and disadvantages of techniques often form the basis of questions in Performance Management and so they are useful things to learn as part of your final revision. In this requirement there was no need for application to the situation of Venhosp.

Note that the requirement was to 'briefly discuss' and so a lengthy coverage of every limitation was not required.

Requirement (c) – 6 marks

(c) Discuss THREE factors the board should consider when deciding whether to increase the hourly wage rate from $11.25 to $11.75, as the HR director has suggested.

(6 marks)

It is important to consider the wording of a requirement as well as the marks available. In part (c) three factors are required for six marks, hence two marks each, suggesting that depth is required to the points made. Whereas in part (b) the brief discussion warranted just one mark per valid point.

For example, rather than a statement such as 'Venhosp should consider the costs of a wage increase' further analysis should be performed as to how much the costs might increase by.

This part of the question did not specifically require calculations, but some may have been useful to support points such as this.

Strong responses to this requirement used the information provided in the scenario to highlight aspects such as:

- The work is physically demanding and so perhaps the staff should be paid more, and
- Venhosp has competition, and could lose staff to them if it does not pay well enough.

These pieces of information will enable a factor to be fully discussed and hence two marks to be achieved.

Caroline Co

This question is from section E of the syllabus, Performance Measurement and Control, specifically divisional performance and transfer pricing. It is important to remember all syllabus areas can be tested and therefore a broad knowledge of the syllabus is required.

Caroline is a manufacturing company with two decentralised divisions, Radio Division and Packaging Division. Production from Packaging is transferred to Radio with a transfer price set. This question explores the impact of the existing transfer price and a possible change to this price.

The scenario provides some key information, Packaging can only transfer its production to Radio Division and if it were to close there are fixed costs which cannot be avoided.

Requirement (a) – 6 marks

(a) Prepare a profit statement for each of the two divisions and for Caroline Co as a whole, under the current transfer pricing arrangements.

Note: Your sales and costs figures should be split into external sales and inter-divisional transfers where appropriate.

(6 marks)

This requirement should be fairly straightforward in terms of the calculations required. The required information is clearly provided in the scenario with just one calculation required to establish the transfer price using full cost plus 20%.

The main challenge with this part was presenting an answer to fully meet the requirement. To consider all the specific requirements:

1. ‘Prepare’

Note the verb in this question is to prepare and not to simply calculate therefore the presentation of the answer is important.

2. A profit statement

How should a profit statement be presented? A profit statement should provide the sales revenue, variable costs, fixed costs and profit. These should be the totals and not on a per unit basis as the profit will be impacted by the volume produced and sold/transferred.

3. For each of the two divisions and for Caroline Co as a whole

As a full profit statement is required for all three the best approach to this would be to present a profit statement with one column each for Packaging Division, Radio Division and Caroline Co.

4. Under the current transfer pricing arrangements

As noted in the scenario the transfer price is set at full cost plus 20%; this can be calculated on a per-unit basis or in total for the 20,000 units transferred.

5. Split into external sales and interdivisional transfers

The full transfer price of $120,000 is the revenue received for Packaging Division from the internal transfer and the cost incurred by Radio Division for the internal purchase. These must be presented in separate rows from the external sales revenue and external costs in the profit statement.

A good response provided a clear presentation of a profit statement with a column for each of the two divisions and for Caroline Co as a whole. Revenue was split between interdivisional sales (Packaging Division only) and external sales (Radio Division and Caroline Co). Only the external sales were shown for Caroline Co as the interdivisional transfers are not revenue and cost for the whole company. Variable costs were separated between external variable costs and interdivisional costs with fixed costs provided in a separate row in the statement. A final profit figure for each division and Caroline Co needed to be stated.

The full solution can be found on the ACCA Practice Platform, and it shows the correct approach to the calculations which should be studied.

Responses to this requirement were generally good with most candidates calculating the correct transfer price and profit generated by the two divisions. The main source of lost marks was not following the requirement to prepare a profit statement with interdivisional and external sales and costs separated.

