

2020 VCE VET Health examination report

General comments

The 2020 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.

The examination consisted of three parts: Section A contained 20 multiple-choice questions, Section B contained 14 questions, and Section C contained two case studies with 12 questions.

Students were generally able to discuss processes and resources required by the body to support healthy functioning (e.g. Question 4 in Section B and Questions 4 and 6 in Section C), but they need to ensure they contextualise their responses to the case study or scenario.

Students need to develop a solid knowledge base of the anatomical structures of the major body systems, the function of each body system and its components, and the interrelationship between each body system. The majority of students were not able to correctly identify the main organs or accessory organs of the urinary system or the digestive system (Questions 1 and 7 in Section B). The questions on function and interrelationships between systems were also not answered well: for example, Questions 2, 6, 9 and 11 in Section B, and Questions 7 and 11b. in Section C.

Students need to further improve their medical terminology knowledge, in particular common medical abbreviations and breaking medical terms into their component parts. Where the medical abbreviation questions were part of a case study, students would benefit from reading the case study to understand the context in which the abbreviation occurs and then replacing it with its full meaning to see if it makes sense.

Students are advised to:

- thoroughly read the question, identify the key task word and plan the response before writing. Where a question asks students to 'describe' or 'outline', responding in dot point or list form is not appropriate for full marks
- be extremely careful to avoid spelling errors when transposing a word in the question to the answer; correct spelling is required for all medical terminology
- ensure their writing is legible to maximise their ability to clearly communicate understanding
- read through the paper thoroughly and ensure all questions have been read, considered and answered.

Specific information

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

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

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 table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
1	14	13	8	66	
2	34	47	17	2	Option A is correct as gastr/o is a combining form, combining the root word 'gastr' with the combining vowel 'o'. 'Gastr' is a root word, so option B is incorrect.
3	12	0	78	10	
4	27	48	18	7	
5	36	1	60	3	Option A is correct as cephal/ is the root word for head. Crani/ is the root word for skull or cranium. Therefore, option C is incorrect.
6	3	1	96	0	
7	53	27	11	8	
8	11	35	3	51	
9	18	68	5	8	
10	12	14	3	70	
11	9	58	17	15	
12	5	12	60	24	
13	19	20	21	40	Option D is correct as the left atrium receives oxygenated blood from the lungs via the pulmonary veins. The right ventricle (option A) receives deoxygenated blood from the right atrium. The left ventricle (option B) receives oxygenated blood for the left atrium. The right atrium (option C) receives deoxygenated blood from the inferior and superior vena cava.
14	72	6	17	5	
15	3	2	0	95	
16	23	15	26	36	Option D is correct as the process of micturition/urination is regulated by the nervous system and the detrusor muscle of the bladder, the internal urethral sphincter and external urethral sphincter of the urethra.
17	23	72	2	3	
18	78	5	16	2	
19	7	6	56	31	
20	9	2	5	84	

Section B

Question 1

Marks	0	1	2	3	4	Average
%	2	6	16	1	76	3.4

The majority of students received full marks for this question. Common student errors included labelling the ureter the urethra and the urethra the ureter, or labelling the ureter the renal artery and the renal artery the ureter.

Question 2

Marks	0	1	2	Average
%	69	17	14	0.5

This question proved to be challenging for the majority of students, as many were unable to differentiate between the pulmonary and systemic circulation of the human body or did not answer the question.

Some students had the misconception that the systemic and pulmonary circulation were responsible for the circulation of either oxygenated blood or deoxygenated blood and did not recognise that they carry both. Other students incorrectly described both circulation types as linked to the urinary system.

Some student responses described the systemic circulation but did not correctly explain the pulmonary circulation nor the difference between them as required by the question.

High-scoring responses were able to identify pulmonary circulation as being between the heart and the lungs, where the heart pumps deoxygenated blood via the pulmonary artery to the lungs and oxygenated blood returns from the lungs to the heart via the pulmonary veins. Systemic circulation is between the heart and the rest of the body; it carries oxygenated blood from the heart and circulates it to the body then returns deoxygenated blood from the body back to the heart.

Question 3

Marks	0	1	2	3	Average
%	28	61	10	0.5	0.8

To obtain full marks students needed to provide the correct suffix to the medical term.

- mastectomy: most students correctly identified 'ectomy' to form the medical term mastectomy.
- bronchiectasis: very few students were able to correctly identify 'ectasis' as the suffix to complete the medical term for dilation of the bronchus, instead writing 'dilation'.
- cardiogram: the suffix for an instrument for recording electrical activity of the heart was most often stated as 'graph', which is the record of, rather than 'gram', which is the instrument for recording.

Question 4

Marks	0	1	2	Average
%	2	57	41	1.4

Students were generally able to identify one way that Keanu could help manage his blood pressure without medication but often did not describe how it would help in lowering his blood pressure, as was required by the question.

