

2021 VCE VET Health external assessment report

General comments

The 2021 VCE VET Health examination provided students with an opportunity to demonstrate their knowledge and understanding of two units of competency in the VCE VET Health program:

- HLTAAP001 Recognise healthy body systems
- BSBMED301 Interpret and apply medical terminology appropriately.

Students were able to successfully identify ways to maintain a healthy body system for a range of different systems (Questions 3b. and 8 in Section C) and demonstrated an understanding of how factors such as exercise, diet, hydration and smoking impact the functioning of body systems. Students also demonstrated strength in the practical requirements of working as an allied health assistant (AHA) within a healthcare setting, such as strategies to source the meaning of unknown medical terminology, maintaining confidentiality, communication strategies and interpreting workplace procedure lists (Question 12 in Section B and Questions 7 and 11 in Section C).

When students were given the names of the structures to choose from when labelling biological and anatomical diagrams, they had a higher level of success compared to when no terms were provided. Students are encouraged to develop their ability to label key body systems independently of word lists.

Students need to further improve their understanding and knowledge of medical terminology and abbreviations. Students were able to match provided terms to their meaning, but had more difficulty providing the specific meaning of key terms or word components independently (Questions 7 and 10 in Section B).

While students demonstrated they could break medical terms down into their components (prefix, root word, combining form and suffix), they had limited understanding of the meaning of the different components and therefore were unable to provide accurate definitions of terms or complete medical terms using the correct suffix (Questions 5 and 7 in Section B). In most cases, students were unable to provide the correct meaning of medical abbreviations. It is therefore recommended that students are repeatedly exposed to a wide range of these on a regular basis throughout the course, through regular case studies and practical applications when addressing key body systems.

It is important for students to develop a greater understanding of different command words when developing their exam technique and responses. While students were able to successfully respond to questions when asked to 'identify' or 'state' particular knowledge or facts, they had difficulty providing the required detail and specific links between concepts and body systems when asked to 'describe' or 'explain' their understanding further (Questions 4 and 6 in Section B and Question 9a. in Section C).

Although correct spelling is not required when using terms within short-answer responses, students should take care when transposing provided terms, differentiating between singular and plural forms and providing labels on diagrams. Correct spelling is required in the following circumstances:

- when labelling anatomical or biological diagrams
- when explicitly asked to provide a medical term, word component or meaning of a medical abbreviation
- where lists of words are already provided in the question stimulus.

Students should also note that all spelling of medical terms should be in British English; American spelling of terms is not accepted.

Specific information

Note: This report provides sample answers or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

Student responses reproduced in this report have not been corrected for grammar, spelling or factual information.

The statistics in this report may be subject to rounding resulting in a total more or less than 100 per cent.

Section A – Multiple-choice questions

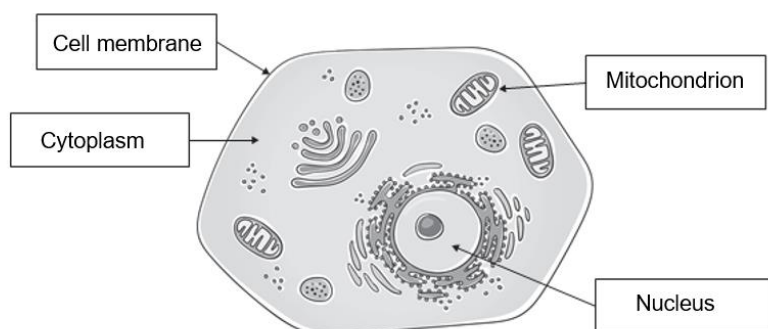
The following table indicates the percentage of students who chose each option.

Question	Correct Answer	% A	% B	% C	% D	Comments
1	B	31	66	0	3	Students incorrectly selected ventricles (option A) as opposed to atria, showing a lack of understanding of the difference between the upper and lower chambers.
2	D	11	10	4	75	
3	C	5	3	89	4	
4	C	6	6	74	14	
5	D	25	2	2	71	Students recognised the term 'ureter' and associated it with the urinary system, but failed to recognise the other terms as not being part of the urinary system.
6	D	0	17	26	57	Students who were unfamiliar with the terms duodenum and ileum as components of the small intestine incorrectly selected option C.
7	A	72	9	2	17	
8	C	6	40	49	5	Option B was incorrect because the suffix -scope refers to an instrument for visual examination, not recording. The suffix -graph was the correct option as it is linked to 'an instrument for recording'.
9	D	8	36	4	52	
10	B	26	50	18	5	
11	A	58	17	18	8	
12	B	12	67	5	17	
13	D	2	1	1	96	
14	D	5	8	8	78	
15	A	78	6	10	5	

