# Knowledge Assessment

# **Event 1 of 2**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MEM15002A - Apply quality systems (1)

\*\*\*This unit sits in the qualifications below – This assessment is not to be amended\*\*

### Qualification/Course code, name and release number

MEM30205 – Certificate III in Engineering – Mechanical Trade (3)

MEM30305 – Certificate III in Engineering – Fabrication trade (4)

\*\*\* Amend the qualification box before distributing to the student. The information here should only contain the qualification the student is enrolled in\*\*

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*Block B Level 1*

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This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Instructions for the trainer and assessor** | This is a written assessment and will be assessing the student on their knowledge of the unit MEM15002A Apply quality systems  This assessment is in 3 parts:   1. Multiple choice questions 2. True or False questions 3. Short answer questions   Model answers, sample responses or a criteria for each question are provided below.  Use these to support your judgement when determining a satisfactory result.  The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct. However, if a student provides information other than indicated below, and in the professional opinion of the assessor it is appropriate and meets the intent of the question, it may be considered correct.  The assessment feedback page must be signed by both the student and the assessor so the student displays that they have received, understood and accepted the feedback.  Complete the assessment feedback to the student and ensure you have taken a copy of the assessment prior to it being returned to the student.  Ensure the students name appears on the bottom of each page of the submitted assessment. |
| **About this marking guide** | The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct.  All questions must be answered correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each answer/response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the assessment question and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the answer sufficient in terms of length and depth?   + Currency – has the work been done so recently as to be current?   + Authenticity – is this work the student’s own authentic work? * Principles of Assessment:   + Fairness – individual student’s needs are considered in the assessment process   + Flexibility – assessment is flexible to the individual student   + Validity – any assessment decision is justified, based on the evidence of performance of the student   + Reliability – evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment * Dimensions of competency   + Task skills   + Task Management Skills   + Contingency Planning Skills   + Job Role Environment Skills |
| **Student must provide** | Pens, pencils, eraser, 150mm rule |
| **Assessor must provide** | Classroom suitable for conducting written assessment test |
| **Time allowed** | 1 Hour |

## Part 1: Multiple choice

Read the question and each answer carefully. Put an X in the table next to your chosen answer.

1. (RK5, RK6, RK18) (RS1) (PC2.3) Before commencing work on a piece of equipment, all relevant safety and technical information could be accessed in:

Table 1: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Technical manuals/specifications |  |
| 1. Service logbooks and maintenance manuals |  |
| 1. Safe operating procedures (SOP) |  |
| 1. Drawings and exploded views |  |
| 1. All of the above | X |

1. (RK17) (RS1) Where would you find the Standard Operating Procedure for a machine?

Table 2: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. On or next to a machine |  |
| 1. Manufactures handbook |  |
| 1. Supervisor/managers office |  |
| 1. All of the above | X |

1. (RK17) (RS1) Why do we use SOPs’?

Table 2: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. To show you how well a machine runs |  |
| 1. To follow a set of instructions to complete a task | X |
| 1. Show emergency evacuation routes |  |
| 1. To avoid producing products of minimal quality |  |

1. (RK17, RK18) If you are going onto a new worksite, whom should you talk to first about site WHS procedures?

Table 4: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Your manager |  |
| 1. Site manager | X |
| 1. Safe Work NSW |  |
| 1. Store person |  |

1. (RK1, RK4) In the manufacturing environment, what is the term for continuous improvement that ensures quality is maintained throughout all stages of the process.

Table 5: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Quality link |  |
| 1. Quality chain | X |
| 1. Quality series |  |
| 1. Quality value |  |

1. (RS5) Which of the following people are the most important in the successful function of a quality control system?

Table 6: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The Manager |  |
| 1. The Supervisor |  |
| 1. The Tradesmen |  |
| 1. All of the above | X |

1. (RK6) (RS5) Who is responsible for the quality of products being produced by a machine?

Table 7: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The leading hand |  |
| 1. The customer |  |
| 1. Quality control inspector |  |
| 1. The machine operator | X |

1. (RK3, RK7, RK9) Who is affected the most by a poor quality product?