The following are examples of possible responses.

- Exercise: regular exercise strengthens the heart making it pump more blood with less effort, and thus the force on the arteries decreases, lowering blood pressure.
- Eat a healthy well-balanced diet: will help with weight loss and reduce the risk of developing arteriosclerosis, or hardening of the arteries, and atherosclerosis, the build-up of fats in the arteries, which restricts blood flow.
- Drink alcohol in moderation: to reduce vasodilation and reduce blood pressure.
- Avoid, limit or reduce eating takeaway foods that are high in fats, sugar and salt: reduces blood cholesterol, reduces the development of atherosclerosis and arteriosclerosis, aids in weight loss, and reduces water retention (from salt intake).
- Select healthy takeaway options (e.g. salads): reduces blood cholesterol, reduces the development of atherosclerosis and arteriosclerosis, aids in weight loss, and reduces water retention (from salt intake).
- Lose weight: this will lower blood pressure by strengthening the heart, making it pump more blood with less effort; thus the force on the arteries decreases, reducing total blood volume.

Question 5a.

Marks	0	1	Average
%	16	84	0.8

This question was generally well answered with the majority of students correctly identifying LW as the correct response.

Question 5b.

Marks	0	1	2	3	4	5	Average
%	19	33	24	15	7	2	1.6

Very few students gained full marks for this question. The most well-known abbreviation was PPE. Most students could identify 'right' in R) NOF but not the remaining part of the abbreviation. The abbreviation O/A was not answered well, with many students stating 'On Arrival' or 'On Admission', thus not applying the abbreviation to the context of the handover list. ROM and ADLs were mainly unanswered.

The full medical terms for the abbreviations from the handover are:

R) NOF – right neck of femur

OA – osteoarthritis

ROM – range of movement or motion

ADLs – activities of daily living

PPE – personal protective equipment.

Question 6

Marks	0	1	2	Average
%	54	26	20	0.7

High-scoring responses included the following:

- the transport of lymphocytes in the immune response
- transport of proteins and fat
- return of excess fluid and proteins to the circulatory system
- transport of pathogens to lymph nodes.

Some student responses identified transport or protection as the key function of lymph fluid but did not provide detail of how this occurs.

Students who did not answer the question or responded that lymph fluid filters blood or transports nutrients to the cells of the body did not gain any marks. Some students discussed the function of the lymphatic system or the lymph nodes, rather than lymph fluid specifically.

Question 7

Marks	0	1	2	3	4	5	Average
%	8	14	21	25	20	12	2.7

In general, students were unable to label all parts of the digestive system as indicated on the diagram. The most correctly labelled part was the liver, but a few students labelled it as the stomach.

Where students correctly identified the oesophagus and the pancreas but misspelt the names of these organs as 'esophagus' and 'pancrease', no marks were awarded. The majority of students correctly labelled the small intestine, though some confused it with the large intestine.

The most incorrectly labelled part was the salivary gland or parotid gland, with students often labelling it epiglottis, tonsils or adenoids.

Question 8

Marks	0	1	2	3	4	Average
%	9	11	16	24	40	2.7

To obtain full marks, students needed to match the explanation to a medical term. The most common mismatched explanation and medical term was 'the absence of oxygen in the blood', which many students called 'apnoea' instead of 'anoxia'.

Many students misspelt the medical terms in this question, despite them being provided in the question. The correct medical terms are as follows.

Explanation	Medical term
a flap of cartilage that prevents food entering the larynx	epiglottis
clusters of air sacs located at the end of bronchioles	alveoli
the absence of oxygen in the blood	anoxia
tiny hairs in the mucous membranes lining the respiratory tract	cilia

Question 9a.

Marks	0	1	2	Average
%	33	10	57	1.2

Many students correctly answered that epidermis and dermis are the two main layers of skin. Students who identified correctly the two main layers of the skin but misspelt one or both layers were not awarded marks.

Question 9b.

Marks	0	1	2	Average
%	53	25	22	0.7

High-scoring responses identified a type of tissue and described a correct function. Some students were able to identify one type of tissue but did not describe the function.

Many students listed muscle tissue, which does not directly lie under the dermis and epidermis. Epithelial tissue was another common incorrect response; it is the outermost layer of the skin that is composed of epithelial tissue and not the innermost layer.

Types of tissue included subcutaneous tissue, hypodermis, adipose tissue, fat, nervous tissue, connective tissue and fascia.

Question 10

Marks	0	1	2	Average
%	36	30	34	1.0

Many students were able to identify that shivering produces heat through rapid muscle contraction and relaxation. Other correct responses included vasoconstriction and goosebumps with a link to the musculoskeletal function (the smooth muscle of blood vessels constrict or arrector pili muscles cause hairs to stand on end).

