# Knowledge assessment 3

**Assessment event 3 of 6**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MSL954003 - Relate anatomical and physiological features to laboratory samples (1)

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

MSL50118 - Diploma of Laboratory Technology (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\*\*

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For queries, please contact:

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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.  This assessment is in 4 parts:   1. Multiple choice questions 2. True or false questions 3. Short answer questions 4. Assessment feedback   This is an open book assessment.  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, student workbook for this unit |
| **Assessor must provide** | This assessment task, suitable classroom for an exam |
| **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. A tissue is:

Table 2 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. a membrane that lines body cavities |  |
| 1. a group of similar cells that perform a unique function to help the organ do its job | X |
| 1. a thin sheet of cells embedded in a matrix |  |
| 1. the most complex organisations unit of the body |  |

1. The four principle types of tissue include all of the following, except:

Table 3 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. nervous |  |
| 1. muscle |  |
| 1. plasma | X |
| 1. connective |  |

1. Tissues differ from each other in the:

Table 4 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. size and shape of their cells |  |
| 1. amount and kind of material between the calls |  |
| 1. special functions they perform |  |
| 1. all of the above | X |

1. Epithelial cells can be classified according to shape. Which of the following is not a characteristic shape of epithelium?

Table 5 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Cuboidal |  |
| 1. Rectangular | X |
| 1. Squamous |  |
| 1. Columnar |  |

1. Which of the following is a function of Epithelium?

Table 6 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Secretion |  |
| 1. Protection |  |
| 1. Absorption |  |
| 1. All of the above | X |

1. Which of the following is not an example of connective tissue?

Table 7 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Transitional | X |
| 1. Adipose |  |
| 1. Blood |  |
| 1. Bone |  |

1. Which of the following statements is **false** regarding connective tissue?

Table 8 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. It is the most abundant tissue |  |
| 1. It is widely distributed throughout the body |  |
| 1. It exists in more varied forms than any of the other tissue types |  |
| 1. It is voluntary | X |

1. Cellular respiration is defined as:

Table 9 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. an intracellular, energy-producing process | X |
| 1. an extracellular, energy-producing process |  |
| 1. an intracellular, energy- requiring process |  |
| 1. an extracellular, energy-requiring process |  |

## 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. There are three classes of membrane in the human body | F |
| 1. There are three major types of tissue in the human body | F |
| 1. Cells are made up of three basic components: Protoplasm, Plasma membrane & Nucleus | T |
| 1. Mitosis and meiosis are the processes through which cells reproduce | T |
| 1. Movement of substances between cells and body fluids occurs by diffusion, osmosis, active transport, endocytosis and filtration | T |
| 1. Red blood cells contain haemoglobin | T |
| 1. White blood cells fight disease | T |
| 1. There are two primary types of blood cells, leucocytes and erythrocytes | T |
| 1. An organ is a group of the same tissue types | F |
| 1. A tissue is a group of different cell types | F |

## Part 3: Short answer

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

1. Explain the meaning of the term ‘homeostasis’ and give two examples of homeostatic mechanisms in the body (8 to 25 words):

Homeostasis is the process by which the body maintains balance in the internal environment.

Any two of:

Body temperature, body fluid composition, pH (acid-base balance), blood pressure, blood sugar, calcium concentration

1. Complete the table below by describing the functions of the nervous tissues:

Table 11 Complete the table

|  |  |
| --- | --- |
| Nervous tissue | Functions |
| Neuroglia | Supportive cells |
| Axon | Cell process that transmits nerve impulses away from the cell body |
| Neuron | The conducting cells of the nervous system |
| Dendrite | Cell process that carries nerve impulses toward the cell body |

1. If we say a tissue is highly vascular, what do we mean (3 to 15 words)?

It has a strong supply of blood

1. List four types of connective tissue and where that tissue would be found in the body (12 to 25 words):

Any four of the following would be acceptable, and the location in the body may be different to the one listed below:

