higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

THE HUMAN BODY AND MIND
NQF LEVEL 2

21 November 2023

This marking guideline consists of 7 pages.

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QUESTION 1

1.1 1.1.1 True
1.1.2 False
1.1.3 False
1.1.4 True
1.1.5 False
1.1.6 False
1.1.7 True
1.1.8 False
1.1.9 False
1.1.10 True

(10 × 1) (10)

1.2 1.2.1 Anatomy is the study of different parts of the body✓ and how they fit and work together to keep us alive.✓

1.2.2 The cell is the basic structural and functional unit of the body.✓ It is the smallest unit of living matter that can carry on all processes of life. Most cells can only be seen through a microscope.✓ The largest cell is the ovum.

(2 × 2) (4)

1.3 A – Plasma membrane
B – Nucleus
C – Cytoplasm

(3 × 1) (3)

1.4 1.4.1 Male reproductive system (1)

1.4.2 To make babies/to produce offspring (1)

1.4.3 The urethra✓ is common to both the male reproductive and the urinary system. It allows the passage of urine✓ from the urinary bladder to the outside of the body. The urethra transports semen✓ to the outside of the body. Both systems cannot use the urethra at the same time.✓ (4 × 1) (4)

1.5 1.5.1 Adam may not develop male sexual characteristics such as a deepened voice,✓ facial and body hair,✓ pubic hair,✓ and muscular physique.✓ He may not produce sperm cells or be able to get an erection.

(4 × 1) (4)

1.5.2
- Yes✓
- Underdeveloped testes may produce a small amount of testosterone.✓ He might produce cells that are small and weak.✓

OR

- No
- He has no testosterone, so the testes cannot produce sperm cells.

(Accept any relevant answer) (Any 1 × 3) (3)

[30]

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QUESTION 2

2.1	2.1.1	B	
	2.1.2	A	
	2.1.3	D	
	2.1.4	I	
	2.1.5	E	
	2.1.6	F	
	2.1.7	G	
	2.1.8	C	
	2.1.9	H	
	2.1.10	K	
			(10 × 1) (10)
2.2	2.2.1	Cell (cardiac cell)	
	2.2.2	Tissue (cardiac tissue)	
	2.2.3	Organ (heart)	
	2.2.4	Organ system (circulatory system)	
			(4 × 1) (4)
2.3	2.3.1	Female reproductive system	(1)
	2.3.2	• Mary does not have ovaries to produce oestrogen and progesterone. • The egg follicle will not grow and develop. • Ovulation will not take place; the cell cannot be fertilised. • Mary does not have a uterus. It cannot prepare for pregnancy to feed and protect the baby. • The fertilised ovum will not be able to implant and develop into a baby. (Accept any relevant answer) (Any 4 × 1)	(4)
	2.3.3	Menopause occurs when the production of oestrogen slows down or stops.✓ Mary is too young✓ to go through natural menopause. She is now forced into menopause.✓ To counteract this, she will need to replace the hormones (oestrogen and progesterone) produced by the ovaries. (Accept any relevant answer) (Any 3 × 1)	(3)
2.4	2.4.1	• Brain and nervous system • Muscular system • Skeletal system • Skin and integumentary system (Accept any relevant answer) (Any 2 × 1)	(2)
	2.4.2	a) Sensory input The hot flame sends a sensation of heat/pain. b) Integration The brain processes the information and makes a decision to remove the hand from the heat source. c) Motor output The hand is removed from the source of heat/pain. (3 × 1)	(3)

2.4.3 Alcohol slows down the ability to feel the sensation.✓ The brain will not receive the message in time✓ and will take longer to make a decision.✓ The motor nerves take longer to respond, so the hand may burn and the pain will be more severe.
(Accept any relevant answer) (Any 3 × 1) (3)
[30]

QUESTION 3

3.1 3.1.1 B
3.1.2 A
3.1.3 D
3.1.4 C
3.1.5 A
(5 × 1) (5)

3.2 3.2.1
- Aorta
- Left pulmonary veins
- Right pulmonary veins

(Accept any relevant answer) (Any 2 × 1) (2)

3.2.2
- Superior vena cava
- Inferior vena cava
- Left pulmonary artery
- Right pulmonary artery

(Accept any relevant answer) (Any 2 × 1) (2)

3.2.3
- The heart is a muscular organ that can contract and relax.
- The heart is divided into a left and a right side via a septum.
- The left side of the heart receives deoxygenated blood.
- The right side of the heart receives oxygenated blood.
- The heart is divided into four chambers. Upper chambers are atria and bottom chambers are ventricles.
- Oxygenated blood is received from the lungs via the four pulmonary veins. The oxygenated blood enters the right atrium.
- When the right atria contract, the blood is forced through the tri-cuspid valve into the right ventricle.
- When the right ventricle contracts, the blood is forced through the aortic valve into the aorta.
- The aorta delivers the oxygenated blood to the body.

