higher education & training

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REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

THE HUMAN BODY AND MIND
NQF LEVEL 4

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)
THE HUMNA BODY AND MIND
NQF LEVEL 4
TIME: 3 HOURS
MARKS: 200

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Use only a black or blue pen.
5. Write neatly and legibly.

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QUESTION 1

1.1 Complete the following sentence or sentences by choosing a word or words from those given in brackets. Write only the answer next to the number (1.1.1–1.1.10) in the ANSWER BOOK.

1.1.1 The (trachea/oesophagus) is kept open by C-shaped cartilage rings.

1.1.2 The (hypodermis/dermis) consists of adipose tissue.

1.1.3 The (spleen/kidney) is a dark red, bean-shaped organ.

1.1.4 The (oesophagus/vagina) is an elastic muscular tube that is 8-10 centimetres long.

1.1.5 The (left/right) lung has three lobes.

1.1.6 The trachea is situated (posterior/anterior) to the oesophagus.

1.1.7 The (stomach/liver) is situated on the left side of the upper abdomen below the diaphragm.

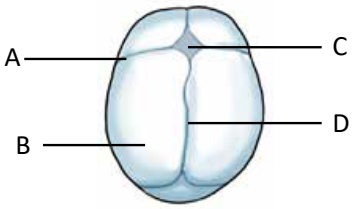
1.1.8 The (large/small) intestines occupy the biggest area of the abdomen.

1.1.9 The (liver/gallbladder) produces bile.

1.1.10 The (pancreas/gallbladder) lies in the curve of the duodenum.

(10 × 1) (10)

1.2 Consider FIGURE 1 and answer the questions that follow:



[Source: *www.skullsunlimited.com*]

FIGURE 1

1.2.1 Label the diagram (A-D) in FIGURE 1 above. (4 × 1) (4)

1.2.2 Briefly describe the physical features of an infant's skull by completing the table below. Redraw the table in the ANSWER BOOK.

INFANT	
Teeth	
Bones	
Fontanelles	
Size	

(4 × 1) (4)

1.2.3 Why is it important to measure the circumference of an infant skull? (1 × 2) (2)

1.2.4 What would the effect be if the sutures of the infant skull ossify too early after birth? (1)

1.2.5 Explain why the facial area of an infant skull is much smaller than the cranial area. (5)

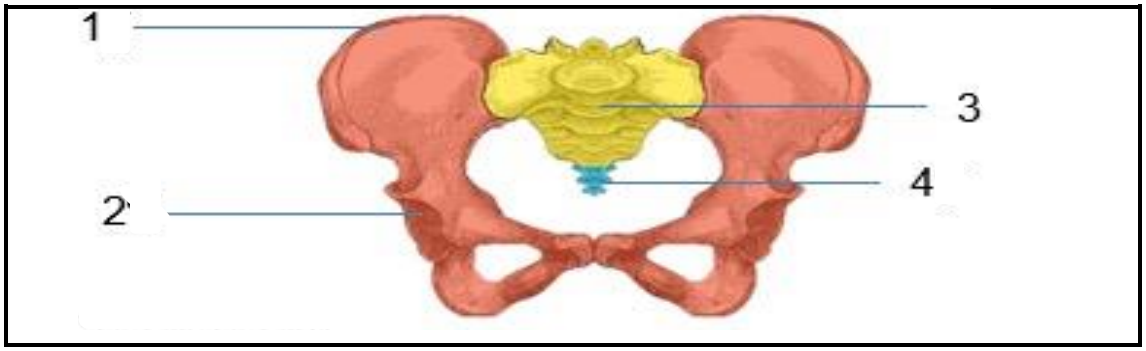


[Source: www.skullsunlimited.com]

FIGURE 2

1.2.6 Give TWO reasons for the difference between the skull of an infant and the skull of an adult. (2 × 2) (4)

1.3 Label the diagram (1-4) in FIGURE 3 below. (4 × 1) (4)



[Source: *teachmeanatomy.com*]

FIGURE 3

1.4 Identify a gland from the following descriptions.

1.4.1 The gland that secretes growth hormone.

1.4.2 The gland that secretes progesterone and oestrogen.

1.4.3 The gland that secretes adrenaline.

1.4.4 The gland that secretes thymosin.

1.4.5 The gland that secretes the male sex hormone.

1.4.6 This gland is shaped like a butterfly and secretes thyroxine.

(6 × 1) (6)

[40]