Question	Correct Answer	% A	% B	% C	% D	Comments
16	A	55	21	14	10	Students who lacked detailed understanding of the structure of lymphatic vessels incorrectly selected options B, C or D.
17	C	3	33	60	3	Arteries carry blood from the heart to the rest of the body while veins carry blood from the body back to the heart.
18	B	19	45	24	12	Pericardium is the serous membrane (double-layers) surrounding the heart, whereas the myocardium refers to the muscular middle layer of the heart.
19	B	4	68	15	13	
20	C	15	9	73	4	

Section B

Question 1



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Marks	0	1	2	3	4	Average
%	4	6	14	24	53	3.2

Most students identified nucleus correctly, but many confused cytoplasm and cell membrane. Marks were not awarded for the misspelling of mitochondrion and mitochondria as the correctly spelt terms formed part of the question.

Question 2

Marks	0	1	2	Average
%	66	23	11	0.5

Any two responses that provided the function of a hormone produced by the pituitary gland was accepted, for example:

- produces hormones that control growth
- controls growth and development

- produces hormones that cause the ovaries to release ova (LH)
- produces hormones to stimulate growth of follicles/eggs (FSH)
- produces hormones that cause the testes to produce sperm
- produces hormones that start the birth process
- produces hormones that cause the mammary glands to produce milk
- produces hormones that control the amount of water in urine
- produces hormones that stimulate the release of thyroxine from the thyroid gland
- produces hormones that regulate skin pigment.

This question was poorly answered by students. Common errors and misconceptions included:

- incorrectly stating that the pituitary gland secretes sex hormones (oestrogen and testosterone)
- listing the names of hormones produced by the pituitary gland instead of stating its function
- identifying a specific hormone but giving it an incorrect function.

Question 3

Marks	0	1	2	3	4	Average
%	14	23	18	18	28	2.2

Function	Body organ
holds waste matter prior to defaecation	Rectum
secretes a substance called bile that breaks down fats	Liver
absorbs water from faeces	Colon
closes off the stomach after a meal	Sphincter

Students needed to spell these terms correctly to obtain marks. Common errors and misconceptions included:

- incorrectly stating that the pancreas is responsible for the secretion of bile
- incorrectly stating that the oesophagus was responsible for closing off the stomach after a meal.

Question 4

Marks	0	1	2	3	4	Average
%	41	25	20	7	6	1.2

Students were required to state a function of the kidneys and then link this specific function to the concept of homeostasis. Any two possible responses included:

- return useful substances, such as water, glucose and other nutrients, to the blood
- responsible for the formation of urine
- excrete urea as part of urine
- control blood pressure
- regulate the concentration and volume of body fluids
- control the body's pH level
- control the amount of ions, water and other substances in the blood
- filters urea from the blood / filtering to create urine.

This question proved to be challenging for the majority of students, with many incorrectly stating that the kidneys are involved in thermoregulation, regulation of sugar/glucose levels or in the absorption of nutrients.

Responses that scored highly demonstrated an understanding of homeostasis by referring to the 'maintenance', 'regulation' or 'balance' of a specific variable (i.e. blood volume, pH, blood pressure or fluid and electrolyte balance).

Responses that did not score well were often able to list a function of the kidneys, but had difficulty showing how this relates to homeostasis. Marks could not be awarded for responses that provided a clear function of the kidneys but linked it to an unrelated or incorrect component of homeostasis.

Question 5

Marks	0	1	2	3	4	Average
%	13	29	54	4	0.5	1.5

Meaning	Medical term
lower than normal number of red blood cells	An / aemia
the health specialist who diagnoses and treats disorders of the immune system	immune / <i>logist</i>
inflammation of the liver	Hepat / <i>itis</i>
inside or within the tooth	Endo / <i>dontic</i>
accumulation of fluid causing swelling in an area of the body	Lymph / <i>oedema</i>

This question was poorly answered. While most students recognised that the suffix -itis refers to inflammation, there was a general lack of understanding of the meaning of key medical terms and word components.

