# Past-paper walk-through

Operations strategy ▪ 9.3

eXercise

# Questions in this set

- 9609/33 N25 Q4 ▪ 16 marks
- 9609/31 J25 Q3 ▪ 12 marks

# Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- // separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = "or words to that effect" – the wording need not match.

# Question 4

9609/33 N25 ▪ Q4 ▪ 16 marks

**4** **(a)** Using Figure 1.1:

**(i)** calculate the total float for activity C

# Question 4

**(ii)** identify the minimum project duration.

# Question 4

**(b)** Evaluate the importance of Critical Path Analysis (CPA) to the success of the hard rock mine.

# Solution 4

## (a)(i) Mark scheme

- Using Figure 1.1: calculate the total float for activity C
- Total float is the maximum time an activity can be delayed without delaying the whole project time or LFT – duration – EST
- OR LST – EST (1 mark)
- Total float = 80 – 40 – 30. (2 marks)
- = 10 weeks (3 marks)
- No need for weeks
- 3

# Solution 4

**(a)(ii)**

**Mark scheme**

- identify the minimum project duration.
- Sum durations of critical path: $40 + 60 + 10 + 5 = 115$ weeks (1 mark)
- No need for weeks
- 1
- 9609/33
- October/November 2025

# Solution 4

**(b) Mark scheme**

- Evaluate the importance of Critical Path Analysis (CPA) to the success of the hard rock mine.
- Level
- AO1 Knowledge
- and understanding
- 2 marks
- AO2 Application
- 2 marks

# Solution 4

- AO3 Analysis
- 2 marks
- AO4 Evaluation
- 6 marks
- 3
- 5–6 marks
- Developed evaluation in context
- ▪
- A developed judgement/conclusion
- is made in the business context.

# Solution 4

- ▪
- Developed evaluative comments
- which balance some key
- arguments in the business context.
- 2
- 2 marks
- Developed
- knowledge of
- relevant key term(s)
- and/or factor(s) is

# Solution 4

- used to answer the
- question.
- 2 marks
- Developed
- application of
- relevant point(s) to
- the business
- context.
- 2 marks
- Developed

# Solution 4

- analysis
- that identifies
- connections
- between causes,
- impacts and/or
- consequences.
- 3–4 marks
- Developed evaluation
- ▪
- A developed judgement/conclusion

## Solution 4

- is made.
- ▪
- Developed evaluative comments
- which balance some key
- arguments.
- 1
- 1 mark
- Limited knowledge
- of relevant key
- term(s) and/or

# Solution 4

- factor(s) is used to
- answer the question.
- 1 mark
- Limited application
- of relevant point(s)
- to the business
- context.
- 1 mark
- Limited analysis
- that identifies

# Solution 4

- connections
- between causes,
- impacts and/or
- consequences.
- 1–2 marks
- Limited evaluation
- ▪
- A judgement/conclusion is made
- with limited supporting
- comment/evidence.

# Solution 4

- ▪
- An attempt is made to balance the
- arguments.
- 0
- 0 marks
- No creditable
- response.
- 0 marks
- No creditable
- response.

# Solution 4

- 0 marks
- No creditable
- response.
- 0 marks
- No creditable response.
- 12
- 9609/33
- October/November 2025
- Responses may include:
- AO1 Knowledge and understanding

# Solution 4

- Limited knowledge
- will be demonstrated through knowledge of CPA.
- Developed knowledge
- +
- will be demonstrated through knowledge of CPA and its usefulness.
- ▪
- Knowledge of CPA: network, EST, LFT, floats, nodes, minimum duration, critical path.
- ▪
- Benefits of CPA: calculation of project duration

# Solution 4

- –
- knowing when activities should start
- –
- knowing latest finish times
- –
- knowing critical path
- –
- knowing floats.
- ▪
- Limitations of CPA:

## Solution 4

- –
- analysis only as good as the data.
- –
- new projects may not have past experience as a guide
- –
- planning costs.
- –
- does not ensure effective management.
- ▪
- Knowledge of other factors: availability of finance, materials and equipment.

