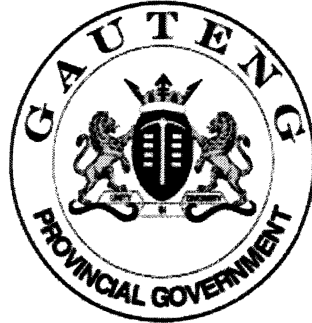


**SENIOR CERTIFICATE
EXAMINATION
SENIORSERTIFIKAAT-EKSAMEN**



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GAUTENGSE DEPARTEMENT VAN ONDERWYS
SENIORSERTIFIKAAT-EKSAMEN

FISIOLOGIE SG

TYD: 3 uur

PUNTE: 300

INSTRUKSIES:

- Die vraestel bestaan uit TWEE afdelings: TOTAAL AFDELING A: 100
TOTAAL AFDELING B: 200
 - Alle vrae is VERPLIGTEND.
 - Beantwoord Vraag 1 (meervoudige keusevrae) op die **antwoordblad** aan die **binnekant van die omslag** van jou **antwoordboek**.
 - Nommer jou antwoorde korrek.
-
-

AFDELING A**VRAAG 1
MEERVOUDIGE KEUSEVRAE**

Vier moontlikhede word as antwoord op elk van die volgende vrae verskaf. Dui die korrekte antwoord met 'n (X) oor die ooreenstemmende letter op die **antwoordblad** aan die **binnekant van die omslag** van jou **antwoordboek** aan.

VOORBEELD: Speeksel word afgeskei in die _____.

- A. mond
- B. esofagus
- C. maag
- D. duodenum

ANTWOORD:

| | | | |
|-------------------------------------|---|---|---|
| <input checked="" type="checkbox"/> | B | C | D |
|-------------------------------------|---|---|---|

- 1.1 Selle met 'n endokriene funksie in die testis:
- A. Selle van Cowper
 - B. Selle van Leydig
 - C. Selle van Schwann
 - D. Selle van Sertoli
- 1.2 Uriensuur is afkomstig van die _____.
- A. deaminasie van aminosure
 - B. afgebreekte nukleiensure (DNA en RNA)
 - C. rooibloedselle wat afgebreek word in die milt
 - D. afbreek van fosforkreatinien in die spiere
- 1.3 Die eindproduk van spermatogenese van een spermatogonium is _____.
- A. twee spermatozoë
 - B. vier spermatozoë
 - C. vier spermatiede
 - D. twee sekondêre spermatozoë
- 1.4 Die metode wat verhoed dat 'n embrio in 'n fetus sal ontwikkel:
- A. Manlike kondoom
 - B. Oggend-agterna pil
 - C. Vroulike kondoom
 - D. Voorbehoedpil
- 1.5 In die onderstaande diagram word selle van die proksimale kronkelbuis voorgestel. As **B** die buitewand van die buisie is, sal die volgende by **A** aangetref word:
- A. Bloedplasma
 - B. Peritubulêre vate
 - C. Ammonium
 - D. Glomerulêre filtraat

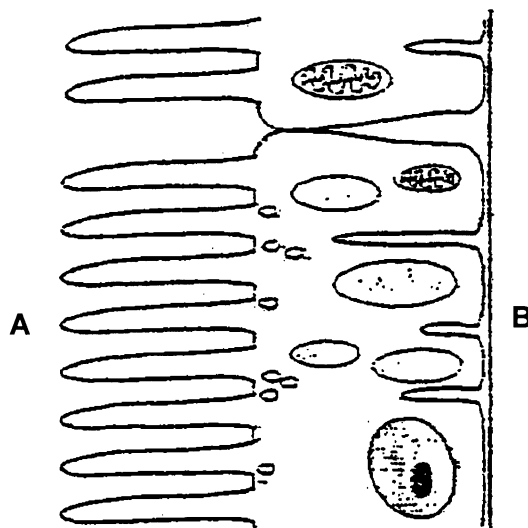


Fig 1.5: Proksimale kronkelbuis

- 1.1 Cells with an endocrine function in the testis are:
- A. Cowper's cells
 - B. Cells of Leydig
 - C. Cells of Schwann
 - D. Cells of Sertoli
- 1.2 Uric acid is derived from the _____.
- A. deamination of amino acids
 - B. breakdown of nucleic acids (DNA and RNA)
 - C. breakdown of erythrocytes in the spleen
 - D. breakdown of phosphocreatine in the muscles
- 1.3 The end result of spermatogenesis of one spermatogonia is _____.
- A. two spermatozoa
 - B. four spermatozoa
 - C. four spermatids
 - D. two secondary spermatocytes
- 1.4 The method preventing the embryo from developing into a foetus:
- A. Male condom
 - B. Morning-after pill
 - C. Female condom
 - D. Birth control pill
- 1.5 In the diagram below, cells of the proximal convoluted tubules are shown. If **B** is the outer surface of the tube, the following will be found at **A**:
- A. Blood plasma
 - B. Peritubular capillaries
 - C. Ammonium
 - D. Glomerular filtrate

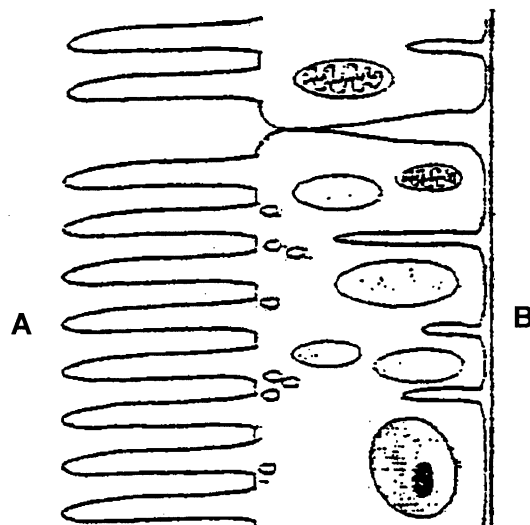


Fig 1.5: Proximal convoluted tubule

- 1.6 Watter een van die onderstaande strukture van die manlike voortplantingstelsel dien as 'n temperatuur-reguleerder tydens spermatogenese?
- A. Penis
 - B. Epididimis
 - C. Semen vesikel
 - D. Skrotum
- 1.7 Watter vitamien word deur steroïede in die vel geproduseer?
- A. Vitamien D
 - B. Vitamien C
 - C. Vitamien B
 - D. Vitamien A
- 1.8 Watter een van die volgende strukture bestaan uit plaveiselepiteelselle?
- A. Wand van die proksimale kronkelbuis
 - B. Wand van die distale kronkelbuis
 - C. Binnewand van die kapsel van Bowman
 - D. Buitewand van die kapsel van Bowman
- 1.9 Podosiete met groter en kleiner uitsteeksels kom voor in die _____.
- A. Boog van Henle
 - B. distale kronkelbuis
 - C. Kapsel van Bowman
 - D. proksimale kronkelbuis

Vrae 1.10 tot 1.12 het betrekking op die onderstaande diagram.

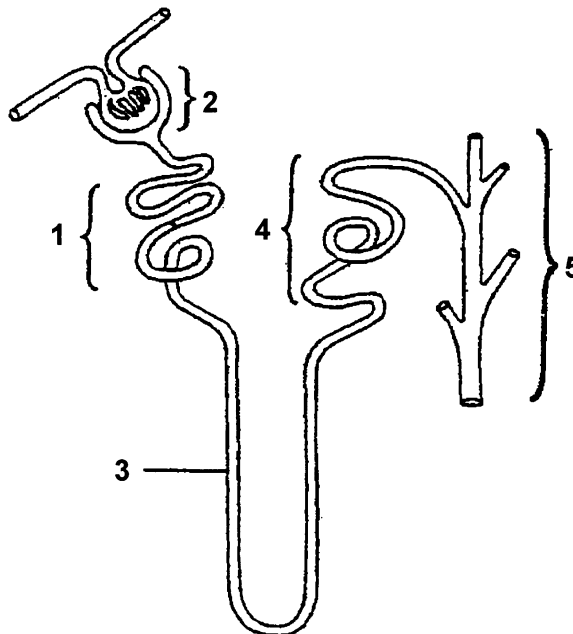


Fig 1.10: Struktuur in die menslike nier

- 1.6 Which one of the following structures of the male reproductive system acts as a temperature regulator during spermatogenesis?
- A. Penis
 - B. Epididymis
 - C. Seminal vesicle
 - D. Scrotum
- 1.7 Which vitamin is produced by steroids in the skin?
- A. Vitamin D
 - B. Vitamin C
 - C. Vitamin B
 - D. Vitamin A
- 1.8 Which one of the following structures consists of squamose epithelial cells?
- A. Surface of the proximal convoluted tubule
 - B. Surface of the distal convoluted tubule
 - C. Inner wall of the capsule of Bowman
 - D. Outer wall of the capsule of Bowman
- 1.9 Podocytes with major and minor processes are found in the _____.
- A. Loop of Henle
 - B. distal convoluted tubule
 - C. Bowman's capsule
 - D. proximal convoluted tubule

Questions 1.10 to 1.12 refer to the diagram below.

