higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

THE HUMAN BODY AND MIND
NQF LEVEL 4

10 November 2022

This marking guideline consists of 8 pages.

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QUESTION 1

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

(8 × 1) (8)

1.2 A – lungs
B – liver
C – kidneys
D – heart
E – brain
F – small and large intestines
G – stomach (7)

1.3 1.3.1 Between the rectum and bladder in the pelvic area

1.3.2 One on each side of the vertebral column on the posterior side of the body

1.3.3 Below the bladder in front of the rectum and it surrounds the ureter in the male reproductive system

1.3.4 Inside the scrotum which hangs outside the body

1.3.5 In the mouth under the tongue

1.3.6 Part of vertebral column below the lumber vertebrae and above the coccyx

1.3.7 On the anterior side of the leg at the knee joint

1.3.8 Below the diaphragm on the left side of the abdomen

1.3.9 Forms the division between the abdominal and thoracic areas of the torso

1.3.10 Attached to the clavicle on the upper, posterior side of the body

(10 × 1) (10)

1.4 A – ilium
B – sacrum
C – coccyx
D – pubic symphysis
E – ischium (5)

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1.5 1.5.1
- Pubic arch in males is less than 90°
- Pubic arch in females is more than 90° (2)

1.5.2
- The male pelvis needs to support the heavier and more physically developed torso of the male.
- The male pelvis does not make provision for pregnancy and childbirth. (2)

1.5.3
- The size and shape of the female pelvis is adapted so that it makes normal, uncomplicated delivery of a baby possible.
- During labour the baby passes through the pelvic opening into the birth canal. (2)

1.5.4
(a) Male
(b) Female
(c) Female
(d) Male

(4 × 1) (4)
[40]

QUESTION 2

2.1
2.1.1 Skeletal
2.1.2 Coronary arteries
2.1.3 Muscular
2.1.4 Immune
2.1.5 Digestive/Gastrointestinal system
2.1.6 Nails
2.1.7 Cilia
2.1.8 Meninges
2.1.9 Pleura
2.1.10 Respiratory

(10 × 1) (10)

2.2
- Cardiovascular system/Circulatory system
- Respiratory system
- Digestive system/Gastrointestinal system
- Skeletal system
- Muscular system
- Integumentary system/Skin (Any 5 × 1) (5)

2.3 2.3.1 Stores urine

2.3.2 Stores bile

2.3.3 Produces bile

2.3.4 Closes the oesophagus when inhaling air or the trachea when swallowing food

2.3.5 Produces digestive juices and enzymes or produces insulin and glucagon

2.3.6 Produce urine

2.3.7 Transport urine from the kidneys to the bladder

2.3.8 Transports oxygen with inhalation to the lungs and carbon dioxide with exhalation from the lungs

2.3.9 Transports swallowed food to the stomach

2.3.10 Produces adrenaline

(10 × 1) (10)

2.4 2.4.1
- There are no teeth in the mandible and maxilla.
- The infant's palate is relatively small.
- The chin is still incompletely formed.
- The brain of an infant grows very fast. (4)

2.4.2 The circumference of the skull reflects the growth of the brain. (2)

2.4.3 Sagittal suture (2)

2.4.4
- Anterior fontanelle
- Posterior fontanelle (2)

2.4.5 Dehydration (1)

2.4.6
- The bone plates of the infant's skull must be able to overlap/compress as the skull moves through the birth canal during labour.
- The infant's brain grows fast and therefore the skull bones must be able to expand as the brain grows. (2 × 2) (4)

[40]

QUESTION 3

3.1 1 – pituitary gland
2 – thyroid gland
3 – parathyroid glands
4 – thymus
5 – adrenal gland
6 – pancreas
7 – ovary
8 – testes
9 – hypothalamus
10 – pineal gland

(10 × 1) (10)

3.2
3.2.1 C
3.2.2 F
3.2.3 H
3.2.4 A
3.2.5 B
3.2.6 J
3.2.7 G
3.2.8 L
3.2.9 I
3.2.10 D

(10 × 1) (10)

3.3
- Simpiwe – respiratory system
- Alungile – digestive system/Gastrointestinal system
- Boniswa – urinary system/Renal system
- Peter – integumentary system/Skin (4)

3.4
- External respiration is the exchange of gases in the lungs between the pulmonary capillaries✓ (alveoli) and blood. ✓
- Internal respiration is the exchange of gases in the body tissues between the pulmonary capillaries✓ and body cells.✓ (2 × 2) (4)

3.5
3.5.1 Less than 7,35
3.5.2 More than 7,45

(2 × 1) (2)

3.6 3.6.1 Haemoglobin (2)

3.6.2 (a) Oxyhaemoglobin
(b) Carbaminohaemoglobin

(2 × 1) (2)