# Solution 4

- ▪
- Investment appraisal methods also needed to assess financial criteria for success.
- ▪
- Business objectives matching project aims.
- AO2 Application
- Limited application,
- applies knowledge to LBM once.
- Developed application,
- +
- applies knowledge to LBM twice.

# Solution 4

- Application is making use of relevant case information not just repeating it.
- ▪
- Hard rock mine follows the hot water mine, which will be nearing completion of building and about to start production.
- ▪
- need to buy equipment for drilling and factory.
- ▪
- data for CPA from partners, suppliers and R and D.
- ▪
- Minimum project duration is just over two years.

# Solution 4

- ▪
- CPA relates to the complex sequence of activities (A to H) involved in establishing the hard rock mine.
- ▪
- The planned start of the mine is in two years' time (104 weeks), but the calculated duration is 115 weeks.
- ▪
- CPA uses data obtained from mining industry sources and the LBM Research and Development (R&D) team.
- ▪
- Lithium is found 500 metres underground.

# Solution 4

- ▪
- Activity C (Obtain drilling machinery) has 15 weeks of float.
- 9609/33
- October/November 2025
- AO3 Analysis
- Limited analysis
- – candidate shows one link in the chain of analysis.
- Developed analysis
- – candidate shows two or more links in the chain of analysis.
- ▪

## Solution 4

- CPA identifies the critical activities (A-H route through nodes 1–2-4–5–7–8, for example) which, if delayed, will delay
- the whole project duration. This allows LBM, a new mining operator, to focus its limited resources and management
- supervision on these tasks
- , thereby preventing cost overruns
- .
- ▪
- CPA reveals that the current duration (115 weeks) already exceeds the planned start time (2 years/104 weeks). This
- forces LBM to find ways to shorten the duration to meet the original target

# Solution 4

- , maximising early revenue generation
- .
- ▪
- The calculation of float (e.g., 15 weeks for activity C) enables Astor to reallocate resources away from non-critical tasks
- to critical ones
- , helping to reduce the overall project duration and improving efficiency
- .
- ▪
- As this is the first mining activity for LBM there is no past experience to rely on therefore the data may be inaccurate

# Solution 4

- AO4 Evaluation
- Limited evaluation
- – limited supported judgement and/or a weak attempt at evaluative comment.
- Developed evaluation
- – supported judgement and/or reasonable evaluative comment.
- Developed evaluation in context
- – supported judgement in context and/or reasonable evaluative comment in
- context.
- ▪
- Supported judgement as to the importance of CPA.

# Solution 4

- ▪
- CPA is highly important for the success of the hard rock mine because the project is complex and already forecasted to
- be delayed (115 weeks vs 104 weeks goal). CPA provides the necessary planning and monitoring framework to
- potentially shorten this delay and secure timely revenue.
- ▪
- Factors that the impact might depend on:
- –
- CPA relies entirely on the accuracy of time estimates provided by the R&D team and suppliers. If these estimates

## Solution 4

- are inaccurate (e.g., optimistic), the critical path may be wrong, leading LBM to misallocate resources and still fail
- to achieve the minimum duration.
- ▪
- CPA must be continuously monitored and updated as the project progresses to account for unexpected operational
- difficulties (e.g., drilling 500m underground).
- ▪
- Project success also depends on availability of finance, equipment and appropriate employees. Without them the
- project is less or not likely to succeed.

# Solution 4

- 9609/33
- October/November 2025
- Accept all valid responses
- Exemplar L3 Evaluation
- The benefit of CPA is limited by its reliance on assumptions. CPA's success depends entirely on the accuracy of the time
- estimates for activities like D (Install drilling machinery) and E (Test drill exercise), which were obtained from mining
- industry sources and the LBM Research and Development (R&D) team. Since LBM is a new operator in Country G, and the

## Solution 4

- scale of this project (drilling 500 m) is complex, these estimates may be overly optimistic or inaccurate. If the critical path
- calculation is flawed, LBM might misallocate resources, potentially causing unnecessary delays in the 115-week plan or
- wasting scarce finance.
- 9609/33
- October/November 2025
- 5
- Evaluate LBMs decision to use two different approaches to HRM.
- Level
- AO1 Knowledge

