# Knowledge assessment 1

**Assessment event 1 of 3**

## Criteria

### Unit code, name and release number

MSL973015 - Prepare culture media (1)

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

MSL50118 - Diploma of Laboratory Technology (1)

MSL40118 - Certificate IV in Laboratory Techniques (1)

MSL30118 - Certificate III in Laboratory Skills (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: 27/08/2019

Date modified: 28/01/2020

For queries, please contact:

Innovative Manufacturing, Robotics and Science SkillsPoint

Hamilton Campus

© 2020 TAFE NSW, Sydney  
RTO Provider Number 90003 | CRICOS Provider Code: 00591E

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)

The contents of this document are copyright © TAFE NSW 2020, and should not be reproduced without the permission of the TAFE NSW. Information contained in this document is correct at time of printing: 28 January 2020. For current information please refer to our website or your teacher as appropriate.

## 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 understand the principles behind preparing culture media. |
| **Assessment Event number** | 1 of 3 |
| **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 parts:   1. Multiple choice questions 2. True or False questions 3. Short answer questions 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?** | Pens, student workbook for this unit |
| **Due date/time allowed** | TBA / 1 hour |
| **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

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

1. What do microorganisms require to grow?

Table 2 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Oxygen, nutrients and water |  |
| 1. Correct atmosphere, nutrients and water |  |
| 1. Water and food |  |
| 1. A warm environment |  |

1. Media that isolates a particular group of organisms while supressing the growth of others are called:

Table 3 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. differential media |  |
| 1. tissue culture media |  |
| 1. selective media |  |
| 1. enriched media |  |

1. What is the purpose of culture media?

Table 4 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. To maintain batches of microorganisms for study |  |
| 1. To grow selected microorganisms for analysis |  |
| 1. To grow tissues and cells for analysis |  |
| 1. All of the above |  |

1. To get an optimal growth of cells or organisms, what preparation steps are required?

Table 5 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Using the correct media and aseptic techniques |  |
| 1. Using a pure culture and an additive |  |
| 1. Using a broth and an inoculating loop |  |
| 1. Using agar and no additives |  |

1. Labile constituents are:

Table 6 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. fast acting agents |  |
| 1. easily broken down or displaced |  |
| 1. always added to culture media |  |
| 1. never added to culture media |  |

1. When should antibiotic discs be added to media?

Table 7 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Once the plate has been spread with bacteria |  |
| 1. During the pouring of the media |  |
| 1. Underneath the media, before pouring |  |
| 1. It should never be added |  |

1. Chocolate agar is made by:

Table 8 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. heating chocolate and mixing it into the agar |  |
| 1. heating blood agar until it turns a chocolate colour |  |
| 1. heating blood and adding it to solid agar |  |
| 1. heating agar and adding blood |  |

1. How is haemolysis determined?

Table 9 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Clear spots in the cell culture |  |
| 1. The blood agar turns a darker colour |  |
| 1. The culture becomes liquid |  |
| 1. The bacteria grows rapidly |  |

## Part 2: True or false

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

Table 10 True or false

| Question | Write *True* or *False* |
| --- | --- |
| 1. An agar slope is used to give bacteria a larger surface area to grow on in a test tube |  |
| 1. Agar slopes are used to store mixed cultures before separation |  |
| 1. Agar deep tubes are used to study the growth patterns of anaerobic bacteria within the agar |  |
| 1. Blood in agar is used to feed bacterial growth |  |
| 1. Liquid culture medium is used for pure culture |  |
| 1. Gas, odour and pH changes can be detected when using liquid culture medium |  |
| 1. Measuring gas production will indicate the metabolic processes of the microorganism |  |
| 1. Water baths are used to incubate cell cultures at a specific temperature |  |
| 1. Water baths should be filled with tap water |  |
| 1. Labile constituents are very strong and long lasting |  |

## Part 3: Short answer

Read the question carefully. The word count is listed at the end of each question.

1. Explain what a liquid media is and how it is made (15 to 30 words):
2. Explain what a solid media is and how it is made (15 to 30 words):
3. What growth requirements do non-microbial cells and tissues have (10 to 30 words)?
4. Explain how the pH of the culture media may affect cell growth, and state the pH range culture media generally sits in (10 to 30 words):
5. When should labile constituents be added to the culture (10 to 30 words)?
6. Explain the following microbiological terms:
   1. Incubator (5 to 15 words)
   2. Sterilisation (5 to 15 words)
   3. Disinfection (5 to 15 words)
   4. Inoculation loop (5 to 15 words)
   5. Inoculation (5 to 15 words)
7. List the uses of the following ingredients and additives to culture media (5 to 25 words per cell):

Table 11 table

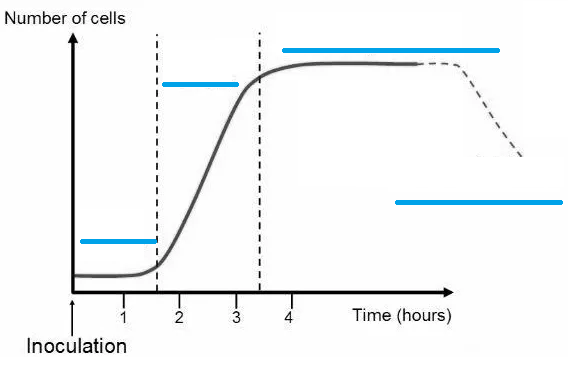
|  |  |
| --- | --- |
| Ingredient | Use |
| Water |  |
| Sodium chloride |  |
| Peptones |  |
| Buffers |  |
| Indicators |  |
| Solidifying agents |  |
| Selective agents |  |
| Enrichment additives |  |
| Reducing substances |  |

1. Draw a line between the media and it’s correct description:

Table 12 table

|  |  |  |
| --- | --- | --- |
| Media |  | Description |
| Selective | This media contains an indicator that allows you to distinguish one microorganism from others. |
| Enriched | Liquids used in the process of making cultures. Agar is added to these to solidify them. |
| Differential | Cells are grown in this under controlled conditions, outside of their natural environment. |
| Solutions | Tissues are grown in this under controlled conditions, outside of their natural environment. |
| Transport media | This media allows fastidious/fussy organisms to grow that would not survive on ordinary media. |
| Tissue culture media | This media is used as temporary storage, and will contain only buffers and salt. It will maintain the viability of organisms without allowing them to increase. |
| Cell culture | This media is imbued with chemicals to inhibit the growth of certain microorganisms, while allowing others to grow. |

1. Complete the following diagram for the bacterial growth curve by labelling each component – marked by blue lines:



1. What are the temperature ranges at which the following types of microorganisms will grow at?

Table 13 table

|  |  |
| --- | --- |
| Term | Temperature range |
| Psychrophiles |  |
| Mesophiles |  |
| Thermophiles |  |
| Hyperthermophiles |  |

## 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.***