The cardiovascular system is involved in the redirection of blood flow to vital organs and away from extremities as a way to maintain homeostasis; therefore, students who stated this as a way of increasing body temperature were not awarded marks.

Question 11

Marks	0	1	2	Average
%	38	36	26	0.9

Many students were able to correctly describe the function of muscle tissue but did not provide enough depth or accuracy for the other main tissue types. Responses that did not score marks were too vague or lacked detail: for example, nervous tissue relays information about the body.

Students who scored highly were able to directly link tissue function with the digestive system, such as:

- nervous tissue – sends information to the brain regarding hunger and appetite
- epithelial tissue – protects the lining of organs such as the stomach from digestive substances
- connective tissue – provides structural support for organs such as the stomach and intestines, holding them in place

- muscle tissue – is responsible for peristalsis in the intestines, which enables the propulsion of food along the digestive tract.

Question 12

Marks	0	1	2	3	4	Average
%	1	14	31	5	49	2.9

Many students were able to correctly respond to this question. Although students were generally able to identify the correct terms, misspelling of medical terminology was again a common issue, despite the correctly spelt terms forming part of the question

Functions	Body part
maintaining intraocular pressure	aqueous humour
hearing	cochlea
transmitting sound to the middle ear	tympanic membrane
allowing light to enter the eye	pupil

Question 13

Marks	0	1	2	Average
%	24	14	62	1.4

Most students correctly identified 'malleus' and 'oral' as the correct words.

Question 14

Marks	0	1	2	3	4	5	6	7	8	Average
%	16	11	11	9	13	14	14	9	4	3.6

Responses to this question varied in terms of accuracy. Many students were able to identify the correct word parts and correctly defined the medical term.

Some students, who correctly identified the word parts, did not gain full marks because they either did not define the medical term or their definition was incorrect. A common error was to not include the suffix in the definition. For example, the correct definition for tachycardia is 'condition of fast heart rate (-ia)'; some students only wrote 'fast heart rate'.

Similarly, many students incorrectly described urology as 'the study of urine' rather than 'the study of the urinary system'.

Many students placed combining forms in the 'root word' column (e.g. Ur/o or Thyr/o), making the response incorrect.

Section C

Case study 1

Question 1a.

Marks	0	1	2	Average
%	63	16	21	0.6

Students who gained full marks were able to explain that a motor symptom relates to movement and a non-motor symptom does not relate to movement.

Common errors included incorrectly explaining motor symptoms as either voluntary or controlled muscle movement and non-motor symptoms as either involuntary or uncontrolled muscle movement. A few students who described how a person moves were also not awarded marks.

Question 1b.

Marks	0	1	Average
%	10	90	0.9

The majority of students answered this question correctly. Any one of the following responses were acceptable:

- seek clarification from the GP
- ask another colleague
- look at a medical terminology dictionary
- look it up on a medical terminology website
- ask a supervisor or manager
- ask a health professional.

Incorrect or inappropriate responses to the question included asking the client, 'looking it up' or 'Google it' because they did not provide a specific medical reference.

Question 2

Marks	0	1	2	3	Average
%	73	19	6	3	0.4

Most students were able to provide the meaning of the term 'gait'; however, the other two medical terms were less well known and understood. When a student comes across a medical term that is not familiar, it is recommended the student breaks down the word into its component parts and then provide the meaning to each component part: for example, brady (prefix, meaning slow) / kines (root word, meaning movement) / ia (suffix, meaning condition of) – the meaning of bradykinesia is a condition of slow movement.

Accepted responses included:

Term	Meaning
bradykinesia	slow/reduced/loss of movement
diplopia	double vision

Term	Meaning
gait	the way a person walks/walk/pattern of walking

Question 3

Marks	0	1	2	Average
%	63	24	13	0.5

Students were required to describe what they need to consider when preparing a patient with low blood pressure for an MRI scan. In general, students did not answer this question well, as many described preparing a patient (e.g. 'explain the procedure', 'gaining consent') but did not relate it to hypotension.

Correct responses included:

- be careful getting the patient to stand/sit up quickly
- ask the patient to sit on the edge of the bed before standing
- ask the patient if they are feeling lightheaded or dizzy
- explain the procedure and instructions to the patient on what to do if they feel dizzy or lightheaded at any stage
- check the patient's blood pressure before the scan and, if low, report to medical or nursing staff.

Question 4

Marks	0	1	2	Average
%	15	52	33	1.2

Overall, the question was well answered. High-scoring responses identified the two required benefits and specifically related it to Max's health issues. Many students just stated two benefits without description.

Students who gained one mark could either name and describe two benefits but did not relate it specifically to Max's health issues or they just stated two benefits without any description.