# Solution 4

- and understanding
- 2 marks
- AO2 Application
- 2 marks
- AO3 Analysis
- 2 marks
- AO4 Evaluation
- 6 marks
- 3
- 5–6 marks

# Solution 4

- Developed evaluation in context
- ▪
- A developed judgement/conclusion
- is made in the business context.
- ▪
- Developed evaluative comments
- which balance some key
- arguments in the business context.
- 2
- 2 marks

## Solution 4

- Developed
- knowledge of
- relevant key term(s)
- and/or factor(s) is
- used to answer the
- question.
- 2 marks
- Developed
- application of
- relevant point(s) to

## Solution 4

- the business
- context.
- 2 marks
- Developed
- analysis
- that identifies
- connections
- between causes,
- impacts and/or
- consequences.

# Solution 4

- 3–4 marks
- Developed evaluation
- ▪
- A developed judgement/conclusion
- is made.
- ▪
- Developed evaluative comments
- which balance some key
- arguments.
- 1

# Solution 4

- 1 mark
- Limited knowledge
- of relevant key
- term(s) and/or
- factor(s) is used to
- answer the question.
- 1 mark
- Limited application
- of relevant point(s)
- to the business

# Solution 4

- context.
- 1 mark
- Limited analysis
- that identifies
- connections
- between causes,
- impacts and/or
- consequences.
- 1–2 marks
- Limited evaluation

# Solution 4

- ▪
- A judgement/conclusion is made
- with limited supporting
- comment/evidence.
- ▪
- An attempt is made to balance the
- arguments.
- 0
- 0 marks
- No creditable

## Solution 4

- response.
- 0 marks
- No creditable
- response.
- 0 marks
- No creditable
- response.
- 0 marks
- No creditable response.
- 12

# Solution 4

- 9609/33
- October/November 2025
- 5
- Responses may include:
- AO1 Knowledge and understanding
- ▪
- Understanding of ‘hard HRM:
- –
- viewing employees as a inputs for the business, close monitoring, and control, training to improve business

# Solution 4

- performance, little delegation of decision making.
- –
- leadership style likely to be autocratic
- –
- power for leader comes from rewards, position or coercion.
- –
- little space for emotional intelligence.
- –
- One-way formal communication (top down)
- ▪

# Solution 4

- Understanding of 'soft' HRM: employees are individuals, to be developed, e.g. by appraisal and training, consultation
- and delegated decision making.
- –
- leadership style likely to be democratic or laissez-faire.
- –
- leader likely to use contingency leadership
- –
- power for leader comes from expertise, information or charisma.
- –

## Solution 4

- transformational leadership possible.
- –
- emotional intelligence employed.
- –
- Two-way communication, possibly informal.
- AO2 Application
- Limited application,
- applies knowledge to LBM once.
- Developed application,
- +

# Solution 4

- applies knowledge to LBM twice.
- Application is making use of relevant case information not just repeating it.
- ▪
- Soft HRM is used for the 35 graduate employees.
- ▪
- These graduates have delegated powers and decide their own work patterns (autonomy).
- ▪
- Graduates are involved in R&D, mapping technology, and developing techniques.
- ▪

## Solution 4

- Hard HRM is used for the 150 new machine operators at the hot water mine.
- ▪
- These new employees are closely supervised by ten technology specialists.
- 9609/33
- October/November 2025
- 5
- AO3 Analysis
- Limited analysis
- – candidate shows one link in the chain of analysis.
- Developed analysis

# Solution 4

- – candidate shows two or more links in the chain of analysis.
- ▪
- changing HRM approaches takes time and cost to plan details.
- ▪
- Using Soft HRM for graduates increases their motivation and creativity, which is crucial for maximizing the efficiency of
- mapping technology and generating innovative mining techniques
- , thereby increasing LBM's competitiveness
- .
- ▪

# Solution 4

- Small number of graduate employees should be easy to manage and soft approach will reuce need for middle
- management
- therefore reducing costs
- .
- ▪
- Hard HRM focuses on tight control and efficiency for the 150 machine operators. This approach ensures
- standardisation and low labour costs,
- which is important for LBM, as it is currently an unprofitable company
- .

