higher education & training

Department:
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REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

THE HUMAN BODY AND MIND
NQF LEVEL 3

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)
THE HUMAN BODY AND MIND
NQF LEVEL 3
TIME: 3 HOURS
MARKS: 180

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. Write neatly and legibly.

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QUESTION 1

1.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.1.1–1.1.10) in the ANSWER BOOK.

1.1.1 Anaphylactic shock is when the immune system attacks body tissue in response to an allergen.

1.1.2 The intrinsic lingual muscle is a muscle of the neck.

1.1.3 Saliva is needed for digestion.

1.1.4 31 pairs of cranial nerves originate from the brain.

1.1.5 The epiglottis is a structure of cartilage found in the neck.

1.1.6 The cervical plexus conducts impulses to the neck structures.

1.1.7 The shoulder girdle attaches the arm to the thorax.

1.1.8 Haemothorax is a condition where the pleural space between the membranes that surround the lungs fill with water.

1.1.9 The small intestine extends from the stomach to the colon.

1.1.10 The ovaries are 10-centimetre-long tubes.

(10 × 1) (10)

1.2 Give the region and position of the following organs:

1.2.1 Stomach (3 × 1) (3)

1.2.2 Uterus (3 × 1) (3)

1.2.3 Pancreas (4 × 1) (4)

1.3 Third-degree burns destroy the epidermis and dermis, and may also damage the underlying bones, muscles and tendons.

Discuss how the function of the skin will be affected. (5 × 2) (10)

[30]

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QUESTION 2

2.1 Choose the correct term from those in brackets and write it next to the question number (2.1.1–2.1.10) in the ANSWER BOOK.

2.1.1 The (frontal/occipital) bone protects the brain anteriorly.

2.1.2 The upper abdominal structures are protected by the (thoracic/lumbar) vertebrae posteriorly.

2.1.3 Eyebrows are situated (superior/anterior) to the eye.

2.1.4 The (conjunctiva/eyelids) is/are intra-ocular structures.

2.1.5 The (choroid/sclera) is the middle layer of the eye.

2.1.6 Disease-causing germs are called (antigens/pathogens).

2.1.7 Yeast infections are caused by (parasites/fungi).

2.1.8 (Viruses/Fungi) can be present in the body for a long time without showing symptoms.

2.1.9 We are born with (innate/adaptive) immunity.

2.1.10 The (dura mater/pia mater) lines the brain.

(10 × 1) (10)

2.2 Read the scenario below and answer the questions that follow:

> While you are writing the final Human Body and Mind (HBM) examination, the venue is absolutely silent, except for the chirping of the birds outside. Someone is wearing perfume which is causing a nose itch and sneezing. You are annoyed at the sound of your invigilators' shoes. The energy drink you had early morning is causing acid reflux and a burning sensation on your chest. You look at the clock and see that there are five minutes reading time left. Your bladder feels full and you wonder if you will be allowed to go to the bathroom before the exam starts.

2.2.1 Discuss how the FOUR senses, except taste, play a role. Substantiate your answer by choosing words from the scenario.
(4 × 2) (8)

2.2.2 Give the name of the sphincter that might be the cause of the acid reflux and the name of the condition. (1 + 1) (2)

2.2.3 Identify TWO body systems from the scenario. Choose words from the scenario to substantiate your answer. (2 × 2) (4)

2.2.4 Identify an example of natural immunity from the scenario. (1)

2.3 Your HBM lecturer delegates you a task to convince your fellow students to use mind maps as a study aid. Which information will you give them? (5)

[30]

QUESTION 3

3.1 State the name of the theory each of the following theorists are well-known for. Write only the answer next to the question number (3.1.1–3.1.5) in the ANSWER BOOK.

