Applied Skills

# Performance Management (PM)

March/June 2019 – Sample Questions

PM ACCA

PM

**Time allowed:** 3 hours 15 minutes

This question paper is divided into three sections:

Section A – ALL 15 questions are compulsory and MUST be attempted

Section B – ALL 15 questions are compulsory and MUST be attempted

Section C – BOTH questions are compulsory and MUST be attempted

**Formulae Sheet is on page 11.**

**Do NOT open this question paper until instructed by the supervisor.**

**Do NOT record any of your answers on the question paper.**

**This question paper must not be removed from the examination hall.**

Think Ahead

ACCA

**The Association of Chartered Certified Accountants**

**Section B – ALL 15 questions are compulsory and MUST be attempted**

Please use the grid provided on page two of the Candidate Answer Booklet to record your answers to each multiple choice question. Do not write out the answers to the MCQs on the lined pages of the answer booklet.

Each question is worth 2 marks.

The following scenario relates to questions 16–20

Volt Co generates and sells electricity. It operates two types of power station: nuclear and wind.

The costs and output of the two types of power station are detailed below:

Nuclear station
A nuclear station can generate 9,000 gigawatts of electricity in each of its 40 years of useful life. Operating costs are $486m per year. Operating costs include a provision for depreciation of $175m per year to recover the $7,000m cost of building the power station.

Each nuclear station has an estimated decommissioning cost of $12,000m at the end of its life. The decommissioning cost relates to the cost of safely disposing of spent nuclear fuel.

Wind station
A wind station can generate 1,750 gigawatts of electricity per year. It has a life-cycle cost of $55,000 per gigawatt and an average operating cost of $40,000 per gigawatt over its 20-year life.

**16 What is the life-cycle cost per gigawatt of the nuclear station (to the nearest $'000)?**

**A** $54,000
**B** $73,000
**C** $87,000
**D** $107,000

**17 Which of the following will decrease the total life-cycle cost of a nuclear station?**

(1) Increasing the useful life of the station
(2) Reducing the decommissioning cost

**A** 1 only
**B** 2 only
**C** Both 1 and 2
**D** Neither 1 nor 2

**18 How would the disposal cost of spent nuclear fuel be categorised in environmental management accounting (EMA)?**

**A** A prevention cost
**B** A detection cost
**C** An internal failure cost
**D** An external failure cost

**19 If Volt Co sets a price to earn an operating margin of 40% over the life of a wind station, what will be the total lifetime profit per station (to the nearest $m)?**

**A** $35m
**B** $408m
**C** $560m
**D** $933m

**20 Which of the following are benefits of life-cycle costing for Volt Co?**

(1) It facilitates the designing out of costs at the product development stage
(2) It can encourage better control of operating costs over the life cycle
(3) It gives a better understanding of the causes of overhead costs
(4) It provides useful data for short-term decision-making

**A** 1, 2 and 3
**B** 1 and 2 only
**C** 1 and 4
**D** 2, 3 and 4

**The following scenario relates to questions 21–25**

Cara Co makes two products, the Seebach and the Herdorf.

To make a unit of each product the following resources are required:

| | Seebach | Herdorf |
|---|---|---|
| Materials ($100 per kg) | 5 kg | 7 kg |
| Labour hours ($45 per hour) | 2 hours | 3 hours |
| Machine hours ($60 per hour) | 3 hours | 2 hours |

Fixed overheads are $300,000 each month.

