# Knowledge Assessment

**Assessment event 1 of 2**

## Criteria

### Unit code, name and release number

MSL933008 - Perform calibration checks on equipment and assist with its maintenance (1)

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

MSL30118 - Certificate III in Laboratory Skills (1)

MSL40118 - Certificate IV in Laboratory Techniques (1)

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

## Student details

### Student number

### Student name

## Assessment Declaration

* This assessment is my original work and no part of it has been copied from any other source except where due acknowledgement is made.
* No part of this assessment has been written for me by any other person except where such collaboration has been authorised by the assessor concerned.
* I understand that plagiarism is the presentation of the work, idea or creation of another person as though it is my own. Plagiarism occurs when the origin of the material used is not appropriately cited. No part of this assessment is plagiarised.

### Student signature and Date

Version: 1.0

Date created: 07/11/2019

Date modified: 21/01/2020

For queries, please contact:

Innovative Manufacturing, Robotics and Science SkillsPoint

Hamilton Campus

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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 |
| --- | --- |
| **Assessment overview** | The objective of this assessment is to assess your knowledge as would be required to perform set-up, pre-use and in-house calibration/validation checks on laboratory equipment and assist with equipment maintenance. |
| **Assessment Event number** | 1 of 2 |
| **Instructions for this assessment** | This is a written assessment and it will be assessing you on your knowledge of the unit.  This assessment is in 4 sections:   1. Multiple choice questions (Questions 1 – 10) 2. True or False questions (Questions 11 – 20) 3. Written response questions (Questions 21 – 29) 4. Assessment feedback |
| **Submission instructions** | On completion of this assessment, you are required to upload it or hand it to your trainer for marking.  It is important that you keep a copy of all electronic and hardcopy assessments submitted to TAFE and complete the assessment declaration when submitting the assessment. |
| **What do I need to do to achieve a satisfactory result?** | To achieve a satisfactory result for this assessment all questions must be answered correctly. |
| **What do I need to provide?** | Calculator, pens and pencils |
| **Due date/time allowed** | Assignment due for submission three weeks prior to end of unit. |
| **Assessment feedback, review or appeals** | In accordance with the TAFE NSW policy *Manage Assessment Appeals,* all students have the right to appeal an assessment decision in relation to how the assessment was conducted and the outcome of the assessment. Appeals must be lodged within **14 working days** of the formal notification of the result of the assessment.  If you would like to request a review of your results or if you have any concerns about your results, contact your Teacher or Head Teacher. If they are unavailable, contact the Student Administration Officer.  Contact your Head Teacher for the assessment appeals procedures at your college/campus. |

## Part 1: Multiple choice (Questions 1 – 10)

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

1. Calibration checks are important in the laboratory because:

Table 2 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. they form part of Good Laboratory Practice process |  |
| 1. they can identify equipment that is functioning poorly |  |
| 1. they make an instrument result more reliable |  |
| 1. all of the above |  |

1. **Routine** maintenance in the laboratory should be carried out on equipment/instruments:

Table 3 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. whenever there is spare time |  |
| 1. only when an instrument or piece of equipment is not working correctly |  |
| 1. according to the maintenance schedule for the instrument, unless required earlier |  |
| 1. never |  |

1. Ethical behaviour for a laboratory assistant would **not include:**

Table 4 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. working diligently and responsibly in accordance with workplace policy and procedures |  |
| 1. ensuring confidentiality of information, including client identification and test results |  |
| 1. altering a calibration result to ensure the result was compliant |  |
| 1. behaving honestly, respecting others and treating them with courtesy and impartiality |  |

1. Which of the following would be considered routine personal protective equipment for conducting calibration checks?

     ****  

A B C D E F G

Table 5 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. A, E, G, D |  |
| 1. B, C, F, E |  |
| 1. A, C, D, F |  |
| 1. B, C, F, G |  |

1. Legislative requirements that apply to laboratory workers include:

Table 6 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. WHS and workers compensation |  |
| 1. equal employment, anti-discrimination and anti-harassment |  |
| 1. environmental protection |  |
| 1. all the above |  |