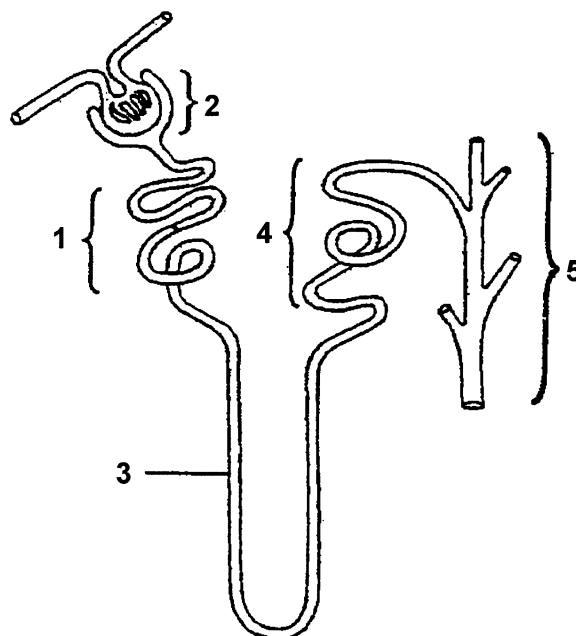


Fig 1.10: Structure in the human kidney

- 1.10 Hierdie diagram verteenwoordig 'n _____.
- neuron
 - liggaampie van Malpighi
 - nefron
 - kapsel van Bowman
- 1.11 Watter genummerde dele het hoofsaaklik met die herabsorpsie van water te doen?
- 1 en 2
 - 4 en 5
 - 2 en 3
 - 3 en 4
- 1.12 Urine beweeg vanaf deel 5 na die _____ van die nier.
- ureter
 - korteks
 - kelk / calyx
 - bekken / pelvis

Vrae 1.13 tot 1.15 is gebaseer op die onderstaande diagram van 'n syaansig van die menslike brein.

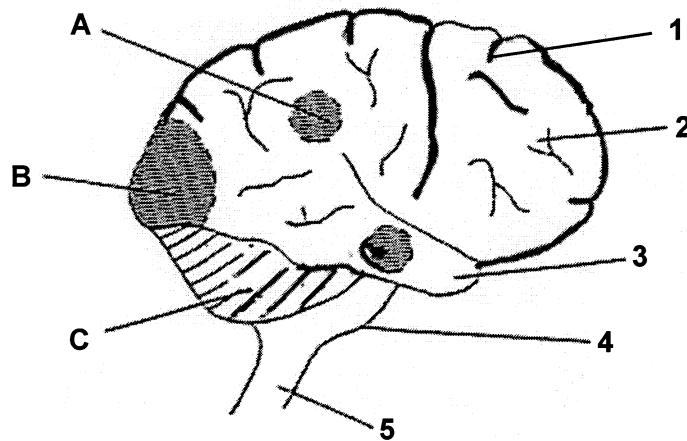


Fig 1.13: Temporale aansig van die brein

- 1.13 Nommer 1 is _____.
- witstof
 - 'n girus
 - 'n sulkus
 - die hipofise

- 1.10 This diagram represents a _____.
- neuron
 - Malpighian body
 - nephron
 - Bowman's capsule
- 1.11 Which numbered parts are mainly concerned with the reabsorption of water?
- 1 and 2
 - 4 and 5
 - 2 and 3
 - 3 and 4
- 1.12 Urine flows from number 5 to the _____ of the kidney.
- ureter
 - cortex
 - renal calyx
 - renal pelvis

Questions 1.13 to 1.15 refer to the diagram below showing a side view of the human brain.

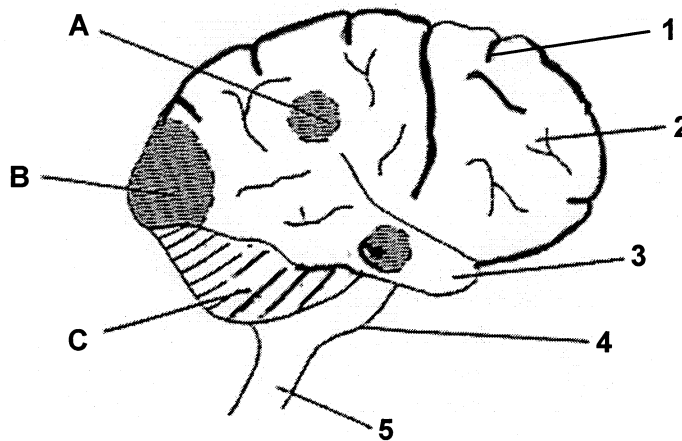


Fig 1.13: Temporal view of the brain

- 1.13 Number 1 is _____.
- white matter
 - a gyrus
 - a sulcus
 - the hypophysis

- 1.14 Watter struktuur (nommer) dien as 'n brug wat die rugmurg met die brein verbind?
- A. 3
 - B. 4
 - C. 5
 - D. 2
- 1.15 Die gedeelte wat balans en koördinasie van willekeurige beweging beheer:
- A. B
 - B. C
 - C. A
 - D. 5
- 1.16 Die massa witstof wat die linker en regter hemisfere van die serebrum verbind, is die _____.
- A. corpus callosum
 - B. abor vitae
 - C. vermis
 - D. pons van Varolli
- 1.17 Die linkerkant van 'n jong man se gesig is verlam nadat hy 'n beroerte-aanval gehad het. Die rede hiervoor is:
- A. Skade aan die linkerlob van die serebellum
 - B. Die regter motoriese area van sy serebrale korteks het 'n tekort aan suurstof en voedingstowwe gehad
 - C. Die linker motoriese area van sy serebrale korteks het 'n tekort aan suurstof en voedingstowwe gehad
 - D. Skade aan die regterlob van die serebellum
- 1.18 Klein deeltjies in die sitoplasma van die selliggaam van 'n neuron:
- A. Aksonheuwel
 - B. Schwannselle
 - C. Nissl-korrels
 - D. Neuroglia

- 1.14 Which structure (number) serves as a bridge connecting the spinal cord with the brain?
- A. 3
 - B. 4
 - C. 5
 - D. 2
- 1.15 The part that regulates balance and coordination of voluntary movement:
- A. B
 - B. C
 - C. A
 - D. 5
- 1.16 The mass of white matter connecting the left and right hemispheres of the cerebrum is the _____.
- A. corpus callosum
 - B. abor vitae
 - C. vermis
 - D. Varolli's pons
- 1.17 The left side of a young man's face was paralysed by a stroke. The reason for this is:
- A. Damage to the left lobe of the cerebellum
 - B. The right motor area of his cerebral cortex was deprived of oxygen and nutrients
 - C. The left motor area of his cerebral cortex was deprived of oxygen and nutrients
 - D. Damage to the right lobe of the cerebellum
- 1.18 Small particles in the cytoplasm of the cell body of a neuron:
- A. Axon hillock
 - B. Schwann cells
 - C. Nissl bodies
 - D. Neuroglia

1.19 Die onderstaande diagram toon die smaakstreke op die tong.

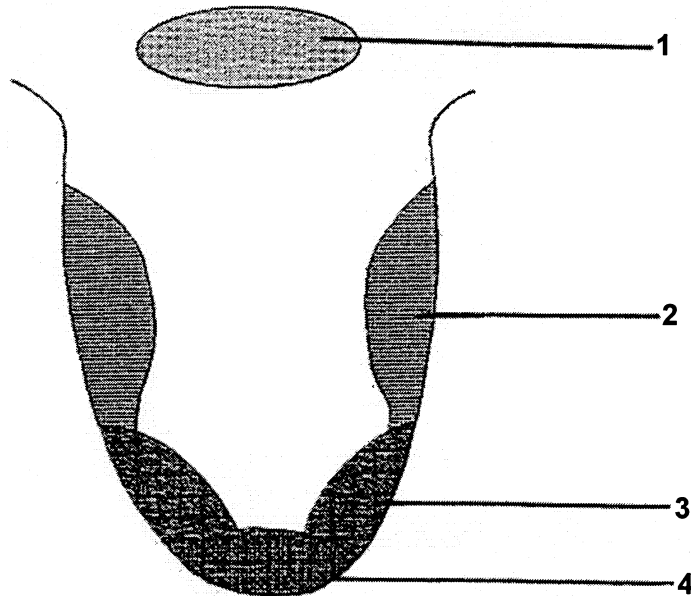


Fig 1.19: Smaakstreke op die tong

Bitter en suur word onderskeidelik deur die volgende nommers aangedui.

