



ACCA

Paper P5

Advanced Performance Management  
June 2012

Revision Mock – Answers



**To gain maximum benefit, do not refer to these answers until you have completed the revision mock questions and submitted them for marking.**

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**Key answer tips****1 Reading time**

- The 15 minutes reading time can be used to read the paper, make notes and plan the answer. This can only be done on the question paper and not the answer booklet.
- Start by skim reading the paper, making brief notes about the questions and choosing which section B questions to complete.
- Then decide which order to tackle the questions in. Complete your best question first and worse question last.
- The remainder of the time should be spent reading the questions in detail and making answer plans.

**2 Questions**

- Split your time between the four questions. It may sound obvious but few candidates will do this. One of the key reasons for failing is that candidates do not get to the end of the paper.
- Attempt all parts of the question. Again, this may sound obvious but you may be tempted to spend ages on the bits that you like and live in denial of the bits that you don't like! There will always be easy marks available and you may just pick up the vital one or two marks needed to pass.
- The questions will be based around a scenario. You must refer back to this scenario in your answer.
- The questions will be drawn from a wide range of syllabus areas.

**3 Approach to answers**

- The examiner has so far set very fair exams. There have been no tricks and requirements have been clear.
- The low pass rates seem to indicate that many candidates are ignoring his objectives. Do not spend all your time on the calculations. Plenty of question practice means that you should be able to work through the calculations to time. Remember that your answers don't have to be perfect. If you are not sure, you should take a guess, put a number in and move on. Any workings should be clearly referenced.
- You must complete the written parts. You should plan your answer to ensure you have enough relevant points and an appropriate structure. A brief intro, use of sub-headings with concise points and a quick conclusion seems to do the trick. There is no indicative marking scheme but one mark per point seems to be the norm. Students must make use of the scenario in their answer and may be expected to have some knowledge are real world issues.
- There may be a small number of presentation marks available, e.g. if the question asks for a report structure. Make sure that your answer is structured appropriately – these are easy marks to pick up.

## SECTION A

### ANSWER 1 – SANCO

- (1) After producing the 10,000 units for each product to meet the processing constraints, the Intermediate division would produce 20,000 more units of the product with the highest contribution per unit – namely Product C.

Production plan:

Product A	10,000 units
Product B	10,000 units
Product C	30,000 units

Resulting total company profit would be:

	<i>Product X</i>	<i>Product Y</i>	<i>Product Z</i>	<i>Total</i>
	\$	\$	\$	\$
Selling price per unit	56	60	60	
Variable costs:				
Intermediate division	7	12	10	
Final division	10	10	16	
	<u>        </u>	<u>        </u>	<u>        </u>	
Company contribution	39	38	34	
	<u>        </u>	<u>        </u>	<u>        </u>	
Total contribution	390,000	380,000	1,020,000	1,790,000
Fixed costs				625,000
				<u>        </u>
Total company profit				1,165,000
				<u>        </u>

It is possible, using the transfer prices, to apportion the total contribution between the two divisions. This split, however, does not change the total contribution of \$1,790,000.

- (2) The Final division makes a contribution from all three products and will therefore purchase the initial 10,000 units of products A, B and C. The division will then maximise its own division profit by purchasing 20,000 units of the product which gives the highest divisional contribution – namely product B (for use in product Y).

Purchasing plan:

Product A	10,000 units
Product B	30,000 units
Product C	10,000 units

Resulting total company contribution would be:

	<i>Product X</i>	<i>Product Y</i>	<i>Product Z</i>	<i>Total</i>
	\$	\$	\$	\$
Total contribution	390,000	1,140,000	340,000	1,870,000

With fixed costs unchanged, the company's profit would increase by \$80,000 to \$1,245,000.