Areolar – between other cells

Adipose –under the skin and surrounding organs

Cartilage – between bone to bone

Blood – blood vessels

White fibrous – between muscle and bone

Dense regular – fascia

Dense irregular – skin dermis

Elastic connective – blood vessels

Reticular connective – lymph nodes

Elastic cartilage – ears

Hyaline cartilage – nose

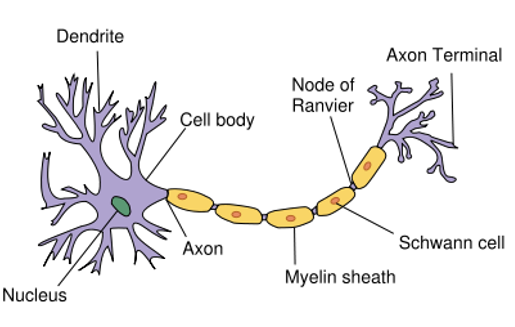
Fibrocartilage – knee

1. Identify the skeletal, smooth and cardiac muscle tissues below, and describe them in detail (7 to 15 words):

Table 12 Complete the table

| Muscle tissue | Description |
| --- | --- |
|  | Skeletal – cylindrical, striated, voluntary cells, multinucleated, nuclei peripheral |
|  | Smooth – non-striated, involuntary, narrow fibres with central nuclei, multinucleated |
| [Skeletal Smooth Cardiac](https://commons.wikimedia.org/wiki/File:414_Skeletal_Smooth_Cardiac.jpg) by OpenStax College under [CC BY 3.0](https://creativecommons.org/licenses/by/3.0/deed.en) | Cardiac – striated, branching, involuntary cells with intercalated discs, multinucleated, nuclei central |

1. Label the neuron in the box below, then describe its function:
   1. Label the neuron below



[Neuron with myelin sheath labelled as e](https://en.wiktionary.org/wiki/myelin_sheath#/media/File:Neuron,_LangNeutral.svg), by unknown, under [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/) modified for use in student facing assessment

* 1. Describe the function of neurons (3 to 10 words):

Regulate body activity

1. List the key components found in all cells from the external surface to the interior of the cell (12 words):

Cell membrane, cytoplasm, ribosomes, mitochondria, golgi bodies, lysosomes, nuclear membrane, nucleus, nucleolus

1. Complete the table below:
2. List the types of tissues in column B (1 word per cell)
3. List the functions of each type in column C (2 to 10 words per cell)

Table 13 Complete the table

| Tissue | Types / Location | Function |
| --- | --- | --- |
| Glandular | Endocrine – glands | Secrete directly into blood stream or tissues |
| Exocrine – glands | Secrete into ducts |
| Lymphatic | Lymph nodes all over body, spleen | Contains white blood cells |

1. What is the main function of cells (4 to 10 words)?

Answer may include any of the following but is not limited to:

reproduce, respiration, growth, excretion, sensitivity/sensation, movement, nutrition

1. Complete the table below for the basic chemical components of the cell:
   1. Column B (2 to 5 words per cell)
   2. Column C (3 to 15 words per cell)

Table 14 Complete the table

| Major compound | Elements present | Main significance in the body |
| --- | --- | --- |
| Water | Hydrogen and oxygen | Any/all of:  The body’s reservoir, water provides a universal solvent for the facilitation of chemical reactions in the tissues. Helps transport substances around the body |
| Carbohydrates | Carbon, hydrogen and oxygen | Main fuel for the body |
| Proteins | Carbon, hydrogen, oxygen and nitrogen | Main building blocks of the body’s tissues |
| Fats/Lipids | Carbon, hydrogen and oxygen | Energy source for the body’s activities. Energy store, thermoregulation |
| Nucleic acids | Carbon, hydrogen, oxygen, nitrogen and phosphorous | Any/all of:  Important molecules found inside cells. DNA, RNA, nucleotides, component of genetic material |

1. List the primary functions of the four major tissue types in the human body:

Table 15 Complete the table

|  |  |
| --- | --- |
| Tissue | Main function |
| Epithelial | Protective covering for surfaces inside and outside the body |
| Connective | Protects, binds and supports the body and its organs |
| Muscle | Provides movement |
| Nervous | Initiates and transmits nerve impulses |

1. Complete the table below:
   1. List the types of muscle tissues in column B (1 word per cell)
   2. List the location it can be found in column C (1 word per cell)
   3. List the functions of each type in column D (2 to 15 words per cell)

Table 16 Complete the table

|  |  |  |  |
| --- | --- | --- | --- |
| Tissue | Types | Where is it found? | Function |
| Muscular | Skeletal | Skeleton | Stability and movement |
| Smooth | Organs | Regulation of flow – peristalsis |
| Cardiac | Heart | Plays a role in pumping blood through the body |