- A. 1 en 3
- B. 2 en 3
- C. 3 en 4
- D. 1 en 2

Vrae 1.20 en 1.21 handel oor die onderstaande diagram van die oog van 'n bysiende persoon.

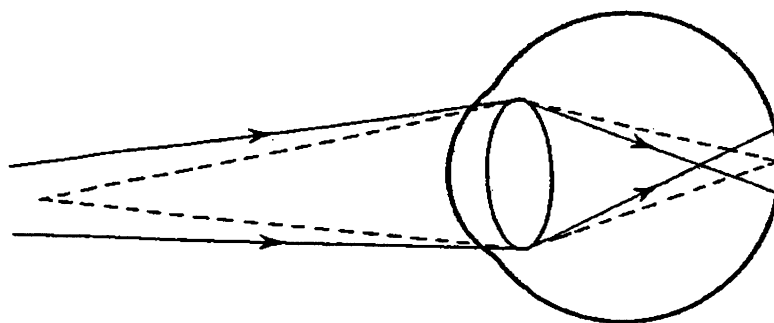


Fig 1.20: Diagram van 'n ooggebrek

1.20 Die wetenskaplike naam vir hierdie oogdefek is _____.

- A. presbiopie
- B. miopie
- C. hipermetropie
- D. astigmatisme

1.19 The diagram below shows the locations of taste sensations on the tongue.

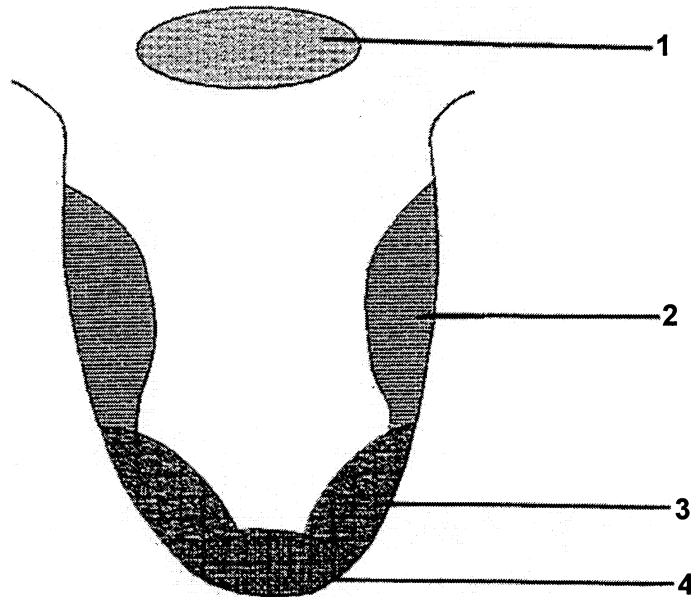


Fig 1.19: Location of taste sensations on the tongue

Bitter and sour are respectively shown by the following numbers

- A. 1 and 3
- B. 2 and 3
- C. 3 and 4
- D. 1 and 2

Questions 1.20 and 1.21 refer to the following diagram of the eye of a short-sighted person.

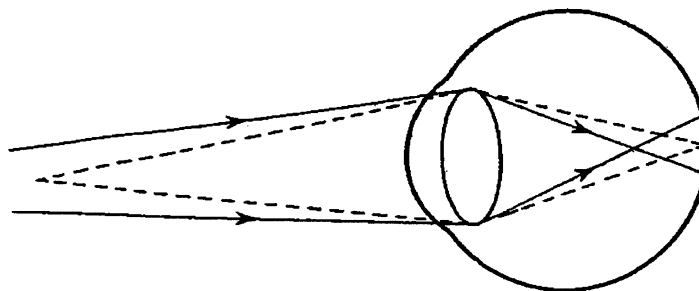


Fig 1.20: Diagram of an eye defect

1.20 The scientific name for this eye defect is _____.

- A. presbyopia
- B. myopia
- C. hypermetropia
- D. astigmatism

- 1.21 Hierdie pasiënt kan gehelp word deur 'n bril te dra met _____.
- A. konvekse lense
 - B. konkawe lense
 - C. bifokale lense
 - D. lense wat spesiaal geslyp is om die onreëlmatigheid van die kornea te elimineer

- 1.22 Watter van die volgende reseptore is nodig om die sensasie in die meegaande diagram hieronder te registreer?

- (i) Orgaan van Corti
- (ii) Proprioseptore
- (iii) Makulas

- A. slegs (i)
- B. slegs (ii)
- C. (ii) en (iii)
- D. (i) en (iii)



- 1.23 Otoliete kom voor in die _____.
- A. orgaan van Corti wat uit bipolarêre neurone bestaan
 - B. makula
 - C. olfaktoriese selle wat egte (ware) monopolêre neurone is
 - D. olfaktoriese selle wat egte (ware) bipolarêre neurone is

- 1.24 Sere op die geslagsdele en blindheid is tekens van die volgende siekte:

- A. Sifilis
- B. Geslagsherpes
- C. Gonoree
- D. EARS

- 1.25 Die funksie van die buis van Eustachius is om _____.

- A. die lugdruk aan beide kante van die trommelvlies dieselfde te hou
- B. die omvang van die vibrasies van klankgolwe te versterk
- C. weerkaatsing van die klankgolwe te verhoed
- D. die posisie van die kop te registreer

25x2=[50]

- 1.21 The patient can be helped by wearing glasses with _____.
- A. convex lenses
 - B. concave lenses
 - C. bifocal lenses
 - D. lenses specially ground to eliminate the irregularities of the cornea

- 1.22 Which of the following receptors is/are necessary to register the sensation in the diagram below?

- (i) Organ of Corti
- (ii) Proprioceptors
- (iii) Maculae



- A. (i) only
- B. (ii) only
- C. (ii) and (iii)
- D. (i) and (iii)

- 1.23 Otoliths are found in the _____.
- A. organ of Corti which consists of bipolar neurons
 - B. macula
 - C. olfactory cells that are true monopolar neurons
 - D. olfactory cells that are true bipolar neurons

- 1.24 Sores on the sex organs and blindness are signs of the following disease:
- A. Syphilis
 - B. Genital herpes
 - C. Gonorrhoea
 - D. SARS

- 1.25 The function of the Eustachian tube is to _____.
- A. equalise the pressure on both sides of the tympanic membrane.
 - B. increase the strength of the vibrations of the sound waves.
 - C. prevent sound reflection.
 - D. register the position of the head.

25x2=[50]

VRAAG 2

Verskaf die korrekte **fisiologiese term** vir elk van die volgende omskrywings en skryf die woord teenoor die ooreenstemmende nommer in jou **antwoordboek** neer.