- (3) Ignoring divisional profitability, the production mix should be:
- |           |   |
|-----------|---|
| Product A | 30,000 units (maximum company contribution)   |
| Product B | 10,000 units (to meet processing constraints) |
| Product C | 10,000 units (to meet processing constraints) |

Resulting total company profit would be:

	<i>Product X</i>	<i>Product Y</i>	<i>Product Z</i>	<i>Total</i>
	\$	\$	\$	\$
Total contribution	1,170,000	380,000	340,000	1,890,000
Fixed costs				625,000
Total company profit				<u>1,265,000</u>

which is \$20,000 in excess of that achieved in (2) and \$100,000 over the profit in (1).

- (4) With transfer prices being set at market prices, the optimal plan is to let the Intermediate division produce its optimal production plan and allow the Final division to purchase according to its optimal purchasing plan. Any products manufactured by the Intermediate division, not required by the Final division, should be sold outside the company and any shortfall in supply to the Final division purchased from outside the company. This would produce the following results:

		<i>Contribution</i>
		\$
Product A	All sold internally. 10,000 units produced	
Product B	All sold internally. 10,000 units produced	
Product C	10,000 units sold internally	
	20,000 units sold externally	400,000
Product X	Sold, 10,000 units produced internally	390,000
Product Y	Sold, 10,000 units produced internally	380,000
	Sold, 20,000 units produced externally	600,000
Product Z	Sold, 10,000 units produced internally	340,000
Total contribution		<u>2,110,000</u>
Fixed costs		625,000
Total company profit		<u>1,485,000</u>

Therefore, total internal transfers reduce profitability by \$220,000 (\$1,485,000 – \$1,265,000).

- (5) Ideally the transfer pricing system at Sanco Ltd should promote goal congruence, enable effective performance appraisal, motivate divisional management and maintain divisional autonomy.

It is likely that the ideal transfer price does not exist and some 'best' transfer price is used.

At Sanco Ltd the use of market price appears to be quite a reasonable transfer price, but the divisions must be able to decide on when to transfer internally and when to deal with external suppliers/customers.

However, it may be necessary for central management to monitor the activities of the divisions to ensure that neither division is excessively affected by the actions of the other division.

Marking scheme		Marks
(1)	Production mix	2
	Contribution	1
	Fixed costs	1
	Company profit	1
	Comment of transfer price	1
	<b>Maximum</b>	<b>6</b>
(2)	Production mix	2
	Contribution	1
	Comment	1
	<b>Maximum</b>	<b>4</b>
(3)	Production mix	3
	Contribution	1
	Fixed costs	1
	Company profit	1
	Comment	1
	<b>Maximum</b>	<b>7</b>
(4)	Comments	2
	½ mark for each product contribution and for fixed costs	3
	Total contribution	1
	Total company profit	1
	<b>Maximum</b>	<b>7</b>
(5)	2 marks for each well explained point	<b>Maximum</b> 6
<b>Total</b>		<b>30</b>

## ANSWER 2 – NAHC

- (a) How the Government initiative could both impair and improve the performance of NAHC.

### Impair

The initiative will encourage new start up companies, attracted by the surge in interest from the population and potential tax breaks.

This new competition would be detrimental to NAHC, potentially resulting in a price war, and loss of market share.

Furthermore, as members focus on reducing their weight, there might be a loss of custom for the restaurant. The restaurant has a good reputation and thus generates significant additional revenue for NAHC.

The extent of this impact will depend on whether the restaurant offers healthy meals on its menu, perhaps with indications of calorific value. If this is not the case, then it could be argued that this is in contrast to the mission, and will contradict the efforts made to lose weight.

**Improve**

Charges for health facilities will kick start a social revolution, driving the population towards better maintenance of their own personal health.

This will increase the demand for membership of clubs such as NAHC, as people seek to increase weight loss.

The increased demand may boost NAHC's membership numbers and there may even be scope to increase prices as well.

The tax concessions provided by the government will enable the company to retain a larger share of generated profits. This will increase shareholder returns, and generate greater cash flows for reinvestment.

- (b) Problems inherent within the current budgeting process and reward systems at NAHC and how they could be improved.

**Budgeting Problems**

The annual budget is set by senior management, with no input from the local GM. This is likely to result in a target set that fails to recognise the local capabilities and competition of each centre. This may lead to unrealistic and unachievable targets.