QUESTION 2

2.1 Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–K) next to the question number (2.1.1–2.1.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
2.1.1	… is when the internal environment of the body remains in constant.	A	autonomic
2.1.2	…allows for the transmission of nerve impulses.	B	peripheral
2.1.3	Immediate, involuntary motor response to a sensory stimulus is a …	C	homeostasis
2.1.4	The … nervous system is divided into the sympathetic nervous system and the parasympathetic system.	D	negative
2.1.5	Transmission of nerve impulses takes place at … without neurons making physical contact.	E	synapses
2.1.6	The somatic and autonomic nervous systems are the two main components of the … nervous system.	F	hypothalamus
2.1.7	Fluid found between meninges is …	G	grasping
2.1.8	The … feedback system of the endocrine system is a set of corrective steps to control imbalances in the secretion of hormones.	H	neurotransmitters
2.1.9	… controls body temperature.	I	cerebrospinal
2.1.10	The … reflex is an involuntary movement that is developed in the first two months of life.	J	thalamus
		K	reflex arc

(10 × 1) (10)

2.2 Differentiate between the *somatic* and *autonomic nervous system* and give an example of each. (3 × 2) (6)

2.3 Name and briefly discuss the steps followed by a baby when reaching out to grab an object. (8 × 1) (8)

2.4 Waste products are continuously produced and excreted from the body.

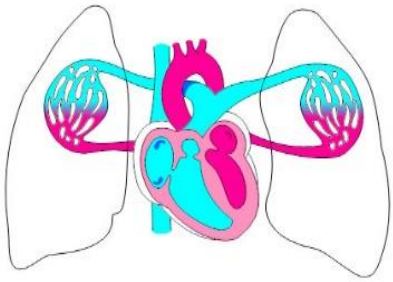
2.4.1 Explain how waste is removed from the skin. (3 × 1) (3)

2.4.2 Give THREE consequences if digestive waste is not removed from the body. (3)

2.4.3 Describe the process of defecation. (5 × 1) (5)

2.5 The respiratory system and the cardiovascular system depend on each other to ensure that all systems in the body can function as they should.

Comment on the statement above along with the diagram in FIGURE 4 below. (5)



[Source: *teachmeanatomy.com*]

FIGURE 4

[40]

QUESTION 3

3.1 Complete the following sentence or sentences by choosing a word or words from the list below. Write only the answer next to the question number (3.1.1–3.1.10) in the ANSWER BOOK.

comfort; non-verbal; moral; language; perception; stimulus; separation anxiety; technology; receptors; negative

3.1.1 Cultural differences influence … development

3.1.2 If an attachment figure is not available, the young child may experience …

3.1.3 Children want to return to an attachment figure for …

3.1.4 Emotions and motivation can have an important effect on ...

3.1.5 Each sensory organ has its own … to sense information from the environment.

3.1.6 … plays an important role in communication.

3.1.7 … communication refers to messages that do not include words.

3.1.8 Respondent behaviour refers to a specific response to a known …

3.1.9 … reinforcement is applied if a child is disobedient.

3.1.10 … is important to enable society to transmit knowledge across different generations.

(10 × 1) (10)

3.2 Explain each of the following stages of Kohlberg's moral development theory.

3.2.1 Stage 1

3.2.2 Stage 2

3.2.3 Stage 3

3.2.4 Stage 4

3.2.5 Stage 5

3.2.6 Stage 6

(6 × 1) (6)

3.3 Choose the stage according to Juan Piaget's stages of cognitive development from the list below. Write only the answer next to the question number (3.3.1–3.3.4) in the ANSWER BOOK.

pre-operational stage; concrete operations; formal operations; sensory-motor stage

3.3.1 Children are egocentric and only see things from their point of view.

3.3.2 Children at this stage begin to think logically about concrete events. They understand the concept of conversation.

3.3.3 Infants learn to know the world around them through movements and sensation.

3.3.4 Children can think abstractly and approach problems from different points of view.

(4 × 1) (4)

3.4 Give FIVE reasons why children start to use drugs. (5)

3.5

Charl is developing a sense of identity in relation to his peer group but sometimes he wonders about himself and who he is. Ntombi is in a serious relationship with her boyfriend, and she hopes that it might lead to a marriage because she does not want to be lonely. Lenny looks back on his life with a smile because he gained a lot of wisdom and used his opportunities well. Sandy has a lot of life experience and is able to guide the younger generation who lack experience in life. She is not ready to retire yet. Ben depends on his parents to care for him with love. He will learn to trust them.