3.1.1 BF Skinner

3.1.2 Ivan Pavlov

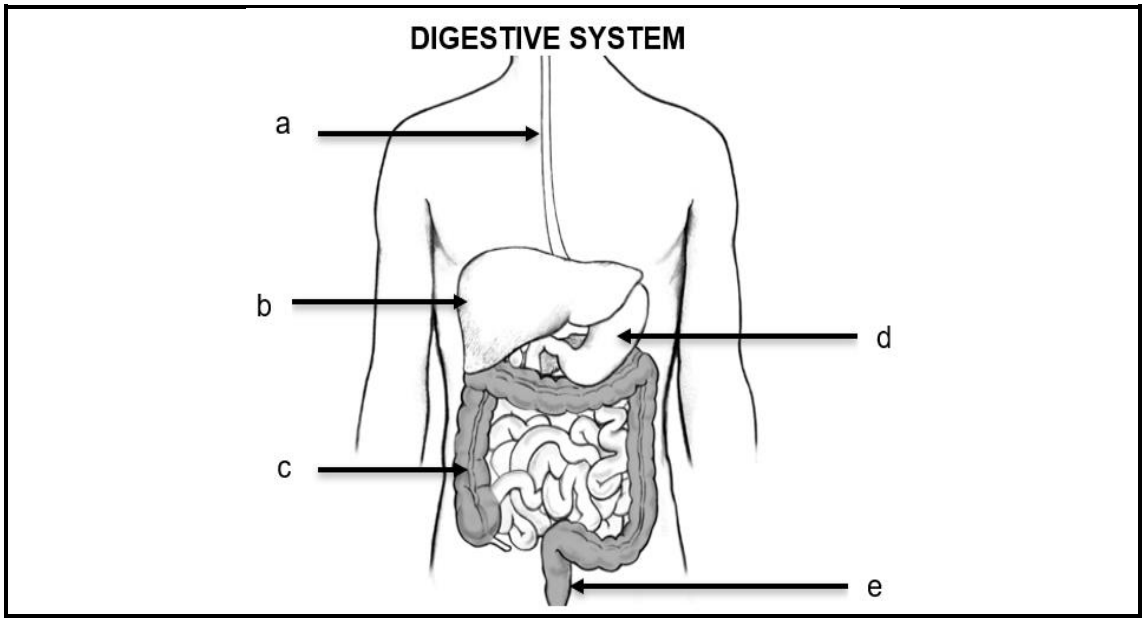
3.1.3 Sigmund Freud

3.1.4 Jean Piaget

3.1.5 Erik Erikson

(5 × 1) (5)

3.2 Complete the labels. Write only the answer next to the letter (a–e) in the ANSWER BOOK.



[Source: *https://www.niddk.nih.gov/news/media-library/18253*]

(5 × 1) (5)

3.3 Identify whether the ID, EGO or SUPEREGO is applied in each of the following cases. Write only the answer next to the question number (3.3.1–3.3.10) in the ANSWER BOOK.

3.3.1 A child throws a tantrum in a shop over a packet of chips.

3.3.2 A student decides to find the owner of a lost cellphone in class because it would be wrong to keep it.

3.3.3 You want to take someone's colour pencil but decide to ask because the person might think you are rude.

3.3.4 In a group task at school, a girl thinks her idea is better than her friend's but tries to find common ground on how to incorporate both ideas because she wants to maintain harmony.

3.3.5 A boy wants a book in a library but does not have a library card and decides to sneak out with the book.

3.3.6 A girl sees a big bowl of candy at a party. She is tempted to take a handful but decides that it would be disrespectful and unfair towards the others.

3.3.7 A woman feels the need to steal office supplies from work. However, she knows such behaviour will be wrong.

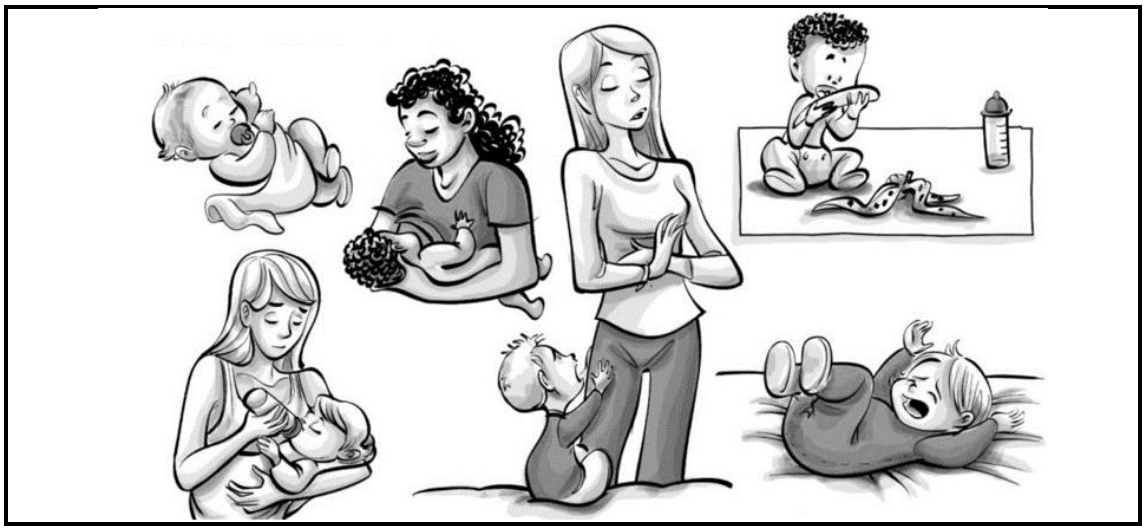
3.3.8 A student in the feeding scheme line is very hungry but decides not to jump the line because it will anger other students.

3.3.9 A taxi driver overtakes a vehicle on the yellow line even though it is against traffic rules. The aim is to be in front of the line at the taxi rank to make more money than others.

3.3.10 A student did not study well for an HBM exam and is tempted to cheat. However, because he realises it would be wrong, he decides against it.