Table 8: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The Company | X |
| 1. The customer |  |
| 1. The machine operator |  |
| 1. The production supervisor |  |

1. (RK6) (RS5) Who should be responsible for ensuring a shaft’s diameter meets drawing specifications?

Table 9: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Supervisor |  |
| 1. Customer |  |
| 1. Quality control inspector |  |
| 1. Machinist | X |

1. (RK4, RK11) (PC2.2) When should a product be inspected?

Table 10: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Just before shipping to the customer |  |
| 1. At each stage of the production | X |
| 1. In the quality control department |  |
| 1. In the warehouse |  |

1. (RK8,8.1,8.2,8.3, RK15, RK16) What are the benefits of a good quality system in an engineering workshop?

Table 11: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Quality products | X |
| 1. Reduced costs | X |
| 1. Customer confidence, satisfaction and loyalty | X |
| 1. Time spent on quality control can be reduced |  |

1. (RK3, RK4, RK12) Quality improvement procedures address which two key areas:

Table 12: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The short cuts |  |
| 1. The product | X |
| 1. The sales record |  |
| 1. The process | X |

1. (RK8.4, RK8.6, RK8.7) What are the benefits of good quality? (please select All the correct responses)

Table 12: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Good reputation | X |
| 1. Having a process to follow to solve problems | X |
| 1. Increased competiveness | X |
| 1. Less accidents |  |

1. (RK9.1,9.2,9.3) What are the costs or consequences of poor quality production within a company? (please select All the correct responses)

Table 12: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Lost customers | X |
| 1. Accidents | X |
| 1. Increased competiveness | X |
| 1. Reduced costs |  |

## Part 2: True or false

Read the question and then write **True** or **False** in the space provided.

Table 1: True or false

| Question | Write *True* or *False* |
| --- | --- |
| 1. (RK9) Improvement and maintenance of a quality system has a cost. | T |
| 2. (RK11) (RS6) Inspecting the finished product is the only way to eliminate the cause of the defects. | F |
| 3. (RK12, RK13) (PC2.1) Plan, do, check and act is a quality cycle for the continuous improvement of people and processes. | T |
| 4. (RK1) (PC2.2, 2.3) ISO 9001 is the recognised standard for the requirements of a quality management system. | T |
| 5. (RK9.1, RK15, RK16) (RS6) (PC2.6) Good communication involving customers and suppliers can eliminate potential problems before they escalate. | T |
| 6. (RK8.4, RK9, 9.1) Dissatisfied customers can damage a company’s reputation. | T |
| 7. (RK9, RK11) Defective design is a common cause of faulty products. | T |
| 8. (RK3, RK4, RK12) (PC2.1) Quality circles are a common method of including production workers in the quality improvement process. | T |
| 9. (RK2) A quality system is a collection of business processes focused on consistently meeting customer requirements and enhancing their satisfaction | T |

## Part 3: Short answer

Read the question carefully. Your answer should be a minimum of 1 word but no longer than 50 words.

1. (RK2) What does the term quality mean?

Fitness for purpose

A product that meets or exceeds customer expectations

1. (RK1, RK4) Who is an internal customer?

Anyone within the same organization that are involved in the process of supplying goods or services. Example: an assembly line worker is a customer to the person supplying parts to an assembly.

1. (RK1, RK4) Who is an external customer?

Anyone outside the company who purchases or uses the product

1. (RK3 RK14) Give four (4) reasons why quality procedures and systems are important.

Responses could be from any of these listed below

* Stay competitive
* Eliminates waste
* Eliminates rework
* Stay current with industry
* High productivity
* Meet customers' needs

1. (RK8.5,9.4,9.5,9.6) Job satisfaction is a key benefit of good quality production. List three personal consequences of **low** job satisfaction and poor quality systems?

Responses could be from any of these listed below

* Lost time/sickness
* Conflict
* Low morale
* loss of confidence/errors
* Accidents

1. (RK7) State two (2) reasons why a job must conform to specification.

Responses could be from any of these listed below

* So the limits of fit can be achieved over multiple jobs
* Comforming to specification allows the customer to work with several different suppliers
* So a job meets safety standards (size, strength, hardness, capacity)

1. (RK8.8, RK14, RK16) (PC2.7) In applying the principles of good quality, why is it important for an Organisation to keep up-to-date with technology?

