

Paper Code: M-EPA-IMT3003

# Level 3

# Improvement Technician - EPA Mock Knowledge Examination

## Information for registered centres

The seal on this examination paper must only be broken by the candidate at the time of the examination. Under no circumstances should a candidate use an unsealed examination paper.

## Information for candidates

**Under no circumstances should you, the candidate, use an unsealed examination paper.**

This examination consists of **40 multiple-choice** questions.

The exam is worth **40 marks**, with a Pass being **25 marks**, Merit **30 marks**, and Distinction **36 marks**.

The duration of this examination is **40 minutes**.

You are **NOT** allowed any assistance to complete the answers.

You must use a pencil to complete the answer sheet - pens must **NOT** be used.

When completed, please leave the **examination answer sheet (EAS)** on the desk.

### EXAMINATION ANSWER SHEET (EAS) INSTRUCTIONS:

For each question, fill in **ONE** answer **ONLY**.

If you make a mistake, ensure you erase it thoroughly.

You must mark your choice of answer by shading in **ONE** answer circle only.

Please mark each choice like this:

01  A  B  C  D **ANSWER COMPLETED CORRECTLY**

**Examples of how NOT to mark your examination answer sheet (EAS). These will not be recorded.**

01  A  B  C  D **DO NOT** partially shade the answer circle  
**ANSWER COMPLETED INCORRECTLY**

01  A  B  C  D **DO NOT** use ticks or crosses  
**ANSWER COMPLETED INCORRECTLY**

01  A  B  C  D **DO NOT** use circles  
**ANSWER COMPLETED INCORRECTLY**

01  A  B  C  D **DO NOT** shade over more than one answer circle  
**ANSWER COMPLETED INCORRECTLY**

All candidates **MUST** sign the Examination Answer Sheet (EAS) in the bottom right-hand corner of the page before leaving the examination room.

1

According to the Health and Safety at Work etc. Act 1974, it is an employer's duty to:

- A. safeguard the health and safety of all employees
- B. ensure all employees read the health and safety policy
- C. provide manual handling training to all employees
- D. give all staff a copy of the health and safety policy

2

An example of demonstrating mandatory regulatory compliance is achieved by:

- A. adhering to the staff and management expenses policy
- B. strictly following the unlimited overtime policy
- C. displaying the Health and Safety Executive (HSE) approved law poster on all business premises
- D. complying with the requirement outlined in the company absence management policy

3

What are the **key** skills that a leader should use when managing change?

- A. Communication, decision making skills and the ability to withstand challenges
- B. Communication, financial acumen, time management and forward thinking
- C. Communication, decisiveness, an authoritarian leadership style and operational leadership
- D. Communication, emotional intelligence, empathy and strategic thinking

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A method to overcome organisational barriers to change is:

- A. providing incentives and rewards
- B. opening communication channels
- C. restructuring the entire organisation
- D. offering individual coaching sessions

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The **most** appropriate way to overcome individual resistance to change is by:

- A. ensuring the benefits of change are understood, communicating clearly and inviting input and ideas from the employee
- B. providing minimal information regarding the change but give ownership to the employee as soon as possible
- C. implementing a transition to the new working methods, but without changing the strategy
- D. confirming the employee understands the consequences of not adopting the change, and then implementing the change as quickly as possible

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What support would **most** benefit employees when accepting changes in their organisation?

- A. Praise
- B. Financial bonus
- C. Coaching
- D. Team meetings

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Which methods are the **most** effective means of reinforcing change?

- A. Celebrating success, feedback, corrective action and performance management
- B. Use of disciplinary procedure, management oversight and data reviews
- C. Project team meetings, use of a communications plan and stakeholder feedback
- D. Steering groups, inclusion practices, management team meetings and senior leader communications

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What is the fundamental purpose of Six Sigma?

- A. To show leaders how to reduce waste
- B. To empower teams to solve issues
- C. To provide a structure to project leads
- D. To correct problems in any given process

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What is the purpose of the 'Analyse' phase in the DMAIC problem-solving approach of Six Sigma?