(Accept any relevant answer) (Any 6 × 1) (6)

3.2.4
- Take deep breaths in and out.
- Make sure that you treat any medical conditions such as asthma.
- Exercise regularly.
- Go outside and get fresh air.
- Dink lots of water to hydrate the lungs.
- Eat foods high in iron.
- Do not smoke. (Accept any relevant answer) (Any 3 × 1) (3)

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3.3 3.3.1
- Respiratory system
- Urinary system
- Skin and integumentary system
- Digestive system (4 × 1) (4)

3.3.2
- Carbon dioxide
- Urine
- Sweat
- Faeces (4 × 1) (4)

3.3.3
- If urine is not produced in the kidneys, the body will retain too much water, disrupting the salt and fluid balance. The blood will not get filtered and wastes will circulate and accumulate in the circulatory system.
- The bladder will continue to fill with urine and stretch. This can cause discomfort and pain.
- Faeces will accumulate in the intestines causing constipation, bloatedness and an uncomfortable feeling.
- If carbon dioxide is not removed, oxygen cannot be taken into the blood. You will become weak and tired. Oxygen will not be taken up into the body cells to perform cellular function.
- If sweat is not excreted, the body will not be able to cool off and temperature regulation will not take place.
- In all cases it can lead to infection.
- The person may even die.

(Accept any relevant answer) (Any 4 × 1) (4)

[30]

QUESTION 4

4.1
4.1.1 Pubic
4.1.2 Skull
4.1.3 Carotid
4.1.4 37
4.2.5 Extension

(5 × 1) (5)

4.2
- Sight✓ – a person who cannot see will not be able to read a book or a poster.✓
- Smell✓ – a person will not be able to tell if the food is burning on the stove.✓
- Taste✓ – a person will not be able to tell if the milk is sour or not.✓
- Hearing✓ – a person will not be able to hear the siren of the ambulance.✓
- Touch – a person will not be able to distinguish between hot and cold.

(Accept any relevant answer) (Any 4 × 2) (8)

4.3 4.3.1
- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase (5 × 1) (5)

4.3.2 The cell will die. (1)

4.4
- The skeletal system keeps the body upright, provides a framework and protects internal organs.
- Skeletal muscles are attached to the skeleton.
- Muscles contract and relax.
- The muscles allow for movement of the bones.
- The muscles keep the bones in place.
- Joints make it possible that the bones move in various directions.

(Accept any relevant answer) (Any 4 × 1) (4)

4.5 4.5.1
- A primary assessment is to establish if the patient is breathing✓ and has a pulse.✓
- A secondary assessment is to check for any obvious injuries✓ such as broken bones and bleeding.✓ (2 × 2) (4)

4.5.2
- No
- The patient may have a spinal injury.
- Moving a patient may result in paralysis.

(Accept any relevant answer) (3 × 1) (3)

[30]

QUESTION 5

5.1
5.1.1 Oral
5.1.2 Latency
5.1.3 Flat
5.1.4 Cognition
5.1.5 Trust

(5 × 1) (5)

5.2
- Confident
- Trustworthy
- Friendly
- Helpful
- Caring (Accept any relevant answer) (Any 4 × 1) (4)

5.3
5.3.1 mistrust
5.3.2 generativity
5.3.3 isolation
5.3.4 initiative
5.3.5 shame

(5 × 1) (5)

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5.4 5.4.1
- Shock and denial
- Anger
- Bargaining
- Depression
- Acceptance (5 × 1) (5)

5.4.2
- Shock and denial – She may deny the diagnosis.
- Anger – She become angry with God or blame others for her illness.
- Bargaining – She may try to negotiate with doctors or friends to be cured; she may start to pray for her health.
- Depression – She may show signs of withdrawal, sleeplessness and suicidal thoughts.
- Acceptance – She may realise that death is unavoidable and start to accept it. She may talk to friends and family about it.

(Accept any relevant answer) (5 × 1) (5)

5.5 5.5.1
- Id
  James needs money. It is a basic need that wants to be satisfied, so he will want to keep the wallet.

- Ego
  The ego is the rational component. It strives to guide the id into socially acceptable behaviour. James might initially let the id overrule the superego and make the wrong decision to take the wallet.

- Superego
  This is the moral agent of our personality. This is what we know as right or wrong. James knows that returning the wallet is right and that keeping the wallet is wrong.

(Accept any relevant answer) (3 × 1) (3)

5.5.2
- No✓
- James knows that he must return the wallet.✓ He will feel good about himself. Others will think that he is a good person too.✓

OR
- Yes
- James needs the money to buy food. He knows that it wrong. He will have to live with the guilt of stealing.

(Accept any relevant answer) (Any 1 × 3) (3)

[30]

TOTAL: 150