Responses could be from any of these listed below

* To stay current in the marketplace
* To help the organisation maintain a competitive edge (stay competitive)
* Can compete at the same level as other companies
* Reduce the costs of maintaining outdated technology
* Helps organisations stay organised

1. (RK12) List two (2) methods where a process can be improved?

Responses could be from any of these listed below

* Documentation and reporting
* Good manufacturing techniques
* Continual review of product
* Quality machinery
* Involving production employees in process improvement

1. (RK5, RK7) (RS1, RS4) (PC1.2, 2.3)Give **an** example of the steps you would perform to check a part for conformance to specifications.

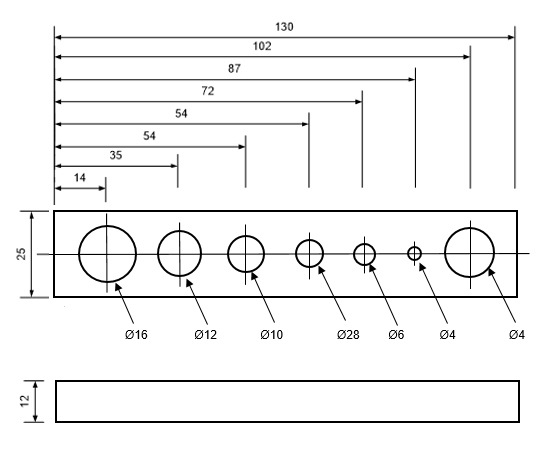
* Quality control inspector inspecting the part against its blueprints/drawings
* Benchmarking, checking the part manufactured against a known sample

1. (RK1.1,1.2,1.3,1.4, RK12) (PC2.7) The following is a list of quality system terminology. Complete the table provided below by matching the correct System Terminology with its Concept. **Example supplied.**
2. **Quality Assurance**
3. **Quality Control**
4. **Quality Inspection**
5. **Total Quality Control (TQC)**

|  |  |
| --- | --- |
| Concept | System Terminology |
| Checking, measuring, or testing of one or more product characteristics and relate the results to confirm compliance | 1. Quality Inspection |
| Maintaining a desired level of quality of a product at every stage of the manufacturing process to meet customers’ requirements | 1. **Quality Assuranc**e |
| Procedure to ensure that a manufactured product or service meets the requirements of the client or customer | 1. Quality Control |
| Application of quality management principles to all areas of manufacturing from design to delivery combining both quality control and quality assurance to meet customers’ requirements | 1. Total Quality Control (TQC) |

1. (RK11)(RS1, RS3, RS10) **Scenario:** You are to produce the following item from the drawing in Figure 1. Drill Plate. Review this drawing for errors and record the errors you have identified and the proposed modifications/corrections in the table provided below.

**Figure 1 – Drill Plate (all dimensions in mm)**

****

|  |  |
| --- | --- |
| **Error** | **Modification/Correction** |
| Two dimensions of 54mm | Remove duplication and redo all dimensions above the 54mm (missing dimension 117mm) |
| Duplicated Ø4 hole | Should be Ø14 hole |
| Ø28 hole | Should be Ø8 Thread |

12. (RK10) The following is a procedure for reporting defects in a quality improvement system. Using the steps listed below indicate in the correct order the sequence of the procedure. Follow the Plan Do Check and Act Cycle. **Step 1 answer supplied.**

|  |  |
| --- | --- |
| Procedure cycle (Plan Do Check and Act) | Step # |
| What is the problem we need to solve | **1** |
| What resources do we need and have | 3 |
| Clarify the plan | 5 |
| Apply the action you have in the plan | 4 |
| What is the best solution to fix the problem | 2 |
| If all specifications of the job conform then apply the initial plan. | 7 |
| Have the problems from the plan been addressed. Make sure there are no reoccurring mistakes | 6 |

13. (RK9.2) Accidents are a consequence of of poor quality systems. Give two (2) examples of the cause of accidents in the workplace.

Responses could be from any of these listed below

* Extreme job demands and workloads causing fatigue resulting in accidents.
* Using bad habits and dangerous work methods to achieve a outcome.
* Using poor quality or dangerous machinery creating hazards

Note: These methods should be changed in the quality improvement system.