1. Checking the calibration of a piece of equipment/instrument should occur:

Table 7 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. when scheduled |  |
| 1. if a problem is detected in a run of results |  |
| 1. after servicing |  |
| 1. all the above |  |

1. The **most** appropriate way to reduce the environmental impact of **used** batteries in equipment would be to:

Table 8 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. place in the normal refuse bin |  |
| 1. collect and take to appropriate disposal facility |  |
| 1. change all equipment to mains power |  |
| 1. use only rechargeable batteries |  |

1. Ethical and legal work practices could include:

Table 9 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. following industry codes of practice |  |
| 1. sensitivity towards an issue |  |
| 1. proper acknowledgement of copyright and intellectual property |  |
| 1. all of the above |  |

1. Estimates of uncertainty could include:

Table 10 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. the repeatability of results |  |
| 1. drift in a calibrated instrument |  |
| 1. resolution of the equipment |  |
| 1. all of the above |  |

1. Which of the following could be generated as waste from maintenance of equipment?

Table 11 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Spent reagents |  |
| 1. Disposable PPE |  |
| 1. Broken glass and sharps |  |
| 1. All the above |  |

## Part 2: True or false (Questions 11- 20)

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

Table 12 True or false

| Question | Write *True* or *False* |
| --- | --- |
| 1. Recording measurements/results accurately and legibly is an important skill for all laboratory workers |  |
| 1. Maintenance issues related to equipment/instruments need only to be looked at during scheduled maintenance |  |
| 1. Ongoing training of workers forms part of Good Laboratory Practice |  |
| 1. The purpose of paperwork for WHS and environmental incidents is not to blame but to determine how avoid the situation occurring again in the future |  |
| 1. Calibration and maintenance logs for equipment are part of the traceability requirements for quality assurance in a laboratory |  |
| 1. Electrical repairs related to equipment/instruments should only be conducted by authorised personnel |  |
| 1. When equipment is quarantined it is important that all laboratory procedures are followed to ensure the equipment is not placed back into service until it has been serviced and found to be operating correctly |  |
| 1. Comparing previous calibration data may provide an indication that equipment is beginning to show a problem |  |
| 1. When undertaking cleaning of equipment or work area it is not necessary to refer to the Safety Data Sheets for any decontamination or disinfection agents that may be required |  |
| 1. WHS and environmental management requirements would include applying standard precautions as they relate to hazardous situations |  |

## Part 3: Short Answer (Questions 21 – 29)

Complete your answers in the spaces provided. (A maximum of 75 words is suggested for any one part).

Q21. Identify and name two pieces of equipment in the laboratory that you:

* set-up
* run calibration checks on
* clean and
* maintain

For each item complete the table below providing the information requested.

Table 13 Written response

| Equipment 1 |  |
| --- | --- |
| 1. PPE required for the equipment identified |  |
| 1. Purpose of the equipment identified |  |
| 1. Key components of the equipment |  |
| 1. Pre-use checks required |  |
| 1. Calibration checks required |  |
| 1. Maintenance checks required |  |
| 1. Hazards associated with the processes |  |
| 1. Safety checks required and appropriate actions |  |
| 1. Common faults and typical repairs |  |
| 1. Cleaning requirements (including equipment required) |  |
| 1. Storage requirements |  |
| 1. Sources of uncertainty and adjustments that can be made |  |
| 1. Documentation required to be completed |  |
| 1. When and how service agents/suppliers are contacted |  |
| 1. Describe the procedure in place in your laboratory for the ordering of stock. |  |

Table 14 Written response

| Equipment 2 |  |
| --- | --- |
| 1. PPE required for the equipment identified |  |
| 1. Purpose of the equipment identified |  |
| 1. Key components of the equipment |  |
| 1. Pre-use checks required |  |
| 1. Calibration checks required |  |
| 1. Maintenance checks required |  |
| 1. Hazards associated with the processes |  |
| 1. Safety checks required and appropriate actions |  |
| 1. Common faults and typical repairs |  |
| 1. Cleaning requirements (including equipment required) |  |
| 1. Storage requirements |  |
| 1. Sources of uncertainty and adjustments that can be made |  |
| 1. Documentation required to be completed |  |
| 1. When and how service agents/suppliers are contacted |  |
| 1. Describe the procedure in place in your laboratory for the ordering of stock |  |