- 2.1 Die vermoë van die lens van die oog om op naby en ver voorwerpe te fokus
- 2.2 Die deel van die binne-oor wat vir die handhawing van balans verantwoordelik is
- 2.3 Die gespesialiseerde skubagtige epiteelselle van die binnewand van die kapsel van Bowman wat 'n noue assosiasie met die glomerulus vorm
- 2.4 Die reseptore wat gevoelig is vir die verandering in die spanning van spiere en tendons
- 2.5 Die handhawing van 'n konstante interne omgewing van enige liggaamsel
- 2.6 Die gebreksiekte by kinders wat ontstaan as gevolg van die hipo-aktiwiteit van tiroksien
- 2.7 Die binneste laag wat die uterus uitvoer.
- 2.8 Vernouing van die bloedvate van die vel tydens simpatiese stimulasie
- 2.9 Die area in die sentrale senustelsel waar lewensnoodsaaklike refleksaksies beheer word
- 2.10 Die ensiem wat deur die niere afgeskei word en wat 'n rol speel in die beheer (regulering) van bloeddruk

10x2=[20]

VRAAG 3

Skryf die letter van die **term** in **Kolom B** wat die beste pas by die **omskrywing** in **Kolom A** teenoor die nommer in jou antwoordboek neer.

| KOLOM A | | KOLOM B | |
|---------|---|---------|------------------------|
| 3.1 | Beskerm die vel teen meganiese beserings en die indringing van kieme | A. | Malaria en tuberkulose |
| 3.2 | Veroorsaak verhoogde sweetproduksie | B. | Parathormoon |
| 3.3 | Speel 'n rol in die osmoregulering van die distale kronkelbuisies in die nier | C. | Nefron |
| 3.4 | Funksionele eenheid van die nier | D. | Neuron |
| 3.5 | Strukturele eenheid van die senustelsel | E. | Refleksboog |
| 3.6 | Smaakarea van die serebrum | F. | Keratien |
| 3.7 | Gedeelte van die brein wat liggaams-temperatuur reguleer | G. | Temporale lob |
| 3.8 | Plek waar bevrugting plaasvind | H. | ADH |
| 3.9 | Veroorsaak dat meer natrium-ione geherabsorbeer word | I. | Hipotalamus |
| 3.10 | Verhoog die vlak van kalsium in die bloed | J. | Fallopibus |
| | | K. | Melanien |
| | | L. | Epidermis |
| | | M. | Pariëtale lob |
| | | N. | Vagina |
| | | O. | Aldosteron |

10x2=[20]

QUESTION 2

Give the correct **physiological term** for each of the following descriptions and write your answer next to the corresponding number in your **answer book**.

- 2.1 The ability of the lens in the eye to focus on nearby and far objects
- 2.2 The part of the inner ear which is responsible for maintaining the equilibrium of the body
- 2.3 The specialised squamous epithelial cells on the inner wall of the Bowman’s capsule that forms a close association with the glomerulus
- 2.4 Receptors sensitive to changes in the tension of muscles and tendons
- 2.5 Maintaining a constant internal environment of cells in the body
- 2.6 The abnormality in children as a result of the hypo-activity of thyroxin
- 2.7 The inner layer lining the uterus
- 2.8 Contraction of the blood vessels in the skin during sympathetic stimulation
- 2.9 The area of the central nervous system where vital reflex actions are regulated
- 2.10 The enzyme secreted by the kidneys which plays a role in regulating blood pressure

2x10=(20)

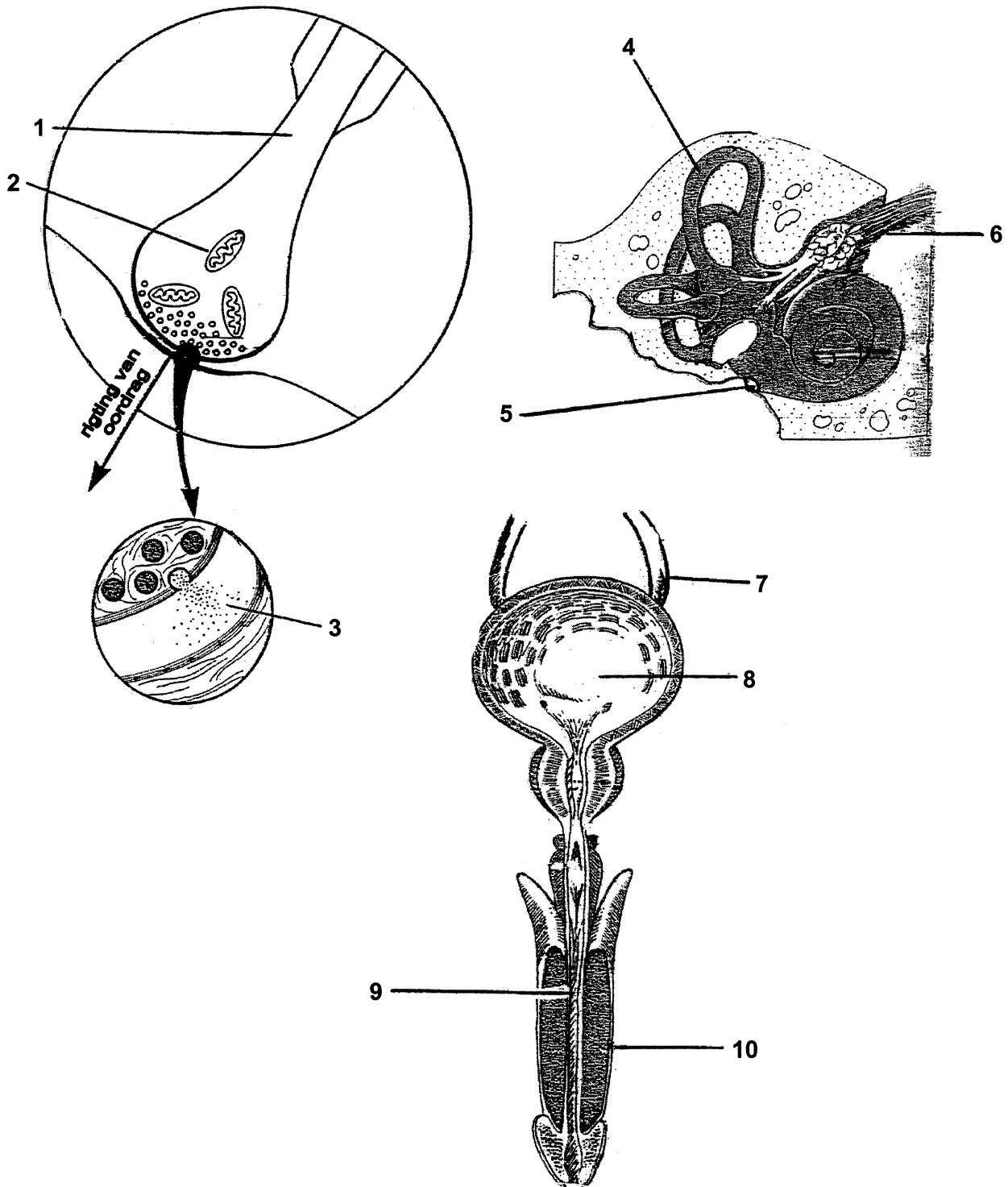
QUESTION 3

Write down the letter of the **term** in **Column B** which best matches the **description** in **Column A** next to the number in your answer book.

| COLUMN A | | COLUMN B | |
|----------|---|----------|--------------------------|
| 3.1 | Protect the skin against mechanical injury and entry of germs | A. | Malaria and tuberculosis |
| 3.2 | Causes an increased sweat production | B. | Parathormone |
| 3.3 | Plays a role in the osmoregulation in the distal convoluted tubules of the kidney | C. | Nephron |
| 3.4 | Functional unit of the kidney | D. | Neuron |
| 3.5 | Structural unit of the nervous system | E. | Reflex arc |
| 3.6 | Taste area of the cerebrum | F. | Keratin |
| 3.7 | Part of the brain that regulates body temperature | G. | Temporal lobe |
| 3.8 | Place where fertilization occurs | H. | ADH |
| 3.9 | Is responsible for more sodium ions being reabsorbed | I. | Hypothalamus |
| 3.10 | Increase the level of calcium in the blood | J. | Fallopian tube |
| | | K. | Melanin |
| | | L. | Epidermis |
| | | M. | Parietal lobe |
| | | N. | Vagina |
| | | O. | Aldosterone |

VRAAG 4

Die meegaande diagramme illustreer sekere menslike organe of dele daarvan. Skryf die naam van die struktuur teenoor die nommer in jou antwoordboek.