(10 × 1) (10)

3.4 Analyse the picture below and answer the questions that follow.



[Source: *https://sproutsschools.com/-development-theory-freud/]*

3.4.1 Name and discuss the developmental stage of Freud which is illustrated in the picture. (5 × 1) (5)

3.4.2 What is the age range of the babies? (1)

3.4.3 What can the possible consequences be if the stage mentioned in QUESTION 3.4.1 is not successfully implemented? (3 × 1) (3)

3.4.4 State the developmental stage of Erikson, in which the babies are. (1)
[30]

QUESTION 4

4.1 Read the scenario below and answer the questions that follow.

While many construction job sites require hard hats as part of the basic personal protective equipment (PPE) to be worn at all times, safety standards require head protection in only a few situations. Protection should be provided when there is potential falling objects, low hanging objects or protruding (distended) objects.

[Source: *https://safesitehq.com/head-protection/*]

4.1.1 Which organ needs to be protected by wearing PPE on construction sites? (1)

4.1.2 Does the organ mentioned in QUESTION 4.1.1 belong to the central or peripheral nervous system? (1)

4.1.3 Discuss the possible consequences of not wearing hard hats at a construction site. (5 × 1) (5)

4.1.4 Discuss why it is likely OR unlikely for someone to become a paraplegic due to a head injury. (3 × 1) (3)

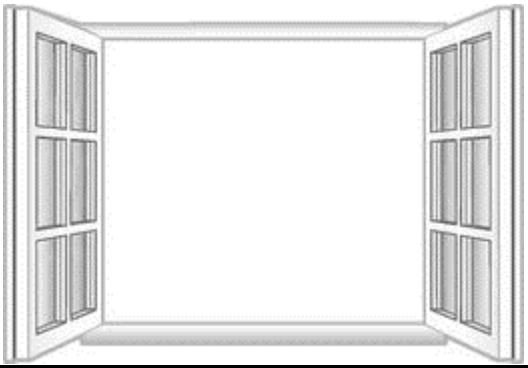
4.1.5 Draw a mind map to show the structures that protect the organ mentioned in QUESTION 4.1.1. (10 × 1) (10)

4.2 Critically analyse the images below and answer the question that follows.



[Source: *https://www.istockphoto.com/search/2/image-film?phrase=washing+line+in+the+rain*]

FIGURE 1



[Source: *https://clipart-library.com/clipart/1578515.htm*]

FIGURE 2

Discuss how the immune system is strengthened in each image. (3 × 2) (6)

4.3 What advice would you give a mother with regard to bottle feeding to prevent the immune system being compromised? (2 × 2) (4)

[30]

QUESTION 5

5.1 Choose ONE term from the list below for each of the following descriptions and write it next to the question number (5.1.1–5.1.10) in the ANSWER BOOK.

penis; floating; mediastinum; clitoris; sternum; carotid arteries; pectoralis major; sacrum; arthritis; coccyx; coronary arteries; inguinal

5.1.1 Also called the breastbone

5.1.2 Lymph nodes in the groin

5.1.3 Ribs that are not directly attached to the sternum

5.1.4 Anterior muscles of the chest

5.1.5 The space in which the heart is situated

5.1.6 Blood vessels that supply O2 to the heart muscle

5.1.7 An external female reproductive organ

5.1.8 An external male mating organ

5.1.9 A condition that causes swelling of the joints

5.1.10 The last part of the vertebral column

(10 × 1) (10)

5.2 Tricuspid valve insufficiency is very common. It is a condition where the tricuspid valve does not close properly. It is also called a leaky valve.

Discuss the possible effects of a leaky tricuspid valve. (5 × 1) (5)

5.3 Discuss how second-line defences will protect someone with septicaemia (bacteria in the blood). (5 × 2) (10)

5.4 Guide a pregnant woman which food she should eat that consists of all the necessary nutrients to boost her immune system as well as that of the baby.

Give the value of each food item you choose. (5 × 1) (5)

[30]

QUESTION 6

6.1 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A–M) next to the question number (6.1.1–6.1.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
6.1.1	A large opening in the occipital bone	A	epiglottis
6.1.2	A strong substance of the skeletal system that is flexible	B	foramen magnum
6.1.3	The muscle in the eyelid that allows the eye to open	C	spleen
6.1.4	Elastic cartilage found in the larynx	D	levator palpebrae superioris
6.1.5	An organ that belongs to the lymphatic system	E	cartilage
6.1.6	The largest and strongest arm bone	F	radius
6.1.7	Wrist bones	G	orbicularis oculi
6.1.8	A muscle in the arm used for intra-muscular injections	H	deltoid
6.1.9	A muscle of respiration	I	diaphragm
6.1.10	The first part of the colon	J	tarsals
		K	caecum
		L	humerus
		M	carpals

(10 × 1) (10)

6.2 Name FIVE muscles of facial expression. (5 × 1) (5)

6.3 List FIVE opportunistic infections. (5 × 1) (5)

6.4 Give SEVEN disadvantages of using mind maps. (7 × 1) (7)

6.5 Why should people with HIV have a strong skeletal system? (3 × 1) (3)

[30]

TOTAL: 180

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