1. Why is it important that all laboratory records are maintained with all information related to any calibration task? Indicate the type of information you are required to record in your laboratory.

|  |
| --- |
|  |

1. Why is it important that all laboratory records are maintained with information relating to faulty equipment?

|  |
| --- |
|  |

1. Why should an operator check the equipment/instrument every time it is used to identify if it is safe to use?

|  |
| --- |
|  |

1. For the following scenario identify what the Laboratory Assistant would be likely to do in the situation by answering Yes or No to the provided statements by placing an X in the box. If your response is **No,** indicate what should be the action of the Laboratory Assistant.

**Note:** Read the scenario and all the statements before you make any responses.

Table 15 Written response

|  |  |  |  |
| --- | --- | --- | --- |
| *On commencing work in the laboratory on a Monday morning (8am) the Laboratory Assistant notices that a piece of equipment has fallen on the floor and is lying in a puddle of water. The equipment is required for a batch of tests by the Laboratory Technician at 9:30. The equipment is not scheduled for routine maintenance for 3 weeks.* | | | |
| ***STATEMENT*** | ***YES*** | ***NO*** | *ACTION* |
| 1. Ensure the area is safe before you do anything |  |  |  |
| 1. Walk away as it is not your problem |  |  |  |
| 1. Report the incident according to workplace protocols |  |  |  |
| 1. Determine if you can safely pick up the equipment yourself, if not seek assistance from another person |  |  |  |
| 1. When the equipment is back in position plug it in and turn it on |  |  |  |
| 1. If the instrument is one you are familiar with and are authorised to work on, run routine checks on performance |  |  |  |
| 1. You find a fault that requires maintenance, but do nothing as maintenance is not scheduled for 3 weeks |  |  |  |
| 1. You document your routine check results as required by your workplace |  |  |  |

1. Explain why regular maintenance of instruments/equipment is important in the laboratory.

|  |
| --- |
|  |

1. What is your laboratory procedure for quarantining equipment/instruments that are faulty (unsafe or not calibrating correctly)?

|  |
| --- |
|  |

1. Every laboratory operates under legal and ethical requirements. Legal requirements could be concerned with WHS, Food Safety, the Environment and contract obligations. Ethical requirements could be concerned with confidentiality related to both personnel and reporting of results. Explain how both legal and ethical issues are addressed in a laboratory familiar to you.

Table 16 Written response

|  |  |
| --- | --- |
| LEGAL | ETHICAL |
|  |  |

1. **Good Laboratory Practice (GLP)** are methods that are accepted practice for laboratories. The aims of GLP include:

* Ensure consistency
* Reliability
* Uniformity
* Quality

The principles of GLP are related to:

* Organisation and personnel management
* Quality assurance program
* Facilities
* Equipment, reagents and materials
* Test systems
* Standard operating Procedures
* Reporting of results
* Storage of records and reports

How does the calibration and maintenance of equipment in a laboratory you are familiar with assist in meeting the principles of GLP? (Your response should be no more than 200 words)

|  |
| --- |
|  |

## Part 4: Assessment Feedback

*NOTE: This section* ***must*** *have the assessor signature and student signature to complete the feedback.*

### Assessment outcome

Satisfactory

Unsatisfactory

### Assessor Feedback

Was the assessment event successfully completed?

If no, was the resubmission/re-assessment successfully completed?

Was reasonable adjustment in place for this assessment event?  
*If yes, ensure it is detailed on the assessment document.*

Comments:

### Assessor name, signature and date:

### Student acknowledgement of assessment outcome

Would you like to make any comments about this assessment?

### Student name, signature and date

***NOTE: Make sure you have written your name at the bottom of each page of your submission before attaching the cover sheet and submitting to your assessor for marking.***