The lack of participation by the GM will lead to non acceptance of the target, and erode the motivation to improve performance. Imposed budgets are often treated with disregard by local managers who feel that it is unfair to be excluded from the process.

**Reward System**

The GM is remunerated by achievement of the budgeted profit. This figure is likely to include costs that are non controllable, such as depreciation of non-current assets, and Head Office allocations.

Furthermore, the achievability of the target may well be unrealistic which would result in good performance going unrewarded.

This is likely to be contributing to the high turnover of the GM. The current system allows the Personal Training community to earn more than their superiors and is thus highly degrading to their morale.

The Personal Trainers are heavily incentivised to increase bookings from clients, whilst this will boost revenue of the centre, it could result in dysfunctional behaviour. The intensity of each session may be inadequate, though the PT is concerned not to wear out the client and ensure a future booking is received.

Clients may be misled on their progress with a reluctance to inform them of news that they would not like to hear. This massaging of ego would provide clients with the feel good factor, though fail to address the target set by the government.

**Improvements**

GM must be allowed to participate in the budgeting process, and contribute towards the setting of their targets. Further the target profit should be replaced with a wholly controllable measure such as EBITDA.

They should also be judged on non financial performance measures such as the satisfaction of members, which could perhaps be judged by annual renewals.

PT must have their targets aligned to the government target of 15% weight loss. Going forward this will be a critical success factor for NAHC and thus must be incorporated into their agenda.

The quality of each session must be judged and incorporated in their remuneration package, perhaps recommendations received for new business, as it would imply that they are meeting the client's needs.

- (c) Summary table which shows the possible net profit or loss outcomes, and the combined probability of each potential outcome for the year ending 31 May 20X1.

<i>Economic Outlook</i>	<i>Probability</i>	<i>Competition</i>	<i>Probability</i>	<i>Combined Probability</i>	<i>Profit</i>	<i>EV</i>
Double Dip	0.40	Increase	0.70	0.28	250	<b>70</b>
		No Change	0.30	0.12	750	<b>90</b>
Stable	0.50	Increase	0.70	0.35	1,000	<b>350</b>
		No Change	0.30	0.15	1,500	<b>225</b>
Growth	0.10	Increase	0.70	0.07	1,150	<b>81</b>
		No Change	0.30	0.03	1,650	<b>50</b>
				1.00		<b>865</b>

### Workings

- Stable profit = \$1.5m
- Double Dip Profit = \$1.5m × 50% = \$0.75m
- Growing Profit = \$1.5m × 110% = \$1.65m
- Competition will erode profit by \$0.5m regardless of economic outlook

### Assumptions

The main assumption regarding the figures used is the reduction in profit by \$0.5m regardless of economic outlook. A percentage reduction might be more realistic.

The main assumption regarding the method of calculation is that the two factors – recession and competition – are independent events allowing us to multiply the probabilities together. In reality any indications of a double dip recession are likely to significantly reduce the threat of new entrants.

### Comments

The expected value of the profit is \$865,000. This is lower than the target of \$1.5m, assuming the latter remains static.

Looking at the probabilities, there is only a 15% chance that the target of \$1.5m will be achieved, which will rely upon a stable economy and no emerging competition.

There is thus an 85% chance that the bonus will not be achieved and will subsequently deny the GM a bonus for factors outside his control.

- (d) **The usefulness of the expected values**

The sum of expected values is simply a long run average rather than an actual outcome. Given the high turnover of GMs it is highly unlikely that they will consider the longer term. The probabilities, however, are more useful for considering the potential bonus.

However, the probabilities assigned are merely estimates and there is no guarantee of accuracy.

Furthermore, the outcomes are also simply estimations and thus decision making is perhaps distorted.