3.7 Diffusion (1)

3.8
- The respiratory system ensures that blood is oxygenated and ensures the exchange of gases in the lungs.
- The cardiovascular system is responsible for the beating of the heart and the transport of oxygenated blood to all body tissues via the blood vessels.
- It should also ensure that deoxygenated blood is returned from the body to the heart
- and is pumped to the lungs from where it is exhaled.
- The respiratory system and the cardiovascular system have to work closely together to ensure oxygen reaches all parts of the body. (5)

[40]

QUESTION 4

4.1
4.1.1 A
4.1.2 D
4.1.3 B
4.1.4 C
4.1.5 D
4.1.6 A
4.1.7 B
4.1.8 C
4.1.9 A
4.1.10 B

(10 × 1) (10)

4.2 4.2.1
- Digestive system/Gastrointestinal system
- Endocrine system (2)

4.2.2
- The pancreas secretes the hormones insulin
- and glucagon.
- Insulin lowers blood sugar levels.
- Glucagon raises blood sugar levels. (4 × 2) (8)

4.3
- The skin on the finger contains sensory receptors that are sensitive to heat so the skin is the receptor of the stimulus.
- The stimulus is identified and changed into a nerve impulse that is relayed to the spinal cord by a sensory nerve.
- The sensory nerve connects with a connector neuron in the spinal cord where the impulse is interpreted.
- The connector neuron connects with a motor neuron and carries the message to the muscles in the hand (effector organ) to contract
- so that the finger is pulled away from the heat. (5)

4.4
- Awareness
- Coordination
- Muscle strength
- Normal sensation (4)

4.5
- If sensory nerve endings are not able to pick up sensations from the environment a person is at risk of not being aware of dangerous situations
- and therefore may be injured.
- The person will not be able to feel pain, heat, cold, pressure, etc. (3)

4.6
- Heart beats faster
- Respiratory system – faster breathing
- Eyes – pupils dilate
- Salivary glands – decrease secretion of saliva
- Urinary bladder – relax muscle of bladder and constrict sphincter
- Adrenal glands – secrete adrenalin (6)

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4.7
- Creates a sense of calmness
- Works against action
- Heart rate slows down, blood pressure lowers, food is being digested, breathing slows down, pupils constrict, muscle of urinary bladder constrict

(Any 2 × 1) (2)

[40]

QUESTION 5

5.1
5.1.1 Telegraphic
5.1.2 Culture
5.1.3 Non-verbal
5.1.4 Technology
5.1.5 Perception
5.1.6 Closure
5.1.7 Emotions
5.1.8 Operant
5.1.9 Mental
5.1.10 Health

(10 × 1) (10)

5.2 Trust versus mistrust✓
- Trust

Infants depend on their parents. The parents feed their children and show love and caring for them. Infants learn to trust those who care for them.✓
- Mistrust

Infants who are not properly cared for, will find it difficult to trust others.✓

Autonomy versus shame and doubt✓
- Autonomy

Infants learn to control their behaviour. They explore their environment, develop language and learn to be independent. They develop autonomy and willpower.✓
- Shame and doubt

Overcontrolling parents do not allow infants to explore their surroundings. Their independence will be restricted and they can develop feelings of self-doubt and shame when they interact with others.✓ (2 × 3) (6)

5.3 5.3.1 Children want to be near people to whom they are attached.

5.3.2 Children are afraid of people they do not know. They feel safe in the presence of their attachment figures.

5.3.3 Children see their parents as a base of security and in the presence of their parents' children feel free to explore their environment.

5.3.4 Children experience separation anxiety when they are separated from their parents.

(4 × 1) (4)

5.4 5.4.1
- John: Stage 1 - Rules are obeyed to avoid punishment.
- Elsa: Stage 3 - Rules are obeyed for approval of other people by wanting to be a 'good girl'.
- Jack's sister: Stage 2 - Rules are obeyed for personal gain and satisfying one's own needs.
- Peter: Stage 4 - Rules are obeyed to benefit society and it is against the law to steal. (4 × 2) (8)

5.4.2 It is the judgement of what is right or wrong. (2)

5.5
- Bonita – Sensory motor
- Precious – Preoperational
- Pulane – Concrete operations
- Sipho – Formal operations (4)

5.6
- It is easy for people to consult a traditional healer who comes from the same cultural group as they do.
- Modern medicine is not affordable for poor and unemployed people and it is not easy to get to a clinic, especially in rural areas.
- People trust traditional healers and believe they are well-trained.
- Traditional beliefs and practices concerning illness and health are still widely followed. (Any 3 × 1) (3)

5.7
- Negative emotions, feelings and thoughts such as stress, sadness, anxiety and anger✓
- have a negative effect on the mind because the mind is negatively influenced by ongoing negative emotions and thoughts.✓
- This can result in physical problems such as headaches, migraine, heart palpitations and fatigue.✓ (3)

[40]

TOTAL: 200

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