(10)

Fig 4: Strukture in die menslike liggaam

TOTAAL VIR AFDELING A: [100]

QUESTION 4

The following diagrams represent certain human organs or parts of organs. Write the name of the structure next to the correct number in your answer book.

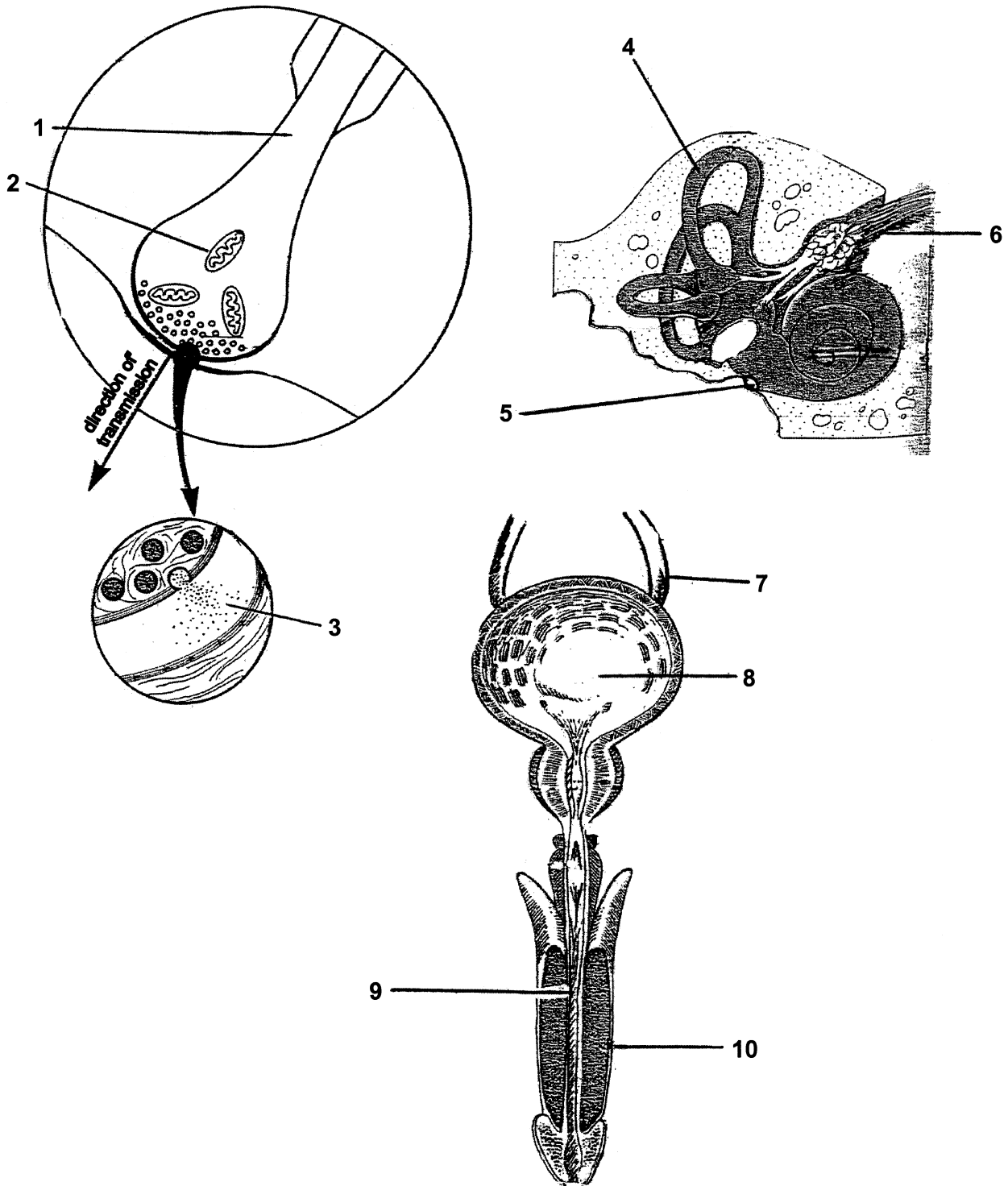


Fig 4: Structures in the human body

(10)

TOTAL FOR SECTION A:

[100]

AFDELING B

VRAAG 5

5.1 Bestudeer die diagram van die vel en beantwoord die vrae wat volg.

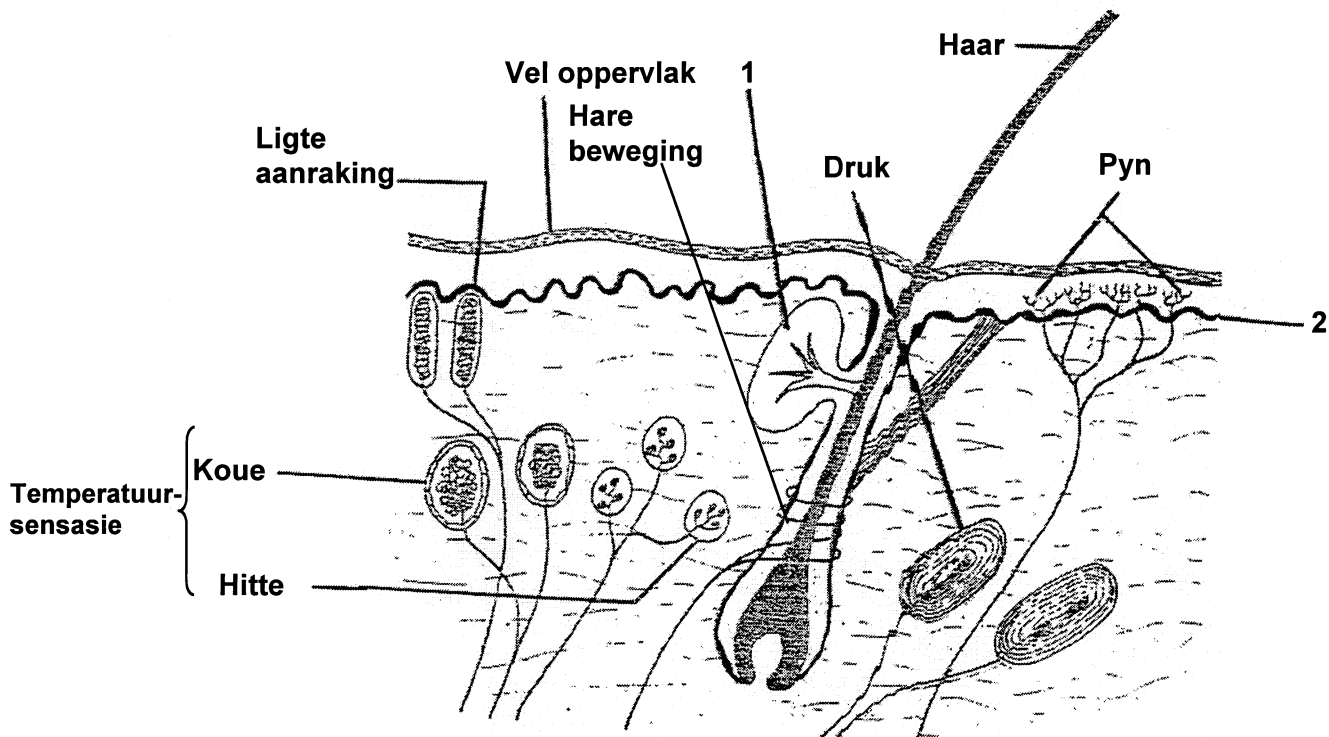


Fig 5.1: Diagram van die menslike vel

Die vel is die belangrikste sintuigorgaan in die menslike liggaam.