<b>Marking scheme</b>		<i>Marks</i>
(a)	Up to 1.5 marks per point made. Max 3 for each part.	6
(b)	1 mark per point if related to the scenario.	
	Budgeting Problems – maximum of 3 marks	3
	Reward System – maximum of 5 marks	5
	Improvements – maximum of 4 marks	4
(c)	2 marks for combined probabilities, 2 marks for EVs	4
	Assumptions – max 2	2
	Conclusions – max 3	3
(d)	1 mark per point	3
		—
<b>Total</b>		<b>30</b>
		—

**ANSWER 3 – DDD**

- (a) DDD is exposed to the following threats due to the imminent expiry of patents:

**Increased competitive rivalry**

Without patent protection to stop them, existing rivals will be able to produce cheaper copies of DDD chemicals. This will reduce the price DDD can charge for its products and reduce margins.

Also, since the patents are attached to processes rather than specific chemicals, there is the threat that competitors will be able to use the processes to develop new chemicals before DDD.

**Increased threat of entry**

Existing patents also act as barriers deterring new entrants into DDD's markets. Without this barrier, there is a greater threat that new firms will enter the market, increasing competition and driving down prices and margins.

**Increased power of customers**

At present DDD exerts considerable power over customers as they have limited ability to switch suppliers. This is reflected by DDD's current high margins. Once patent protection is removed, competitors will be able to make similar chemicals giving customers more choice.

The pharmaceutical companies will thus be able to exert more influence over DDD in areas such as price (as discussed above) and also credit terms, delivery terms and so on.

**Increased power of suppliers**

Any fall in volume will reduce DDD's power over suppliers and bulk discounts may be lost.

**Staffing issues**

The expected fall in profits will affect the value of share options, which in turn will affect employee motivation. Also the likely fall in volumes could require DDD to consider redundancies.

- (b) Possible courses of action include the following:

**Try to establish new patents for existing processes**

By changing various aspects of existing processes, it may be possible to establish new patents for them, eliminating the threats outlined above. This option should be pursued first by discussions with patent experts to assess the likelihood of success.

**Develop new processes / products as part of product portfolio management**

Presumably part of DDD's long-term planning process is such that it anticipates patent expiry as a normal part of its business and has already developed new patent-protected processes and chemicals to replace the ones concerned. If not, then resources need to be allocated to such portfolio development.

**Cut prices to retain customers**

DDD could seek to retain customers by cutting prices and relying on its existing good relationships with them. Low prices may also act as a deterrent to new entrants.

Volume economies of scale may still enable DDD to produce the chemicals concerned at a lower cost than competitors, allowing it to make a reasonable margin event with lower prices. However, if larger manufacturers enter the market, then this advantage would quickly become eroded.

**Long-term contracts**

An alternative way of retaining customers could be to offer them lower prices in exchange for signing long-term contracts. Particularly where patents are not due to expire immediately, customers could be tempted by lower prices now and the guarantee of no price rises in the future.

This would also be a way of responding to current pressure from customers to reduce prices.

**Buy major threats**

If DDD can identify specific threats from competitors, then one option would be to buy them. This is unfeasible given DDD's small size.

- (c) **Summary**

It is recommended that the directors adopt the following course of action:

- 1 Try to establish new patents for existing processes to eliminate the threats.
- 2 If option 1 fails, DDD should try to get customers to sign up to long-term contracts in exchange for price cuts. This will create switching costs for customers and act as a barrier preventing new firms from entering the market.

Alongside this DDD should be developing new processes as part of its long-term portfolio management.

<b>Marking scheme</b>		<i>Marks</i>
(a)	1 to 2 marks for each possible threat up to a maximum of:	7
(b)	1 to 2 marks for each justified course of action up to a maximum of:	10
(c)	1 mark for each relevant point up to a maximum of:	3
		—
<b>Total</b>		<b>20</b>
		—

**ANSWER 4 – FIRE MUSIC**

(a) Customer satisfaction – performance indicators are:

- **Returning customers** – the number of customers returning to buy the music of Fire will identify the satisfaction from customers. For example the release of an album/single by an established band may be evaluated in terms of the number of people who purchase it.
- **Number of returned items** – this performance indicator may be less relevant to the music industry and companies such as Fire as customers are able to listen to tracks on the radio, television, online and also read reviews and therefore have the ability to ‘try before they buy’.
- **Unit sales** – the level of sales by the company is currently \$350 million. An increase in this level may indicate an increase in customer satisfaction and the music which the company releases. This must be compared to competitors (see later point).
- **Order level placed by the customer** – currently the level of spending is \$15 per transaction; this is unlikely to change unless the company increase the price paid for its music. The only other way to assess this PI is if the system can record when a customer purchases a number of Fire releases at the same time.