Common errors and misconceptions included:

- students incorrectly used -logy (the study of a particular field) instead of -logist (a specialist in the study of a particular field). Some students also did not check the spelling of the medical term and incorrectly listed the suffix as -ologist
- many students left endodontic blank
- many students identified -oedema as the suffix referring to swelling, but incorrectly used its American spelling.

Question 6

Marks	0	1	2	3	4	Average
%	46	19	19	6	11	1.2

The following are examples of possible responses.

- White blood cells/macrophages/neutrophils/leukocytes/phagocytes: engulf or destroy bacteria.
- Inflammatory response: promotes blood flow to the site of injury resulting in heat, redness, swelling and pain.
- Natural killer cells / mast cells: release chemicals that destroy pathogens.
- Fever: increases temperature, making it harder for pathogens to survive.

Responses that scored highly were able to clearly identify a component of the second line of defence and explain what this does to kill or destroy pathogens. Responses that did not score well listed a component of the second line of defence but were unable to clearly describe what it does or provided an incorrect description.

Common errors and misconceptions included:

- providing an example and description of the first or third line of defence
- stating that sneezing and vomiting act to remove pathogens from the body.

Question 7

Marks	0	1	2	3	4	5	6	Average
%	10	8	16	28	19	12	7	3.0

Medical term	Word part				Definition of medical term
	Prefix	Root word	Combining vowel	Suffix	
hysterectomy		hyster		ectomy	Surgical removal of the uterus
hyperthyroidism	hyper	thyroid		ism	Condition of an overactive thyroid
septoplasty		sept	o	plasty	Surgical repair of the septum

Most students were able to successfully break each word down into its separate parts. Common errors included dropping the 'er' from hyster or including the 'o' with sept.

Students had more difficulty providing a correct definition of each medical term.

Common errors and misconceptions included the following.

- Many students did not know that the root term hyster refers to the uterus, incorrectly stating it was the female reproductive system or ovaries.
- Many students did not include 'surgical' in their definition of hysterectomy (-ectomy refers to the 'surgical removal of').
- Many students defined hyperthyroidism as 'overactive thyroid', which indicates they did not understand that the suffix -ism refers to 'a condition of'.
- Students incorrectly stated it was an abnormally high/large thyroid gland rather than referring to the activity of the thyroid gland.
- Many students did not know the meaning of the suffix -plasty.

Question 8

Marks	0	1	2	Average
%	43	28	29	0.9

Students struggled to provide two components of the lymphatic system, with many incorrectly including the thyroid gland, nose and throat.

Possible responses included:

- spleen
- thymus
- Peyer's patches
- bone marrow
- ducts
- capillaries / lymph vessels
- lacteal
- lymph fluid / lymph
- adenoids.

Responses referring to lymphocytes or white blood cells were not credited as these are transported by the lymphatic system but do not make up the lymphatic system.

Question 9

Marks	0	1	2	3	Average
%	0	3	22	75	2.7

Possible responses included:

- tarsals
- femur
- inspiration.

Question 10

Marks	0	1	2	3	Average
%	58	30	10	2	0.6

Possible responses included:

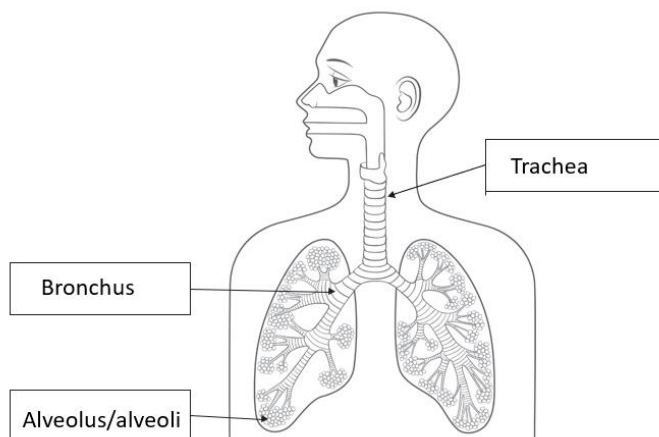
- orth/o – straight, upright, correct, normal
- cyst/o – bladder, urinary bladder, sac
- my/o – muscle

This question was very poorly answered, with few students showing a good understanding of medical root terms. Many students left this question blank or incorrectly stated that orth/o refers to the bones, mouth or teeth (orthodontics/orthopaedics) and that cyst/o refers to a cyst or cell (cyte). Students were generally able to identify that my/o refers to muscles.