Accepted responses included any two of the following:

- maintain or improve mobility
- maintain or improve balance
- reduce constipation
- improve mental health and mental wellbeing
- maintain or improve muscle tone and strength
- maintain bone density
- improve gait
- reduction in tremors
- improve motor coordination.

Question 5

Marks	0	1	2	Average
%	32	33	35	1.0

Some students listed an array of symptoms but did not outline how they are related to Parkinson's disease.

Many students did not answer this question. It is suggested that students attempt the question by reading through the case study to identify symptoms that are abnormal to the normal function of the digestive system.

High-scoring responses discussed the slowing or interruption of the digestive process and its relationship to impaired neural stimulus or reduction in dopamine and made reference to:

- difficulty swallowing
- constipation
- loss of sense of smell and taste
- depression reducing appetite
- decrease in motility and/or digestion
- decrease in neural innervation or stimulus, which slows digestive function.

Question 6

Marks	0	1	2	Average
%	22	48	30	1.1

This question was generally well answered, with most responses including the need for increased fibre, healthy diet and increased fluid intake.

High-scoring responses included reference to:

- a diet that is high in fibre, low in fat, salt and sugar
- drinking plenty of water
- healthy, well-balanced diet
- eating whole foods e.g. grains, vegetables and fruits
- slow eating and chewing
- avoiding lying down directly after a meal.

Question 7a.

Marks	0	1	Average
%	90	10	0.1

This question was not well answered, with very few students stating olfactory receptors, olfactory receptor neurons or chemoreceptors. Many students did not name the cells correctly, referring to them as 'olfactory' alone or 'olfactory cells'. Specific reference to 'receptors' was necessary.

Question 7b.

Marks	0	1	Average
%	75	25	0.2

Few students answered this question correctly. Common incorrect responses combined form rather than the root (e.g. rhin/o or nas/o) and were not awarded marks.

Question 8

Marks	0	1	Average
%	21	79	0.8

This question was answered well by the majority of students. Correct responses included:

- radiology department policies and procedures
- ask a supervisor, manager, health professional
- ask a doctor, GP, radiologist, radiographer
- refer to a radiology book, website
- refer to a professional body e.g. AMA/registration body such as AHPRA.

Case study 2

Question 9

Marks	0	1	2	3	4	5	Average
%	7	13	21	28	29	2	2.6

Few students were able to correctly state the full medical term for all five of the required abbreviations. The most correctly answered abbreviations were 6/52, RBC and SOB. The majority of students either did not answer POP or provided an incorrect response: for example, 'post-operative pain' or 'post-operative physiotherapy'. Spelling was also an issue with the word 'occupational' in the medical term for 'OT'.

Accepted responses included:

Abbreviation	Full medical term
6/52	6 weeks
OT	occupational therapist/therapy
POP	plaster of Paris
RBC	red blood cell
SOB	shortness/short of breath

Question 10

Marks	0	1	2	Average
%	20	33	48	1.3

This question was generally answered well, with many students gaining full marks. Some responses were either not specific (e.g. 'put the file away') or too general (e.g. 'no one must access the patient files' or 'don't talk about the patient to anyone').

Correct responses included:

- using a secure login to computers for eRecords
- not talking about a patient in a public area
- putting the file in a secure/designated area after use
- locking the file in a designated drawer or cupboard
- not leaving the notes out for public view
- not talking too loudly when discussing the patient
- logging off the computer, if eRecords
- only discussing with relevant or direct staff involved in care.

Question 11a.

Marks	0	1	2	Average
%	12	26	62	1.5

Students needed to identify the following issues from the case study.

Body system affected	Issue in case study
skeletal	fractured R) arm
circulatory	anaemia low red blood cell count shortness of breath

Question 11b.

Marks	0	1	2	3	Average
%	37	28	22	12	1.1

Students needed to explain either of the following relationships.

- Bone marrow, found in the centre of most bones, manufactures red and white blood cells and platelets. They could then explain the function of red blood cells (carry oxygen from the lungs and deliver to cells and pick up carbon dioxide from cells and take to lungs), white blood cells (protect against pathogens) or platelets (promote blood clotting).
- The skeletal system is the body's framework of bones, of which the thoracic cage is one part. The thoracic cage provides protection of internal organs from injury: for example, the heart, which is the major organ of the circulatory system.

Many students were able to state the function of each system but could not explain the relationship between the two systems.

Question 12

Marks	0	1	Average
%	26	74	0.7

Most responses were correct, although some students responded that conversations about a diet plan would be beneficial.

Correct responses included:

- dietary books
- information booklets or pamphlets about diet, exercise, mindfulness
- posters
- referral to a dietitian, nutritionist, exercise program, professional mental health advice
- dietary advice websites.