Maintain overall gross profit at 40% – performance indicators are: -

- **Sales volume** – the current level of sales is \$350 million, therefore any increase in the level of sales must achieve a 40% gross profit level. It may seem as if this profit level is high but as mentioned the industry is very lucrative and in some cases the percentage could even be higher.
- **Industry standard** – there will need to be an evaluation of the other companies working within the same industry to ensure that the level which the company sets enables them to compete on an equal footing. The performance of other companies will become an important performance indicator as the industry is profitable and many competitors may wish to enter the market.
- **Costs** – the costs associated with the music industry are often difficult to define with payments made to artists, royalties, and commissions for the production of videos etc. The actual development of the CD is extremely small and may even be produced overseas. The company will need to create budgets and cash flows which become the benchmarks for the evaluation of costs and hence the performance indicators (PI).

(b) The information systems that may be introduced to determine if the PI has been achieved and also improve the chance of meeting these targets include:

**Customer satisfaction**

- **Launch a retail web site** – this site should be interactive enabling customers to listen to introductions of the songs on each album to evaluate their choices and purchases. This can be backed up with the purchase of the music online or of the CD from the site supported by postal delivery. The ability to link purchases of music to other merchandise is possible, hence allowing the company to offer discounts for customers who purchase using this method. The internet site could also become the method for increasing satisfaction with the introduction of news, gossip, video releases etc relating to the artists that Fire manage.

- **Customer accounts** – may be established by the company to establish the number of returning customers to the site and store. They would have to consider and implement two different systems to determine customer loyalty. Within the shops the customer could present a loyalty card with a magnetic swipe card which is presented when the purchase is made. When making purchases on the Internet a card cannot be used, but a loyalty account number may be entered or automatically entered to allow the customer access to discounts – through the development of cookies.
- **Management Information System** – both of the above systems will require a management information system to report on the purchases made by the customers. They will then be able to analyse the number of customers who return to buy the albums etc. and the ability to report and summarise information from the sales transactions will enable the organisation to obtain greater marketing information with the result of targeting specific customers.

#### **Information systems used to determine gross profit margin**

- **Web site monitoring** – the company may scan web sites of their main competitors to identify changes in their sales items and press releases relating to their performance. This monitoring will reduce the actual data collection which will be required by the staff working at Fire and enable them to evaluate their performance in relation to others and ensure that 40% target is realistic. If the industry standard increases and Fire are unaware of the change they could find that their position is eroded, as competitors are able to improve their margins.
- **Executive information system (EIS)** – this is a high-level information system that may be used by the strategic managers within Fire to compare the performance of the companies in a summary format. The information gathered by the MIS and other lower level information systems can be filtered into this system to provide important information relating to the overall costs and sales.
- **Management information systems** – the organisation will need to create a number of reporting systems relating to the individual sales of artists in regions and countries. This will enable the company to identify the profit margins on individual lines to determine their profitability and their overall contribution to the performance of the business.

(c) The sources of information that could be used by Fire to set the CSF and PI's include:-

- **Industry** – the company has already used the industry level to determine the level of gross profit that can be achieved. This is important as it enables the business to determine how well it operates in relation to other businesses offering the same products and services. Fire could investigate other CSF's and PI's such as market share and costs to determine performance
- **Temporal** – Fire experiences a higher level of sales during November and December as customers seek out gifts for Christmas, there will need to be additional CSF's and PI's set for this time such as the number of staff required during this period. By understanding the seasonal nature of their business they will be able to forecast demand along with the correct ordering of stock to ensure that the customer is satisfied.