Identify what stage of development is referred to according to Erik Erikson in relation to the statement attached to the name of each person above? (5 × 2) (10)

3.6 What would you consider as bad communication? (5 × 1) (5)

[40]

QUESTION 4

4.1 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (4.1.1–4.1.10) in the ANSWER BOOK.

4.1.1 Internal respiration refers to the …

A exchange of gases between the body and the atmosphere.
B inhalation of gases.
C exhalation of gases.
D exchange of gases between the capillaries and the cells.

4.1.2 External respiration refers to the …

A exchange of gases between the alveoli and the capillaries.
B exchange of gases between the body and the atmosphere.
C inhalation of gases.
D exchange of gases between body cells and blood.

4.1.3 The blood vessel that takes oxygenated blood away from the heart:

A Coronary sinus
B Inferior vena cava
C Aorta
D Superior vena cava

4.1.4 Oxygenated blood travels from the lungs through the pulmonary veins into the …

A right atrium.
B right ventricle.
C left ventricle.
D left atrium.

4.1.5 Deoxygenated blood returns to the … via the inferior and superior vena cava.

A right atrium
B right ventricle
C left ventricle
D left atrium

4.1.6 The cardiovascular and respiratory centres are situated in the …

A anterior pituitary.
B hypothalamus.
C medulla oblongata.
D posterior pituitary.

4.1.7 … in red blood cells combines with oxygen to make the transport of oxygen possible.

A Platelets
B Haemoglobin
C Lymphocytes
D Plasma

4.1.8 Muscles that contract and lift the ribcage during inhalation:

A Intercostal
B Deltoid
C Diaphragm
D Pectoralis

4.1.9 Membranes that give protection to lungs:

A Meninges
B Pericardium
C Peritoneum
D Pleura

4.1.10 … occurs when there is too much carbon dioxide in the blood.

A Alkalosis
B Homeostasis
C Acidosis
D Peristalsis

(10 × 1) (10)

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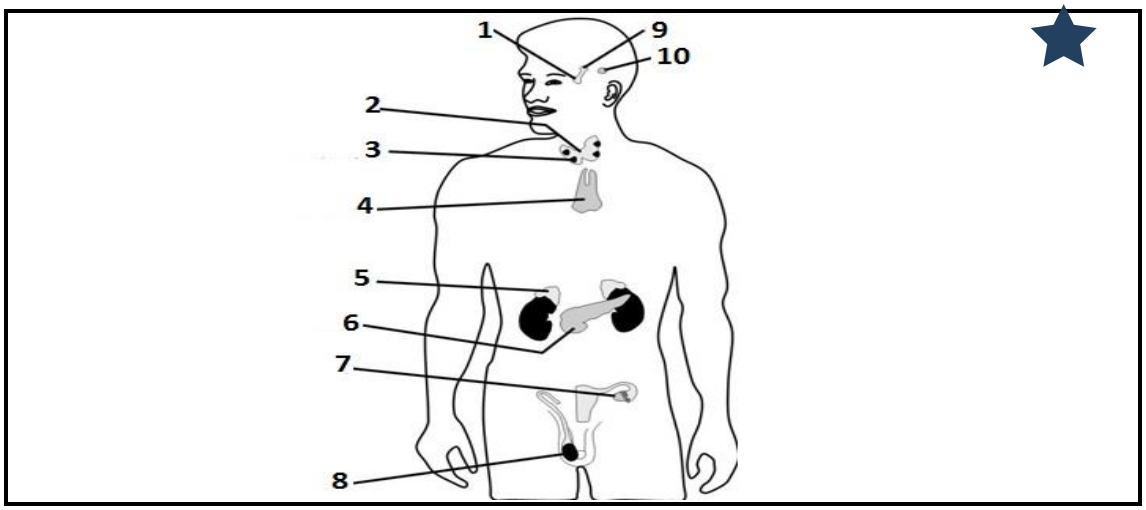
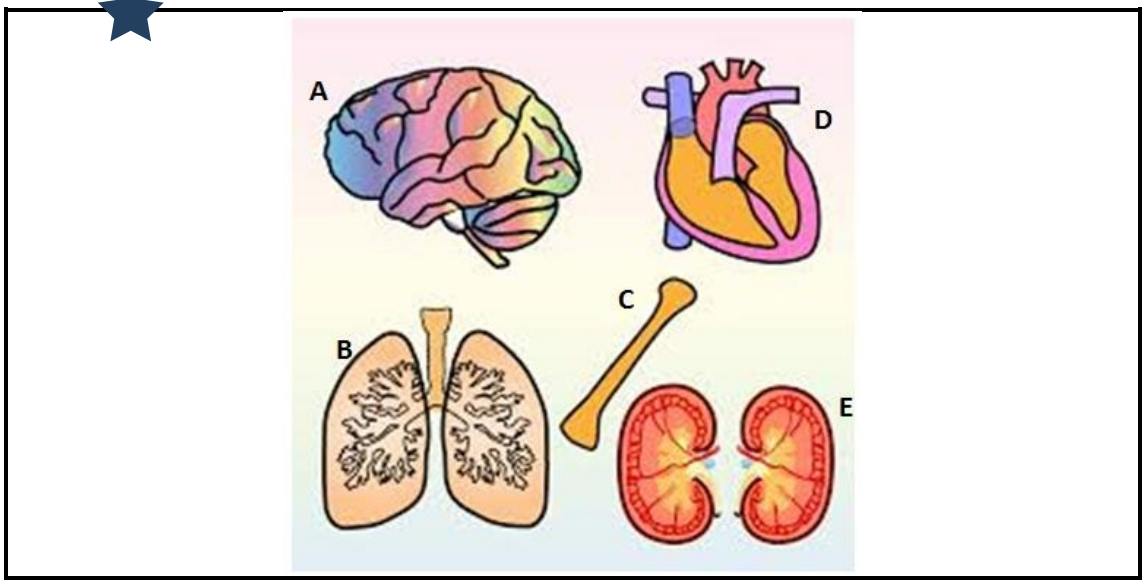
4.2 Label the diagram (1–10) of the endocrine system seen in FIGURE 5 below. (10)