The contribution per unit made on each product is as follows:

| | Seebach | Herdorf |
|---|---|---|
| Contribution ($ per unit) | 250 | 315 |

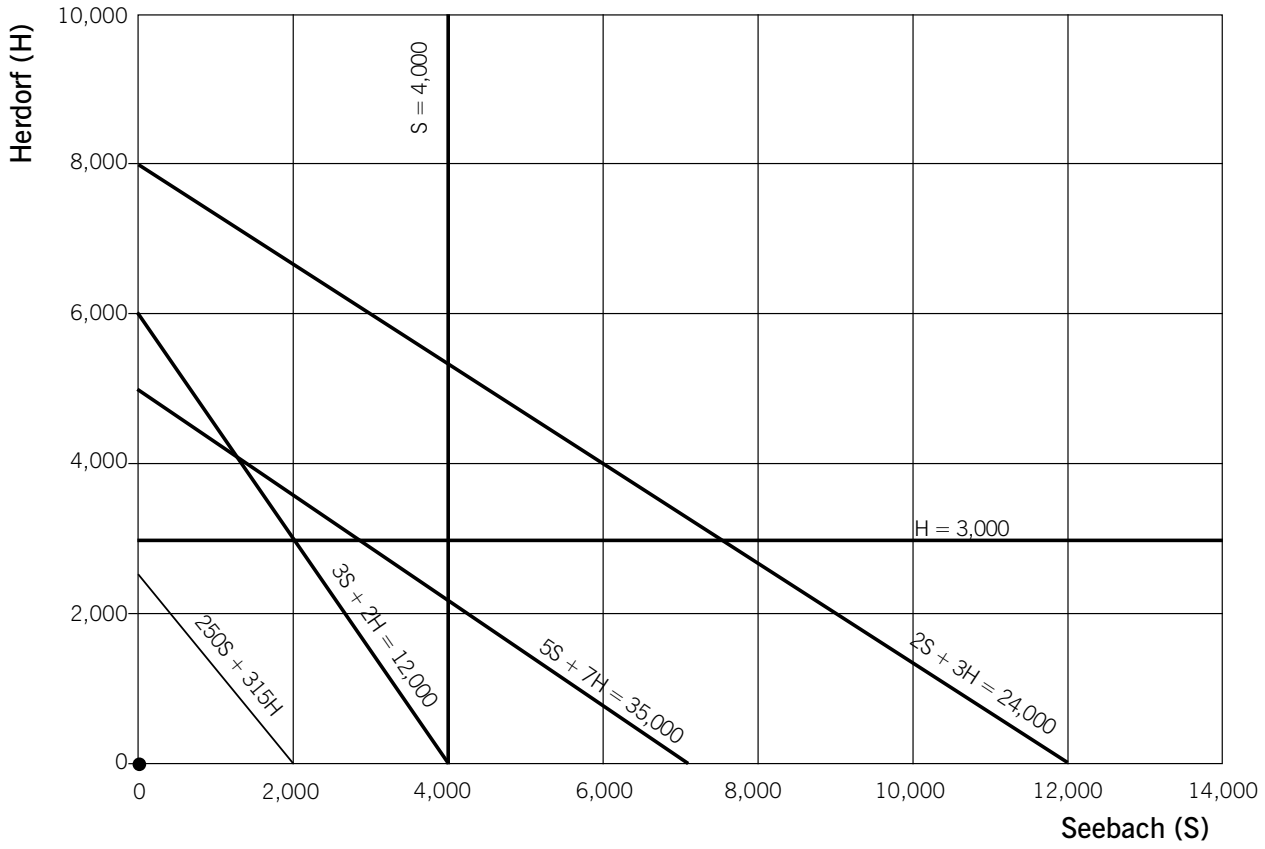
The maximum demand each month is 4,000 units of Seebach and 3,000 units of Herdorf. The products and materials are perishable and inventories of raw materials or finished goods cannot be stored.

Cara Co has a legally binding obligation to produce a minimum of 2,000 units of Herdorf in each of months 1 and 2. There is no minimum production required in month 3.