Some students did not read the question carefully and instead used the root term in a medical term rather than providing its meaning.

Question 11

Marks	0	1	2	3	Average
%	36	22	27	15	1.2



This question required students to spell each term correctly and also be mindful of singular and plural terms. Students had more difficulty with this question as the terms were not provided.

Common errors and misconceptions included:

- forgetting to include the 'h' in bronchus or using the plural 'bronchi'
- spelling alveoli as aveoli.

Question 12

Marks	0	1	2	Average
%	4	37	59	1.6

Any two possible responses included:

- ask/seek clarification from supervisor/manager
- ask/seek clarification from nursing staff
- seek information from policy or procedure
- seek information from / reference medical terminology text / medical dictionary
- Google/internet search using a recognised medical website.

Most students were able to clearly state what colleagues they would consult (supervisor or nursing staff) and what resources they could use (medical terminology dictionary or accredited medical website).

Question 13

Marks	0	1	2	3	Average
%	58	31	9	1	0.6

Possible responses included:

- RIB – rest in bed
- ECG – electrocardiogram
- FBE – full blood examination.

This question was very poorly answered with few students able to correctly define medical abbreviations. Many students left this question blank with common errors including echocardiogram, electrocardiograph and full body examination. Students need to be careful in differentiating between the meaning of suffixes such as -gram, -graph and -graphy.

Students are encouraged to always put their response back into the context of the question to ensure it makes sense.

Question 14

Marks	0	1	2	3	Average
%	33	20	19	28	1.5

Description	Positional term
referring to the midline of the body	Medial
referring to above	Superior
referring to a structure towards the front	Anterior

Most students were able to identify the term medial as referring to the midline of the body. Students had more difficulty in correctly stating superior and anterior, often confusing these with inferior and posterior. Some students provided multiple terms for each response.

Question 15

Marks	0	1	2	3	Average
%	11	26	31	32	1.9

Explanation	Medical term
the abnormal development of cells	Dysplasia
a low number of cells in an organ or a tissue	Hypoplasia
congenital absence or incomplete development of an organ or a tissue	Aplasia

Students had more success with this question as the terms were provided and they were able to apply their understanding of common prefixes. Most students correctly identified hypoplasia as a low number of cells in an organ or tissue. Common errors included mixing up dysplasia and aplasia or incorrectly describing the abnormal development of cells as metaplasia.

Section C – Case study

Case study 1

Question 1

Marks	0	1	2	3	4	Average
%	10	19	30	28	12	2.1

Medical term	Abbreviation
29 weeks	29/52
review	R/V or r/v or RV or rv
patient	Pt or pt
no abnormalities detected	NAD

Students were generally able to provide the correct abbreviation when given the medical term.

Common errors and misconceptions included:

- many students incorrectly provided the abbreviation for prescription/treatment (Rx) instead of for review
- some students capitalised PT, which changes the meaning of the abbreviation to physiotherapist
- lower case letters for NAD were not accepted, as acronyms should be capitalised.

Question 2

Marks	0	1	2	Average
%	42	34	24	0.8

Students were required to show a clear relationship between the two body systems. Responses that scored highly were able to clearly state a function of either system and then specifically link that function to a component of the other system. For example, they identified that the endocrine system produces key hormones, such as oestrogen, which are produced by the ovaries of the reproductive system.

Many students did not attempt this question.

Responses that did not score well simply listed the functions of each system. Many students were able to identify that the endocrine system produces hormones but did not make a meaningful connection to the reproductive system and often got distracted by Jaida's gestational diabetes. Students who only referenced the male reproductive system in their response were not awarded full marks as it was not pertinent to the case study.

Question 3a.

Marks	0	1	Average
%	42	58	0.6

Any one of the following:

- ask Jaida to perform the exercises
- ask Jaida if she has any questions
- provide Jaida with diagrams of how to complete the exercises
- ask Jaida to confirm her understanding.

Question 3b.

Marks	0	1	2	Average
%	3	45	52	1.5

Any two of:

- cook her own meals / eat less take away
- eat more vegetables
- drink more water
- consult a dietician or other health professional
- eat less fatty or sugary food
- eat more fruit
- adequate/healthy/balanced diet
- monitor BGL
- social/mental health and wellbeing example.