- 5.1.1 In die diagram word daar sekere stimuli aangedui, bv. hitte. Skryf die naam van elke stimulus in die diagram neer asook die naam van die reseptorgaan wat elke stimulus sal waarneem. (10)
- 5.1.2 Benoem die eksokriene klier no. 1 en gee die funksie van die sekreet wat dit afskei. (3)
- 5.1.3 Identifiseer die laag wat deur no. 2 op die diagram aangedui word en bespreek die funksies van die laag. (5)
- 5.1.4 Bespreek die rol wat die vel speel in termoregulering op 'n koue wintersoggend. (10)

SECTION B**QUESTION 5**

5.1 Study the diagram of the skin and answer the questions that follow.

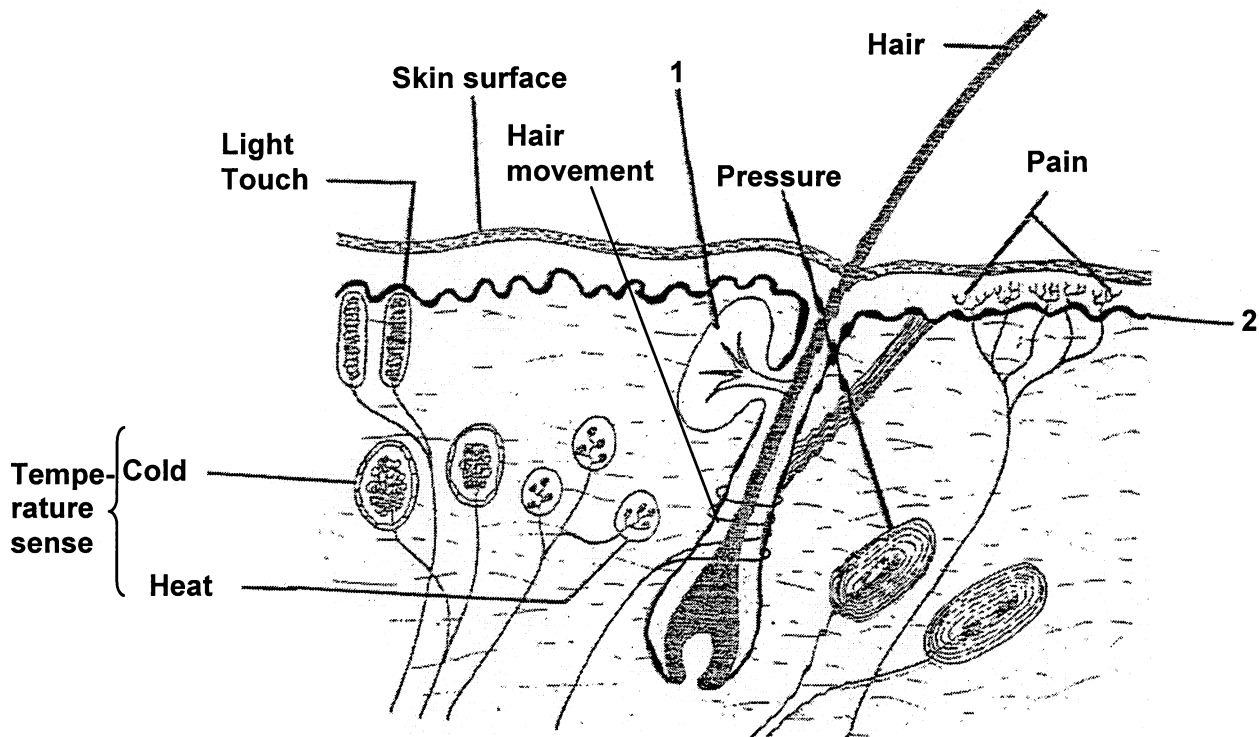


Fig 5.1: Diagram of the human skin

The skin is the most important sense organ in the human body.

- 5.1.1 There are a few stimuli e.g. heat, indicated in the diagram. Give the name of each stimulus mentioned in this diagram and write down the name of the receptor sensitive to each stimulus. (10)
- 5.1.2 Name the exocrine gland numbered 1 and write down the function of the secretion. (3)
- 5.1.3 Identify the layer represented by number 2 in the diagram and discuss the functions of the layer. (5)
- 5.1.4 Discuss the role that the skin plays in thermoregulation on a cold winter's day. (10)

- 5.2 5.2.1 (a) Definieer puberteit. (2)
 (b) Noem al die hormone wat puberteit by seuns en dogters onderskeidelik inisieer. (3)
- 5.2.2 Bespreek sekondêre geslagskenmerke by seuns. (7)
- 5.2.3 Noem en bespreek VYF faktore in weefselvloeistof wat konstant gehou moet word om normale selfunksionering te verseker. (10)
[50]

VRAAG 6

- 6.1 Bestudeer die voorstelling van 'n tipiese neuron en beantwoord die vrae wat volg.

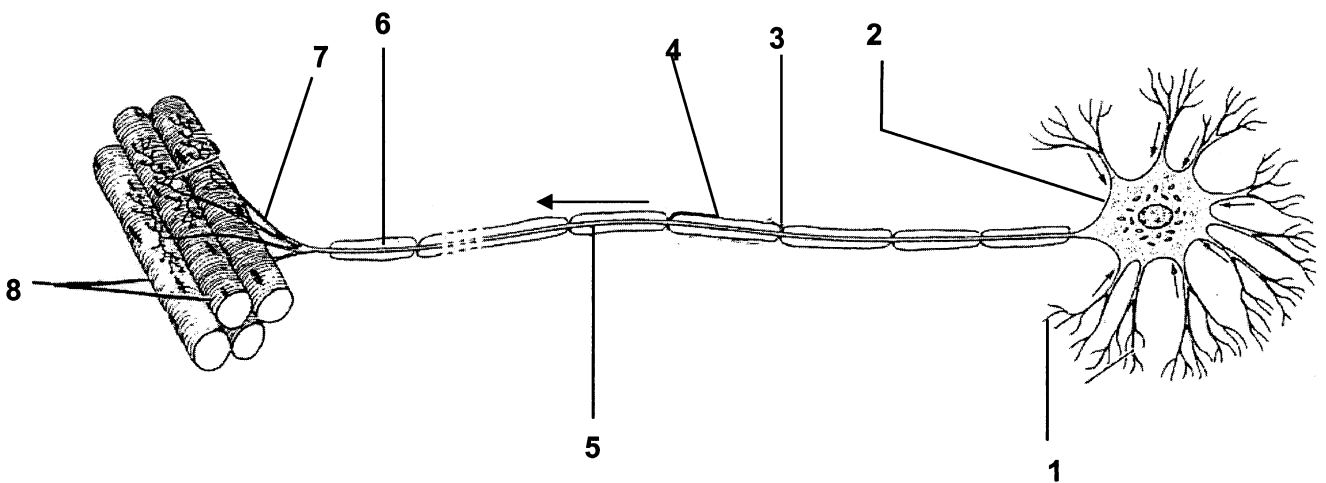


Fig 6.1: Voorstelling van 'n tipiese neuron

- 6.1.1 Watter tipe neuron word hierbo geïllustreer? (2)
- 6.1.2 Identifiseer dele 1 tot 7. (7)
- 6.1.3 Watter tipe organe tree as effektore op by nommer 8? (2)

- 5.2 5.2.1 (a) Define puberty. (2)
 (b) Name the hormones that initiate puberty in males and females respectively. (3)
- 5.2.2 Discuss secondary sexual characteristics in boys. (7)
- 5.2.3 Name and discuss FIVE factors that must be kept constant in tissue fluid to ensure normal cell functioning. (10)
- [50]