The manufacturing manager is planning production volumes and the maximum availability of resources for months 1, 2 and 3 are as follows:

| Month | 1 | 2 | 3 |
|---|---|---|---|
| Materials (kg) | 34,000 | 42,000 | 35,000 |
| Labour (hours) | 18,000 | 12,000 | 24,000 |
| Machine (hours) | 18,000 | 19,000 | 12,000 |

For month 3 the following linear programming graph has been produced:



**21 What is/are the limiting factor(s) in month 1?**

**A** Materials, labour hours and machine hours
**B** Materials and machine hours only
**C** Materials only
**D** Labour hours only

**22** The production manager has identified that the only limiting factor in month 2 is labour hours.

**What is the production volume for Herdorf for month 2 (to the nearest whole unit)?**

**A** 0
**B** 1,333
**C** 2,000
**D** 3,000

**23 If the shadow price for month 2 is $125 per labour hour, which of the following statements is/are correct?**

(1) The production manager would be willing to pay existing staff a maximum overtime premium of $125 per hour for the next 2,000 hours
(2) The production manager would be willing to pay a maximum of $170 per hour for an additional 2,000 hours of temporary staff time

**A** 1 only
**B** 2 only
**C** Both 1 and 2
**D** Neither 1 nor 2

**24 What is the maximum profit which can be earned in month 3?**

**A** $1,080,000
**B** $1,380,000
**C** $1,445,000
**D** $1,145,000

**25 Which of the following interpretations of the linear programming graph produced for month 3 is/are correct?**

(1) Even if demand for either product increases, labour will be a slack variable if no other resources change
(2) If more machine hours were made available in month 3, they would be used initially to make Herdorfs

**A** 1 only
**B** 2 only
**C** Both 1 and 2
**D** Neither 1 nor 2

**The following scenario relates to questions 26–30**

Marcus manages the production and sales departments for product MN at Grayshott Co. Marcus has been asked to attend a meeting with Grayshott Co's finance director to explain the results for product MN in the last quarter.

Budgeted and actual results for product MN were as follows:

| | Budget | Actual |
|---|---|---|
| Sales volume (units) | 40,000 | 38,000 |
| | $'000 | $'000 |
| Revenue ($65 per unit) | 2,600 | 2,394 |
| Material (5·2 kg at $4 per kg) | (832) | (836) |
| Labour (2 hours at $8 per hour) | (640) | (798) |
| Variable overheads (2 hours at $4 per hour) | (320) | (399) |
| Fixed overheads | (220) | (220) |
| Profit | 588 | 141 |

There was no opening and closing inventory in the last quarter. Grayshott Co operates a marginal costing system.

Marcus is angry about having to attend the meeting as he has no involvement in setting the original budget and he believes that the adverse results are due to the following circumstances which were beyond his control:

(1) A decision by Grayshott Co's board to increase wages meant that the actual labour rate per hour was 25% higher than budgeted. This decision was made in response to a request by the production department to enable it to meet a large, one-off customer order in the last quarter.
(2) Due to the closure of a key supplier, Grayshott Co agreed to a contract with an alternative supplier to pay 6% more per kg than the budgeted price for material. The actual cost per kg of material was $4·40.
(3) Difficult economic conditions meant that market demand for product MN was lower by 10%.

At present Grayshott Co does not operate a system of planning and operational variances and Marcus believes it should do so.

**26 What was the market share variance for product MN for the last quarter?**

**A** $40,400 Favourable
**B** $80,800 Adverse
**C** $29,400 Favourable
**D** $38,000 Adverse

**27 What was the adverse materials price planning variance for product MN for the last quarter?**

**A** $30,400
**B** $76,000
**C** $45,600
**D** $49,920

**28 What was the labour rate operational variance for product MN for the last quarter?**

**A** $159,600 Favourable
**B** $159,600 Adverse
**C** $160,000 Favourable
**D** $160,000 Adverse

**29 Which of the following would explain a labour efficiency planning variance?**

(1) A change in employment legislation requiring staff to take longer rest periods
(2) Customers demanding higher quality products leading to a change in product design
(3) The learning effect for labour being estimated incorrectly in the production budget

**A** 1 and 2 only
**B** 2 and 3 only
**C** 3 only
**D** 1, 2 and 3

**30 Which of the following statements regarding the problems of introducing a system of planning and operational variances is/are true?**