- A. To identify and select potential solutions for improvement
- B. To evaluate and understand the root causes of the problem
- C. To measure the effectiveness of implemented solutions
- D. To establish baseline performance metrics and collect data

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From the 8D framework, what is the impact of D3 interim containment actions?

- A. To stop any effects of a problem reaching the customer
- B. To pause continued waste material production
- C. To prevent excessive scrap by stopping the defective process
- D. To improve financial forecasts through problem solving

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According to the Toyota production system (TPS), what are the 3 principles of Lean production?

- A. Remove waste, enable employee contributions and create value
- B. Just in time supply chain, improve performance and eliminate waste
- C. Provide value to the customer, eliminate waste and continuous improvement
- D. Reduce waste, continuous improvement and financial performance

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When would be the **most** likely time to use a scoping tree?

- A. During a stock market analysis
- B. When initiating a complex project
- C. When conducting a customer survey
- D. During a product pricing strategy meeting

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A decision matrix is a chart that allows a team or individual to:

- A. systematically identify, analyse and rate the performance of relationships between sets of information
- B. identify all stakeholders that must be included in any project communications
- C. assign roles and responsibilities to the appropriate project team members
- D. list and monitor activities carried out and capture outputs

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Which of the following would **most** likely be contained in a typical data collection plan?

- A. Data that is new and not previously used for other projects
- B. Historical, archived or existing data that has been previously collected and that can be verified as correct
- C. The project objective, the type of data to be collected and the expected results of the collection
- D. The type of data to collect, who will collect it, the source of data and the sample size

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What is the purpose of exploratory data analysis?

- A. To investigate any relationships, errors, patterns or outliers in the data set
- B. To ensure proof of concept for the projects development
- C. To investigate that the project selection is correct and the error is identified
- D. To ensure risk is minimised in the project and waste is identified early in analysis

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What is the purpose of a problem statement?

- A. To supply the project lead with a continued reference throughout the project
- B. To provide a short explanation of the issue and the change you wish to make
- C. To start a project and gain support from senior stakeholders for resource allocation
- D. To contribute insight into potential savings and waste reduction for all stakeholders

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When clarifying the problem definition, the goal statement should contain:

- A. what is in and out of scope
- B. a SIPOC
- C. stakeholder analysis
- D. measurable and time bound terms

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What is a benefit of a Suppliers, Inputs, Process, Outputs and Customers (SIPOC) diagram?

- A. It offers key decision makers a detailed analysis of only the outputs of a process
- B. It gives people who are unfamiliar with a process a high-level overview of its inputs and outputs
- C. It provides the business with an accurate breakdown of costs for all process inputs against outputs
- D. It informs suppliers of the value they add to the process outputs of their customers

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How would process mapping help a team achieve a successful outcome in an improvement project?

- A. Opportunities to enhance the process will be even easier to see and quantify
- B. The costs of each part of the process can be monitored more closely to prevent overspend
- C. Project team responsibilities for each part of the process can be agreed and clearly indicated
- D. The time it takes to finish a process cycle can be easily observed

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Under what circumstances would value and waste analysis be used?

- A. To understand when there is a need to determine the amount of waste produced by an organisation
- B. To determine how non-value-added operations can be improved to add value to a process
- C. To calculate the cost of waste to the organisation and its customers
- D. To identify and eliminate hidden costs that do not add value for the customer

21

An example of discrete data in performance metrics is:

- A. time
- B. characteristics
- C. length
- D. weight

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What is meant by the term data stratification?

- A. The use of data to produce histograms
- B. The use of data to produce scattergraphs
- C. Data being sorted into quantitative and qualitative sources
- D. Data being sorted into identified groups

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What factors need to be considered when determining the size and number of samples to take when acquiring data?

- A. The simplicity of the sample measures, ease of measuring the samples and convenience
- B. The type of data, the objectives of collecting it and the level of confidence needed in making conclusions
- C. The objective of collecting the data, prior knowledge and ensuring items that are not easy to measure are avoided
- D. The situation, the data type and availability of the team to conduct the sample

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Discrete data would be **most** commonly represented using:

- A. pie charts
- B. bar charts
- C. histograms
- D. spaghetti diagrams

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When collecting data, observation is used to:

- A. understand something as it happens
- B. calculate averages and probabilities
- C. understand past data
- D. gather confidential information

26

Which data collection method would **most** likely collect quantitative data?