Some of the common mistakes:

- Including interdivisional transfers with external sales and costs.
- Stating Caroline Co's profit as the total of the two divisions without preparing a profit statement for Caroline Co.
- Including interdivisional transactions in Caroline Co's profit statement.
- Using a per unit basis.

- Using an incorrect profit statement format.

Requirement (b)(i) – 4 marks

(b)(i) Calculate the effect on the profits of each division and Caroline Co as a whole if a transfer price of $4 per box is used.

(4 marks)

In contrast to part (a) this requirement is to calculate the effect of the proposed change, and therefore there is no specific format required for the answer.

Breaking down this requirement we can note a few important points to account for when approaching this.

- Each division and Caroline Co – again all three must be considered.
- Effect on the profits – will the profit change, what will the new profit be and what is the effect of this? Increase/decrease by $X.
- New transfer price is $4 with no change in volume, $80,000 ($4 x 20,000) will be the interdivisional sales and cost. This will not impact on Caroline Co.

This part was well answered with many candidates scoring the full 4 marks here. Many of those who lost marks here failed to calculate the effect for both divisions AND Caroline Co or failed to recognise that the internal transfer price change will not change Caroline Co profit.

Requirement (b)(ii) – 4 marks

(b)(ii) Calculate the effect on the profits of Caroline Co as a whole if the Packaging Division is closed and all boxes are purchased externally.

(4 marks)

Candidate responses to this part of the requirement were mixed. The requirement clearly states to calculate the 'effect on profits of Caroline Co' and therefore required candidates to calculate the changes in the profit for the whole company.

A good approach to this is to consider; (1) what will the company save, (2) what additional cost will be incurred.

(1) It will save the variable costs which are incurred in production ($20,000) and fixed costs which are avoidable ($20,000)
(2) It will incur the full cost to buy in the boxes (20,000 x $4 = $80,000)

The net effect of this will be a decrease to profit of $40,000 as the additional cost is more than the savings made. An alternative approach to this would be to show the current profit and adjust for the external purchase to show the profit if this change was made.

A common mistake on this question was to provide calculations for each of the two divisions and show their profit without answering the requirement which specifically asks for Caroline Co.

Requirement (c) – 6 marks

(c) Discuss the advantages and disadvantages to Caroline Co of using a transfer price of $4 per box.

(6 marks)

It was important to recognise that the transfer price will change to $4 per box, and that the transfer of boxes will continue to take place. Some candidates incorrectly interpreted this to mean that Radio Division would be buying in from an external supplier.

If the transfer price was changed to $4 Radio Division would purchase internally and would not buy in from an external supplier. This is beneficial to Caroline Co because as can be seen from the calculations in (b)(ii) profit would reduce if the boxes were to be purchased externally.

Advantages for divisions and Caroline Co would each gain credit here. Many candidates were able to provide one or two advantages. They needed to be discussed in order to gain marks and a simple statement of an advantage without explanation would not gain marks.

Disadvantages for divisions and Caroline Co would also each gain credit. Many candidates recognised the impact on the performance management and motivation of the Packaging division. Again answers needed to be explained in order to demonstrate why it is a disadvantage. For example, stating that the 'Packaging Division manager would be demotivated' would not gain marks. This would need to be expanded to, 'Packaging Division manager would be demotivated. The change in transfer price would result in the Packaging Division making a loss; if performance appraisal is based on achieving a profit target this would no longer be achieved and the manager's performance would appear poor'.

Answers could also include wider comments on the 'fairness' or otherwise of the $4 transfer price. Relevant points with clear explanations would have earned credit, as is common in Performance Management questions. It is important to make an attempt at such a part of a question as you may be able to make valid points even if they were not those originally expected when the question was written.

Many candidates were able to gain 2 or 3 marks from this part. The main error in candidates' responses was to incorrectly assume that a change of transfer price to $4 would result in Radio Division buying in from the external supplier, closing Packaging Division and the advantages/disadvantages incorrectly focused on this.

The full suggested solutions can be found on the practice platform here.