(1) Operational managers may argue that variances are due to the original budget being unrealistic
(2) Operational managers may seek to blame uncontrollable external factors for the variances

**A** 1 only
**B** 2 only
**C** Both 1 and 2
**D** Neither 1 nor 2

**(30 marks)**

**Section C – Both questions are compulsory and MUST be attempted**

**Please write your answers to all parts of these questions on the lined pages within the Candidate Answer Booklet.**

**31** Belton Park Resort is a new theme park resort located in the country of Beeland. The resort is made up of a theme park, a hotel and an indoor water park. The resort opened two months ago and is already very popular.

As all theme parks in Beeland are required, by law, to shut down in the colder month of January because of the risk of accidents, Belton Park Resort must decide whether to shut down the whole resort or just the theme park. It could choose to keep open the hotel **and/or** the water park.

Since Belton Park Resort has not been open for long, there is limited historical data available about costs and revenues. However, based on the last two months, the following **average monthly data** is available:

| | |
|---|---|
| **Hotel** | |
| Number of rooms | 120 |
| Average room rate per night | $100 |
| Average occupancy rate per month | 90% |
| Average nightly spend on 'extras' per room | $20 |
| Contribution margin for 'extras'* | 60% |
| **Water park** | |
| Number of visitors per month | 12,000 |
| Admission price per visitor | $21 |
| Average spend on 'extras' per visitor | $12 |
| Contribution margin for 'extras'* | 60% |

*'Extras' includes anything purchased by the customer not included in the room rate or admission price.

Management estimates that, for January, the average room rate per night would need to decrease by 30% and the admission price for the water park by 20%. With such reductions, it is estimated that an occupancy rate of 50% would be achieved for the hotel and that the number of visitors to the water park would be 52% lower than current levels. The average nightly spend on 'extras' per room of $20 at the hotel and $12 per customer at the water park is expected to remain unchanged.

The running costs for the hotel and water park for each of the last two months are as follows:

| | Notes | Hotel | Water park |
|---|---|---|---|
| | | $ | $ |
| Staff costs | 1 | 120,000 | 75,600 |
| Maintenance costs | 2 | 14,600 | 6,000 |
| Power costs | 3 | 20,000 | 18,000 |
| Security costs | 4 | 13,600 | 8,000 |
| Water costs | 5 | 12,900 | 12,100 |

**Notes:**

(1) **Staff costs**

**Permanent staff**

Included in the staff costs for the hotel is the salary of $30,000 per annum for the hotel manager and $24,000 per annum for the head chef. These are both permanent members of staff who are paid for the full year regardless of their working hours.

The water park employs one permanent member of staff, the manager, on a salary of $24,000 who is also paid for the full year regardless of his working hours.

**Temporary staff**

The remaining staff costs relate to temporary staff who are only paid for the hours they work. If the hotel stays open in January, half of these staff members will continue to work their current hours because their jobs are largely unaffected by guest occupancy rates. However, the other half of the staff will work proportionately less hours to reflect the 50% occupancy rate in January as opposed to the 90% occupancy rate of the last two months.

At the water park, the temporary staff's working hours will fall according to the number of visitors, hence a fall of 52% would be expected for January.

(2) Maintenance costs

Maintenance is undertaken by a local company, 'Techworks', which bills Belton Park Resort for all work carried out each month. If the hotel and water park are closed, Techworks will instead be paid a flat fee for the month of $4,000 for the hotel and $2,000 for the water park.

(3) Power costs

Electricity

Belton Park Resort pays a fixed monthly charge for electricity of $8,000 for the hotel and $7,000 for the water park, all year round.

Gas

The gas charges relate to heating and include a fixed charge of $2,200 per month for the hotel and $1,500 per month for the water park. The remainder of the gas charges is based solely on usage and would be expected to increase by 50% in January because of the colder weather.

(4) Security costs

If the hotel and water park close, no changes will be made to the current arrangements for security whilst the premises are empty.