# Solution 4

- ▪
- The stark difference in treatment (delegation vs. close supervision) risks creating resentment and conflict between the
- two groups, potentially leading to poor morale
- and resistance among the machine operators, threatening
- operational stability
- .
- ▪
- Production requires clearly defined tasks so more control/autocracy can be more efficient
- .

# Solution 4

- ▪
- Very tight time scale for hard rock project means HRM changes must be well planned
- AO4 Evaluation
- Limited evaluation
- – limited supported judgement and/or a weak attempt at evaluative comment.
- Developed evaluation
- – supported judgement and/or reasonable evaluative comment.
- Developed evaluation in context
- – supported judgement in context and/or reasonable evaluative comment in

## Solution 4

- context.
- ▪
- Supported judgement as to the likely effectiveness of the approach.
- ▪
- The decision to use dual approaches is largely appropriate because the nature of the jobs is vastly different (creative
- R&D vs. standardised machine operation). The soft approach is essential for knowledge workers (graduates) to foster
- innovation, while the hard approach is effective for large groups performing repetitive tasks in a controlled industrial
- environment like a mine.

# Solution 4

- 9609/33
- October/November 2025
- 5
- ▪
- Factors that the impact might depend on:
- –
- The degree of separation between the two employee groups;
- –
- LBM's ability to minimise perceived unfairness;
- –

## Solution 4

- the specific skills required by the machine operators (if tasks are complex, hard HRM may lead to high error rates
- and reduced quality).
- –
- Can LBM afford to change? In time for recruiting and starting production?
- ▪
- The decision is strategically sound but requires careful management. LBM must ensure communication and
- compensation systems do not exacerbate the cultural divide, or the benefits of high R&D output might be negated by
- industrial relations problems at the mine site.

# Solution 4

- Accept all valid responses
- Exemplar L3 Evaluation
- The decision to use two different approaches is strategically sound and appropriate because it matches the HRM approach
- to the specific needs of each job role (innovation for R&D vs. control for operations).
- LBM's dual HRM strategy is necessary for functional efficiency but dangerous for internal culture. The success of this
- decision is conditional upon management (led by Astor) successfully mitigating the risk of conflict. LBM must invest in

# Solution 4

- transparent communication explaining why the roles are managed differently and ensure that the machine operators feel
- valued through factors other than autonomy, such as fair compensation or training opportunities, to prevent internal
- dissatisfaction from undermining the profitability of the new mine

# Question 3

9609/31 J25 ▪ Q3 ▪ 12 marks

**3** **(a)** Using the data in Table 1.1, calculate the average monthly labour productivity for January to May 2025.

# Question 3

**(b)** Using the data in Table 1.1, calculate the percentage of output that failed to meet quality standards for January to May 2025.

# Question 3

**(c)** Evaluate the best approach for WS to improve the performance of its production employees.

# Solution 3

**(a)**

**Mark scheme**

- Using the data in Table 1.1, calculate the average monthly labour productivity for January to May 2025.
- Average monthly labour productivity = Total output / Number of employees
- OR
- 90 000 / 480 [1]
- 187.5 (2) OR 188 [2]

# Solution 3

**(b) Mark scheme**

- Using the data in Table 1.1, calculate the percentage of output that failed to meet quality standards for January to
- May 2025.
- Percentage failing to meet quality standards / output $\times$ 100
- OR
- 15 000 / 90 000 $\times$ 100 [1]
- 16.67% OR 16.7% OR 17% [2]
- Accept 16.66% and 16.6% [2]

# Solution 3

- 2
- 9609/31
- May/June 2025

# Solution 3

**(c) Mark scheme**

- Evaluate the best approach for WS to improve the performance of its production employees.
- Level
- AO1 Knowledge
- and understanding
- 2 marks
- AO2 Application
- 2 marks

# Solution 3

- AO3 Analysis
- 2 marks
- AO4 Evaluation
- 6 marks
- 3
- 5–6 marks
- Developed evaluation in context
- ▪
- A developed judgement/conclusion
- is made in the business context.