Common errors and misconceptions included:

- many students did not read the question carefully and provided exercise as an answer
- incorrectly referencing sleep, alcohol consumption or stress levels – these were clearly identified as not being an issue for Jaida in the case study
- recommending Jaida take medications for her diabetes – medication prescription is outside the scope of an AHA.

Question 4

Marks	0	1	2	3	4	Average
%	22	31	28	13	7	1.6

- Insulin – produced by the pancreas – acts to lower/decrease blood glucose levels.
- Oestrogen – produced by the ovaries – controls the development of female secondary sex characteristics / stimulates the growth of the lining of the uterus / regulates the female menstrual cycle.

Most students correctly stated that insulin is produced by the pancreas but struggled to provide specific functions for each hormone.

Common errors and misconceptions included:

- incorrectly stating oestrogen is produced by the pituitary gland
- not being specific enough about the role of insulin – students needed to show that it decreases blood glucose levels, not just regulates it
- responses that were too vague and only stated ‘female sex characteristics’ without including ‘secondary’.

Question 5

Marks	0	1	2	3	4	Average
%	15	34	27	13	11	1.7

Function	Structure found within reproductive system
storage and maturation of sperm cells	epididymis
carries sperm away from the testes	vas deferens
production of sperm	testes
carry DNA and fertilise an egg	sperm

Common errors and misconceptions included:

- incorrect spelling when copying epididymis and vas deferens
- incorrectly stating the seminal vesicles carry sperm away from the testes
- incorrectly stating the fallopian tubes fertilise an egg.

Case study 2

Question 6

Marks	0	1	2	3	4	Average
%	7	23	25	25	19	2.3

Word/Abbreviation	Definition/Full medical term
BMI	Body mass index
neuropathy	Disease of the nervous system / nerves / nervous tissue
dermatitis	Inflammation of the skin
4/24	4 hours / every 4 hours

Most students correctly defined BMI and dermatitis. Common errors included defining dermatitis as inflammation of the dermis and 4/24 as 4 times a day.

Question 7

Marks	0	1	2	Average
%	11	46	42	1.3

Possible responses included:

Confidentiality

- conduct interview away from public
- conduct interview in allocated interview room

Minimise stress

- allow time for client to process information
- keep communication clear
- avoid jargon
- do not rush the client
- start with an informal chat to allow Mr Costa to relax
- allow a family member to attend.

This question was well answered, with students demonstrating a good understanding of communication strategies and bedside manner to ensure patients feel comfortable.

Common errors included talking about storage of medical files to maintain confidentiality with no reference to the specific context of an interview setting.

Question 8

Marks	0	1	2	Average
%	9	32	58	1.5

Any two of:

- reduce/stop smoking
- increase exercise program
- take care of skin by using moisturiser
- healthy eating
- staying hydrated
- consult a dermatologist
- general skin care such as using sun screen
- hygiene – washing skin/hands regularly.

This question was generally well answered. However, responses that referenced increasing vitamin D were not accepted, as this was already addressed in the case study.

Question 9a.

Marks	0	1	Average
%	79	21	0.2

Students were required to state what the blood vessels do in response to exercise and then link this to either reducing body temperature or thermoregulation. For example, the blood vessels vasodilate, redirecting blood to the skin's surface and therefore increasing heat loss.

Most students were able to state that vessels will act to reduce body temperature; however, many incorrectly stated that the blood vessels themselves rise to the surface of the skin rather than redirect blood flow to the skin.

Question 9b.

Marks	0	1	Average
%	60	40	0.4

The correct answer is dermis.

Common errors and misconceptions included identifying epidermis rather than dermis and not providing enough detail in the response, for example, just answering 'second layer' was not enough.

Question 10

Marks	0	1	2	Average
%	26	46	27	1.0

Possible responses included the following.

- When exposed to sunlight the skin produces vitamin D. Vitamin D is required for calcium absorption and therefore maintains healthy bones.
- The skin also provides a protective barrier to underlying structures such as bones and muscles, therefore preventing infection or damage.

Responses that scored highly were able to identify a specific function of the skin and link it directly to components of the musculoskeletal system (i.e. muscles and bones).

Responses that did not score well were too vague in their link to the musculoskeletal system and only identified a function of the skin.

Question 11

Marks	0	1	Average
%	36	64	0.657

Possible responses included:

- put on gloves
- put on gown
- put on face mask
- put on goggles.

Students needed to provide an example of what personal protective equipment Leanne could wear and not simply provide the meaning of the abbreviation PPE.