[Source:*anatomybody.org*]

FIGURE 5

4.3 Identify the systems in FIGURE 6 to which the following organs (A-E) belong: (5)



[Source: *humananatomychart.us*]

FIGURE 6

4.4 If waste products are not excreted from the body, toxins will build up and cause damage to the body.

4.4.1 What do the urinary system, skin, digestive system and respiratory systems have in common? (2)

4.4.2 Name FOUR excretory organs and give the excretion product of each. (4 × 2) (8)

4.5 The features of a female pelvis make provision for the normal uncomplicated delivery of a baby.

Describe how the features of a female pelvis are adapted for the normal uncomplicated delivery of a baby. (5 × 1) (5)

[40]

QUESTION 5

5.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (5.1.1–5.1.10) in the ANSWER BOOK.

5.1.1 Principles of perception are closure, constancy and context.

5.1.2 Receptors of sensory organs change sensory information into nerve impulses, which influence our perception.

5.1.3 Young children are not afraid of people they do not know.

5.1.4 Operant behaviour refers to a specific response to a known stimulus.

5.1.5 Senses, reflexes and motor abilities develop very slowly during the sensory-motor stage of Piaget.

5.1.6 There can be cultural differences because of conflicting styles of speech.

5.1.7 Emotions and motivation do not have an important effect on perception.

5.1.8 According to Kohlberg not all people reach the highest level of morality.

5.1.9 A child who passes a test does not have to be rewarded.

5.1.10 Tactile perception refers to the sense of touch.

(10 × 1) (10)

5.2 List SEVEN reasons why people prefer to use traditional medicine. (7 × 1) (7)

5.3 Name the systems referred to in 5.3.1-5.3.3:

5.3.1 The system that provides structure to the body and protects vital organs.

5.3.2 The system that secretes hormones.

5.3.3 The system that provides the body's defence against bacteria, viruses, and other harmful pathogens.

(3 × 1) (3)

5.4 Paul was walking home one day, and he suddenly heard shouting and gunshots. He ran as fast as he could to get away from the shooting. He was shivering with fear. His sister Maya was at home listening to music while she relaxed on her bed.

5.4.1 Name the division of the autonomic system that played a role in Paul's experience. (1)

5.4.2 Name the division of the autonomic system that played a role when Maya was relaxed. (1)

5.4.3 Differentiate between the TWO systems mentioned in QUESTION 5.4.1 and 5.4.2 in table form. Refer to the eyes, digestion, breathing and heart rate.

	Sympathetic	**Parasympathetic**
Eyes		
Digestion		
Breathing		
Heart rate		

(4 × 2) (8)

5.5 The nervous system is divided into different areas.

Redraw and complete the following table to indicate the different divisions of the nervous system.

NERVOUS SYSTEM				

(6 × 1) (6)

5.6 The connection between the mind and body is strong. Our mind helps us interpret our mental state.

Why does a healthy body depend on a healthy mind? (4 × 1) (4)

[40]

TOTAL: 200

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