# Solution 3

- ▪
- Developed evaluative comments
- which balance some key
- arguments in the business context.
- 2
- 2 marks
- Developed
- knowledge of
- relevant key term(s)
- and/or factor(s) is

## Solution 3

- used to answer the
- question.
- 2 marks
- Developed
- application of
- relevant point(s) to
- the business
- context.
- 2 marks
- Developed

# Solution 3

- analysis
- that identifies
- connections
- between causes,
- impacts and/or
- consequences.
- 3–4 marks
- Developed evaluation
- ▪
- A developed judgement/conclusion

# Solution 3

- is made.
- ▪
- Developed evaluative comments
- which balance some key
- arguments.
- Indicative content
- AO1 Knowledge and understanding
- Limited knowledge
- will be demonstrated through knowledge of measures of performance.
- Developed knowledge

## Solution 3

- +
- will be demonstrated through knowledge of measures of performance and knowledge of
- how to improve performance of production employees.
- ▪
- Employee performance measured by productivity, absenteeism, labour turnover, accident rates, wastage/product
- rejection rates.
- ▪
- HRM components: motivation, management styles.
- ▪

# Solution 3

- Reference to theories on motivation including: Taylor, Mayo, Herzberg and Maslow
- ▪
- Possible techniques to improve performance include:
- ▪ Providing better equipment and training.
- ▪ Appropriate motivation techniques for employees.
- ▪ Realistic informed target setting.
- ▪ Bonus payments for production/waste targets.
- ▪ Facilitating employee participation in decision making and/or working arrangements.
- AO2 Application

# Solution 3

- Limited application,
- applies knowledge to WS once.
- Developed application,
- +
- applies knowledge to WS twice.
- ▪
- Batch production on assembly lines.
- ▪
- Information from Table 1.1 showing employee performance measures.
- ▪

# Solution 3

- Increase in number of units failing to meet quality standards.
- ▪
- Increase in labour turnover.
- ▪
- Increase in number of accidents.
- ▪
- Use of bullet points on employee performance.
- ▪
- Wages 10% more than industry average.
- ▪

# Solution 3

- Complaints about production targets.
- ▪
- On-the-job training.
- ▪
- Limited opportunities for career progression.
- ▪
- Strict management style.
- 9609/31
- May/June 2025
- AO3 Analysis

# Solution 3

- Limited analysis
- – candidate shows one link in the chain of analysis.
- Developed analysis
- – candidate shows two or more links in the chain of analysis
- Chains of reasoning developing how techniques will impact performance:
- ▪
- Bonuses for achievement of production targets will provide a financial incentive for production employees encouraging
- them to be more focused on increasing output and therefore increasing productivity.
- ▪

# Solution 3

- Off the job training could make employees feel more valued and increase skills therefore improving motivation and
- quality of work which will reduce the number of defects and lead to higher output.
- ▪
- Empowering workers to make more decisions about their working day will reduce the conflict caused by the current
- strict management style and have a positive impact on motivation therefore resulting in a reduction in labour turnover.
- ▪
- Possible reasons for decreased performance include:
- ▪

# Solution 3

- Little training ‘expected to learn on job’, non-participation in decision making ‘follow instructions’, complaints about
- targets.
- ▪
- Limited opportunities for progression.
- ▪
- All measures in Table 1.1 show decreasing performance.
- ▪
- Pay does not seem to be a factor ‘paid 10% more than industry average’.
- AO4 Evaluation

# Solution 3

- Limited evaluation
- – limited supported judgement and/or a weak attempt at evaluative comment.
- Developed evaluation
- – supported judgement and/or reasonable evaluative comment.
- Developed evaluation in context
- – supported judgement in context and/or reasonable evaluative comment in
- context.
- Justified recommendations based on analysis include:
- ▪
- More and better training for employees and supervisors.

# Solution 3

- ▪
- More participation in decision making.
- ▪
- More freedom to carry out tasks as employees decide.
- ▪
- More motivation techniques to be applied e.g. regular appraisals, non-financial motivators.
- ▪
- Clear realistic targets set, possibly with bonuses for meeting them.
- ▪

# Solution 3

- Regular meetings with employees and/or their representatives.
- ▪
- Balanced argument on the advantages and disadvantages of a given approach.
- ▪
- Weighting of advantages and disadvantages of a given approach.
- Accept all valid responses
- 9609/31
- May/June 2025