QUESTION 6

6.1 Study the sketch of a typical neuron and answer the questions that follow.

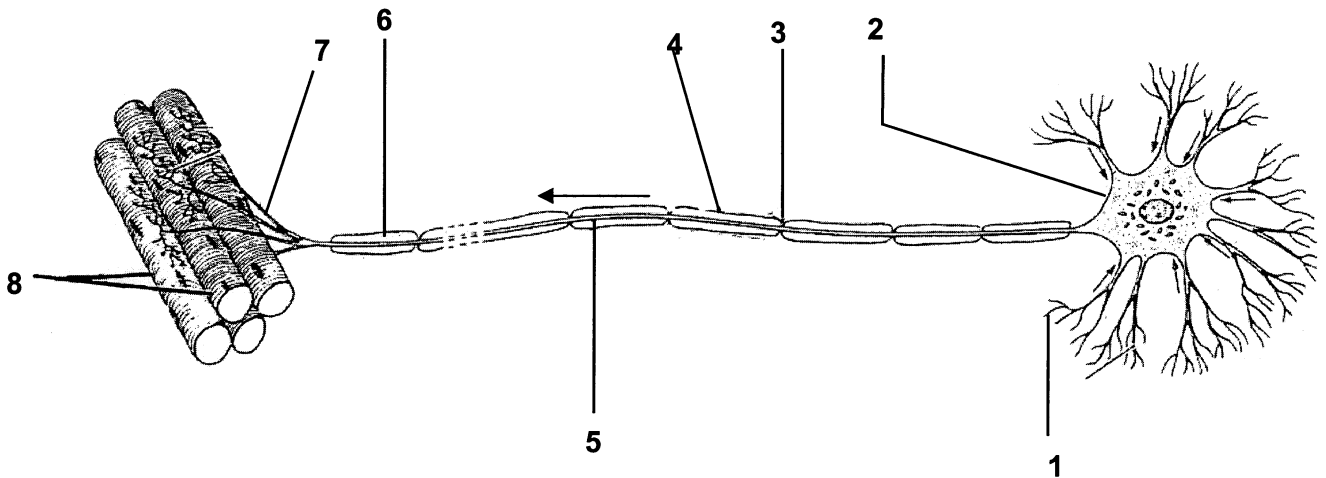


Fig 6.1: Presentation of a typical neuron

- 6.1.1 What type of neuron is illustrated above? (2)
- 6.1.2 Identify numbers 1 to 7. (7)
- 6.1.3 What types of organs act as effectors at number 8? (2)

- 6.2 Bestudeer die onderstaande diagram versigtig wat 'n gedeelte van die sentrale senuweestelsel voorstel en beantwoord die vrae wat volg.

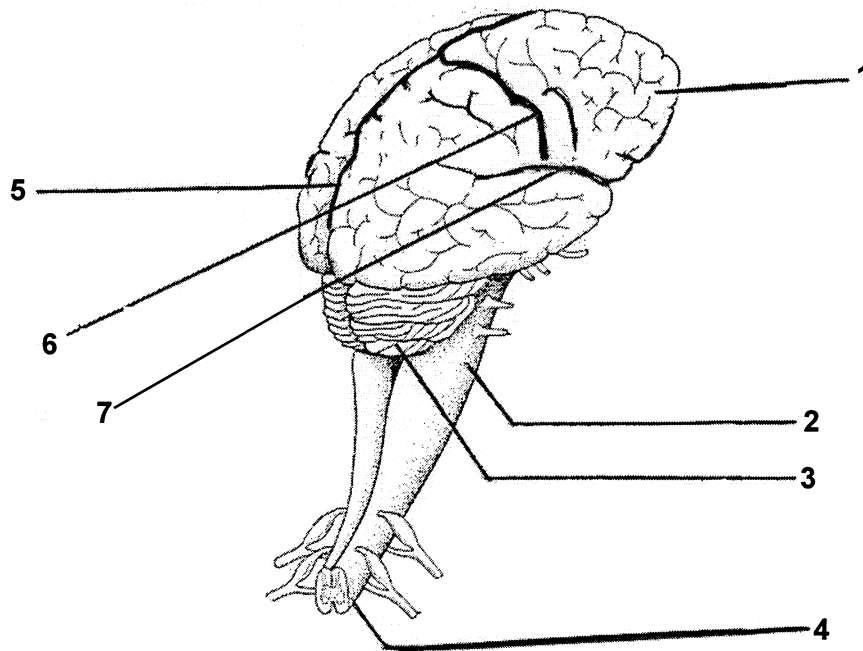


Fig 6.2: Die sentrale senuweestelsel

- 6.2.1 Benoem die strukture wat **1** tot **4** genommer is. (4)
- 6.2.2 Gee die name van die sulkusse (diep groewe) wat onderskeidelik **5**, **6** en **7** genommer is. (3)
- 6.2.3 Die struktuur wat **1** genommer is, kan in vier lobbe verdeel word. Noem die **VIER** lobbe en gee 'n funksie van elke lob. (8)
- 6.2.4 Bespreek hoe struktuur **4** beskerm word. (5)
- 6.2.5 Waardeur word die grysstof en die witstof in die brein onderskeidelik gevorm? (4)
- 6.2.6 Noem **TWEE** funksies van die hipotalamus. (4)
- 6.2.7 (a) Definieer 'n **refleksaksie**. (3)
 (b) Bespreek die verskil tussen 'n gekondisioneerde en 'n ongekondisioneerde refleks. (4)
 (c) Noem **TWEE** voorbeelde van elke soort refleks. (4)

[50]

- 6.2 Carefully study the diagram below, which is of a part of the central nervous system, then answer the questions that follow.

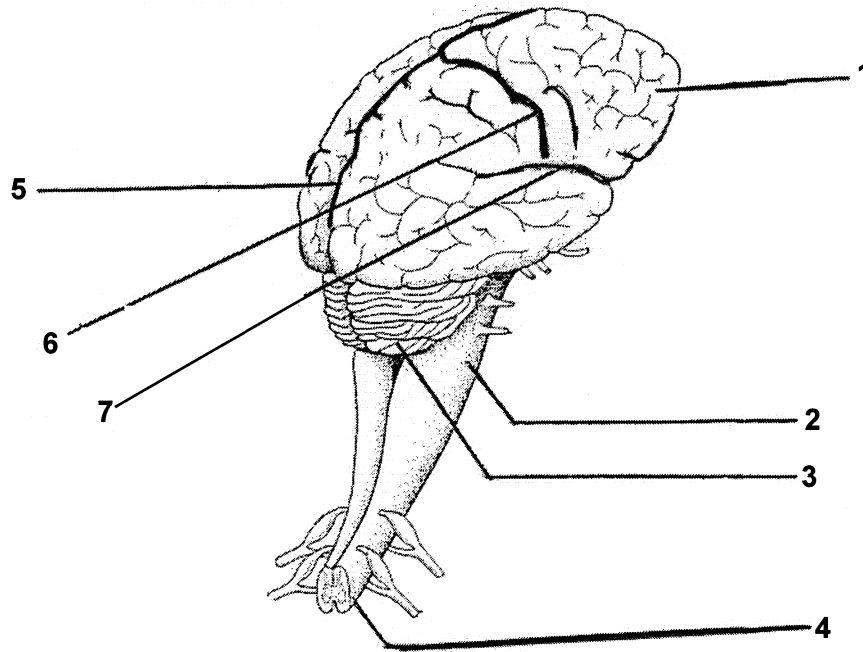


Fig 6.2: The central nervous system

- 6.2.1 Name the structures numbered 1 to 4. (4)
- 6.2.2 Give the names of the deep grooves (sulci) represented by numbers 5, 6 and 7 respectively. (3)
- 6.2.3 The structure numbered 1 can be divided into four lobes. Name the FOUR lobes and provide a function of each lobe. (8)
- 6.2.4 Discuss how structure number 4 is protected. (5)
- 6.2.5 What forms the white and grey matter in the brain respectively? (4)
- 6.2.6 Name TWO functions of the hypothalamus. (4)
- 6.2.7 (a) Define a **reflex action**. (3)
 (b) Discuss the difference between a conditioned and an unconditioned reflex. (4)
 (c) Name TWO examples of each type of reflex action. (4)

[50]

VRAAG 7

- 7.1 Bestudeer die diagram van die vroulike voortplantingstelsel en beantwoord die vrae wat volg.