- A. Focus group discussion
- B. Case study analysis
- C. In-depth interviews
- D. Surveys

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The purpose of 'operational definitions' when collecting data is to ensure:

- A. that data collection is based on common and consistent data
- B. everybody understands the overall business objectives
- C. all operations in the process are included in the data collection
- D. correct interpretation of results and understanding the cost of collection

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When developing a measure strategy, why is it important to include both input and output measures?

- A. Output measures always add value for the customer, input measure add cost for the business
- B. Output measures can take longer to show improvement whereas inputs can be changed more swiftly
- C. Output measures compared to input measures establish waste percentage
- D. Output measures and input measures can both be used to show different measures within the strategy

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A control chart is:

- A. a data point plotted over lines linked by a trend line
- B. a collection of columns that show distribution
- C. a line of central tendency with upper and lower limits
- D. a group of bars plotted over a timeline

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The expected outcome of a process capability analysis is to:

- A. provide early indication as to whether the process contains non-value activities
- B. calculate the profitability of the process and indicate where savings can be achieved
- C. determine which parts of the process are capable of producing defects
- D. show whether a process is fully capable of meeting customer requirements

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Why is continuous data used in capability analysis rather than discrete data?

- A. Continuous data provides more detailed information about process performance
- B. Discrete data is more commonly found in manufacturing processes
- C. Continuous data is easier to collect and analyse during manufacturing processes
- D. Discrete data allows for better and easier assessment of process capability

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When would a histogram be used?

- A. To show data over time
- B. To show distribution
- C. To show capability
- D. To show percentages

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When conducting experiments to find causes of variation, 'one factor at a time' means:

- A. fixing one factor at a time, then another and so on, until all variable factors have been tested to see the effect on output
- B. changing one factor at a time, then another and so on, until all factors have been changed to see the effect on outputs
- C. keeping one factor at a time fixed, while varying others to see the effect on a process or output
- D. adjusting only one factor at a time while keeping others fixed to see the effect on a process or output

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What is a **key** benefit of active analysis in decision-making?

- A. It promotes critical thinking and problem-solving skills
- B. It eliminates the need for data collection and data analysis
- C. It minimises the involvement of stakeholders in the process
- D. It relies solely on historical data for decision-making

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When would Plan, Do, Check, Act (PDCA) be used?

- A. All of the time, to provide single acts of change to improve processes
- B. All of the time, within a manufacturing production line
- C. All of the time, it is a continuous improvement methodology
- D. All of the time, within a project setting with inexperienced teams

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What are the **main** benefits of carrying out a brainstorming session?

- A. Correct problem solving and money saving initiatives
- B. Multiple diverse perspectives and a sense of teamwork
- C. Create individual ideas for new process solutions
- D. Pushing teams outside their comfort zones

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An idea sharing method in which participants organise their ideas and identify common themes is known as:

- A. relationship analysis
- B. multi-voting
- C. affinity grouping
- D. solution grouping

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Which of the following is a known methodology used when selecting projects?

- A. OFAT
- B. PIP
- C. GROW
- D. SMART

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A control mechanism in any process ensures that:

- A. there is no need to monitor processes which can only vary from pre-set limits with the authorisation of a responsible person
- B. processes are monitored to ensure they do not vary from pre-set limits and corrective action begins if unwanted deviations are found
- C. processes are controlled to ensure there is no waste, and there are zero product defects that reach the end customer
- D. there is a rigorous authorisation process in place to ensure all operators adhere to procedures unless otherwise agreed by their immediate manager

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What do processes need in order to be sustainable?

- A. Reliability, repeatability, measurability and control
- B. Usability, repeatability and to be understandable
- C. They must be able to save on waste, cost and time
- D. For all stakeholders to be able to understand the process, implement changes and see the benefits

# Level 3

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