(5) Water costs

It is estimated that water costs for the hotel would fall to $6,450 for the month if it remains open in January. However, the water costs for the water park would be expected to remain at their current level. If the hotel and water park were closed, all water would be turned off and no charges would arise.

**Required:**

**(a) Calculate the incremental cash flows, for the month of January (31 days), if Belton Park Resort decides to keep open:**

**(i) the hotel;**
**(ii) the water park.**

**In each case, state whether it should remain open or should close.** (15 marks)

**(b) Discuss any other factors which Belton Park Resort should consider when making the decision in part (a).** (5 marks)

**(20 marks)**

**32** Best Night Co operates a chain of 30 hotels across the country of Essland. It prides itself on the comfort of the rooms in its hotels and the quality of service it offers to guests.

The majority of Best Night Co's hotels are located in major cities and have previously been successful in attracting business customers. In recent years, however, the number of business customers has started to decline as a result of tough economic conditions in Essland.

Best Night Co's policy is to set standard prices for the rooms in each of its hotels, with that price reflecting the hotel's location and taking account of competitors' prices. However, hotel managers have the authority to offer discounts to regular customers, and to reduce prices when occupancy rates in their hotel are expected to be low. The average standard price per night, across all the hotels, was $140 in 20X7, compared to $135 in 20X6.

In addition to room bookings, the hotels also generate revenue from the additional services available to customers, such as restaurants and bars.

**Summary from Best Night Co's management accounts:**

| | Year ended 30 June 20X7 $'000 | Year ended 30 June 20X6 $'000 |
|---|---|---|
| Revenue – rooms at standard price per night | 111,890 | 104,976 |
| Room discounts or rate reductions given | (16,783) | (11,540) |
| Other revenue: food, drink | 24,270 | 23,185 |
| Total revenue | 119,377 | 116,621 |
| Operating costs | (95,462) | (92,379) |
| Operating profit | 23,915 | 24,242 |

**Other performance information:**

| | Year ended 30 June 20X7 | Year ended 30 June 20X6 |
|---|---|---|
| Capital employed (Note 1) | $39.5m | $39.1m |
| Average occupancy rates (Note 2) | 74% | 72% |
| Average customer satisfaction score (Note 3) | 4·2 | 4·5 |

Note 1: Capital employed is calculated using the depreciated cost of non-current assets at all Best Night Co's hotels.

Note 2: Occupancy rates for the year ended 30 June 20X7 were budgeted to be 72%.

Note 3: Customer satisfaction scores are graded on a scale of 1–5 where '5' represents 'Excellent'. On average, in any given town in Essland, the top 10% of hotels earn a score of 4·5 or above and the top 25% of hotels earn a score of 4·2 or above.

Two themes are becoming increasingly frequent in the comments Best Night Co's customers make alongside the scores:

(1) Repeat customers have said that the standard of service in recent visits has not been as good as in previous visits.

(2) The rooms need redecorating, and the fixtures and fittings need replacing. For example, the beds need new mattresses to improve the level of comfort they provide.

Best Night Co had planned a two-year refurbishment programme beginning in 20X7 of all the rooms in each hotel. However, this programme has been put on hold, due to the current economic conditions, and in order to reduce expenditure.

**Required:**

**Using the information provided, discuss Best Night Co's financial and non-financial performance for the year ended 30 June 20X7.**

**Note: There are 5 marks available for calculations and 15 marks available for discussion.**

**(20 marks)**

## Formulae Sheet

### Learning curve

$Y = ax^b$

Where Y = cumulative average time per unit to produce x units
a = the time taken for the first unit of output
x = the cumulative number of units produced
b = the index of learning (log LR/log2)
LR = the learning rate as a decimal

### Demand curve

$P = a - bQ$

$b = \frac{\text{change in price}}{\text{change in quantity}}$

a = price when Q = 0

$MR = a - 2bQ$

**End of Question Paper**