Marking scheme		Marks
(a)	Award 1.5 marks for the suggestion of each PI to a maximum of:	6
(b)	Award 2 marks for each relevant IS: reference should be made to PIs for each CSF to maximum:	10
(c)	Award 2 marks for the description of each source of information for the CSF and PI	4
		—
<b>Total</b>		<b>20</b>
		—

**ANSWER 5 – BIG CHEESE CHAIRS**

(a) The average cost of the first 128 chairs is as follows:

		\$
Frame and massage mechanism		51.00
Leather	2 metres × \$10/mtr × 100/80	25.00
Labour	(W1)	20.95
		—
<b>Total</b>		<b>96.95</b>
		—

Target selling price is \$120.

Target cost of the chair is therefore \$120 × 80% = \$96

The cost gap is \$96.95 – \$96.00 = **\$0.95 per chair**

(W1) The cost of the labour can be calculated using learning curve principles. The formula can be used or a tabular approach would also give the average cost of 128 chairs. Both methods are acceptable and shown here.

**Tabulation:**

<i>Cumulative output (units)</i>	<i>Average time per unit (hrs)</i>	<i>Total time (hrs)</i>	<i>Average cost per chair at \$15 per hour</i>
1	2		
2	1.9		
4	1.805		
8	1.71475		
16	1.6290125		
32	1.54756188		
64	1.47018378		
128	1.39667459	178.77	20.95

Formula:

$$Y = ax^b$$

$$Y = 2 \times 128^{-0.074000581}$$

$$Y = 1.396674592$$

The average cost per chair is 1.396674592 × \$15 = \$20.95

(b) To reduce the cost gap various methods are possible:

- Re-design the chair to remove unnecessary features and hence cost
- Negotiate with the frame supplier for a better cost. This may be easier as the volume of sales improve as suppliers often are willing to give discounts for bulk buying. Alternatively a different frame supplier could be found that offers a better price. Care would be needed here to maintain the required quality
- Leather can be bought from different suppliers or at a better price also. Reducing the level of waste would save on cost. Even a small reduction in waste rates would remove much of the cost gap that exists
- Improve the rate of learning by better training and supervision
- Improve the productivity of the workforce through increased motivation of staff, e.g. by ensuring that employee's needs are met.
- Employ cheaper labour by reducing the skill level expected. Care would also be needed here not to sacrifice quality or push up waste rates.

(c) The cost of the 128th chair will be:

		\$
Frame and massage mechanism		51.00
Leather	2 metres × \$10/mtr × 100/80	25.00
Labour	1.29 hours × \$15 per hour (W2)	19.35
		———
Total		95.35
		———

Against a target cost of \$96 the production manager is correct in his assertion that the required return is now being achieved.

(W2) Using the formula, we need to calculate the cost of the first 127 chairs and deduct that cost from the cost of the first 128 chairs.

$$Y = ax^b$$

$$Y = 2 \times 127^{-0.074000581}$$

$$Y = 1.39748546$$

$$\text{Total time is } 127 \times 1.39748546 = 177.48 \text{ hours}$$

$$\text{Time for the 128th chair is } 178.77 - 177.48 = 1.29 \text{ hours}$$

<b>Marking scheme</b>		<i>Marks</i>
(a)	Frame cost	1.0
	Leather cost	2.0
	Labour average time for 128 units	1.0
	Labour total time for 128 units	1.0
	Average cost per chair	1.0
	Target cost	1.0
	Cost gap	1.0
	<b>Maximum</b>	<b>8.0</b>
(b)	1 mark for each relevant suggestion	1.0
	<b>Maximum</b>	<b>6.0</b>
(c)	Frame	0.5
	Leather	0.5
	Average time per unit	2.0
	Total time	1.0
	Time for 128th chair	1.0
	Conclusion	1.0
	<b>Maximum</b>	<b>6.0</b>
<b>Total</b>	<b>20</b>	