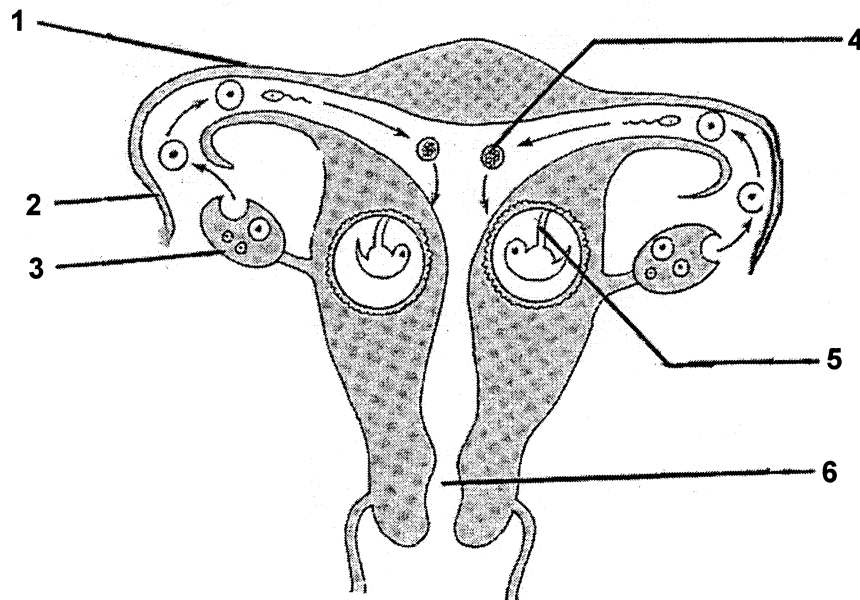


Fig 7.1: Vroulike voortplantingstelsel

- 7.1.1 Identifiseer strukture 1 tot 6. (6)
- 7.1.2 Hierdie moeder verwag 'n tweeling. Watter soort tweeling sal sy hê? Motiveer jou antwoord. (4)
- 7.1.3 Noem die hormone wat 'n rol speel in laktasie en gee 'n funksie van elke hormoon. (4)
- 7.1.4 Watter hormoon stimuleer die sametrekking van die uterus gedurende die geboorteproses? (2)
- 7.1.5 Maak 'n netjiese benoemde diagram van die sekondêre oösiet / ovum net voor bevrugting. (6)
- 7.1.6 Bespreek die samestelling van semen en asook die funksie van elke sekreet. (10)

QUESTION 7

7.1 Study the diagram of the female reproductive system and answer the questions that follow.

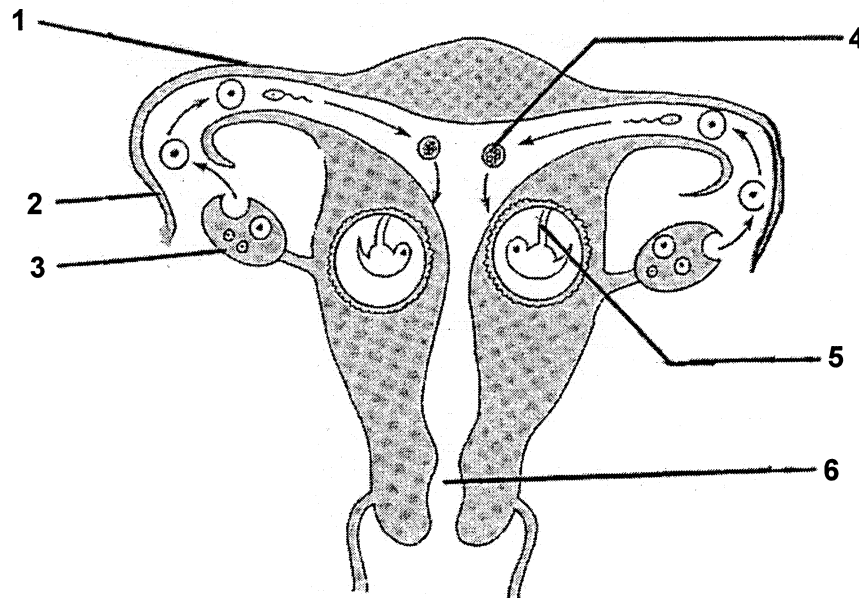
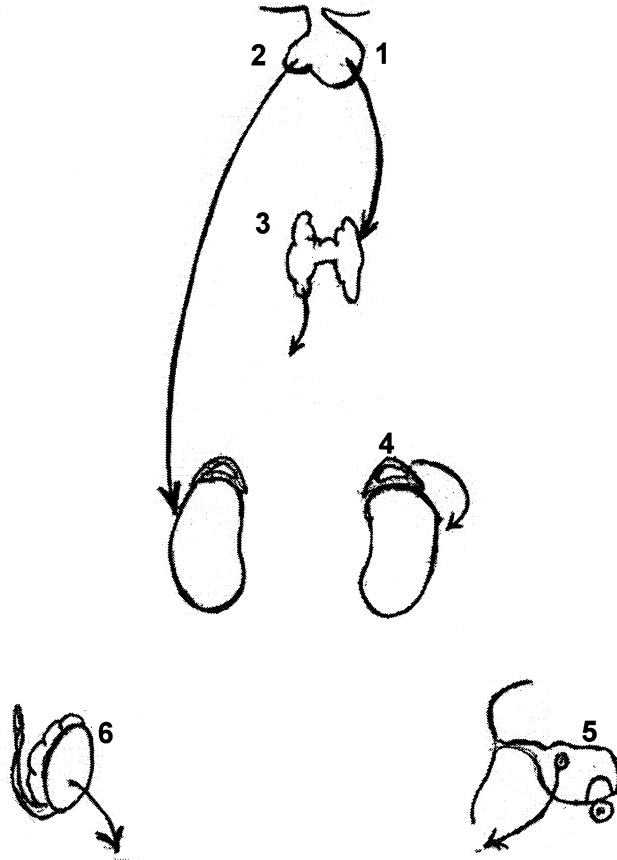


Fig 7.1: Female reproductive system

- 7.1.1 Identify structures 1 to 6. (6)
- 7.1.2 This mother is expecting twins. What type of twins will she give birth to? Substantiate your answer. (4)
- 7.1.3 Name the hormones that play a role in lactation and name the function of each hormone. (4)
- 7.1.4 Which hormone stimulates the uterus to contract during birth? (2)
- 7.1.5 Draw a neat labelled diagram of the secondary oocyte / ovum that is ready for fertilization. (6)
- 7.1.6 Discuss the composition of semen as well as the function of each secretion. (10)

7.2 Die volgende diagram toon 'n paar kliere wat sekere hormone sekreter. Nommer 1 tot 6 dui die kliere aan en die pyle gee 'n aanduiding van die teikenorgane.

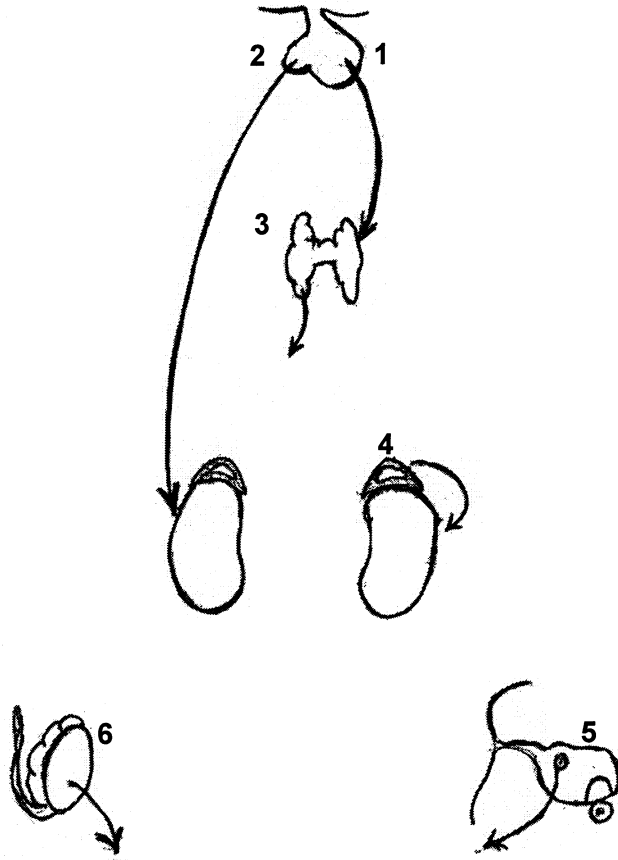


Teken die tabel in jou antwoordboek oor en voltooi dit nadat die diagram sorgvuldig bestudeer is.

| | KLIER | HORMOON | FUNKSIE VAN HORMOON |
|---|-------|---------|---------------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |

(18)
[50]

7.2 The following diagram indicates a few glands that secrete certain hormones. Numbers 1 to 6 indicate the glands and the arrows give an indication of target organs.



Redraw the table in your answer book and complete after you have studied the diagram carefully.

| | GLAND | HORMONE | FUNCTION OF HORMONE |
|---|-------|---------|---------------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |

(18)
[50]

VRAAG 8

8.1 Die volgende skets is 'n vooraansig van die oog.

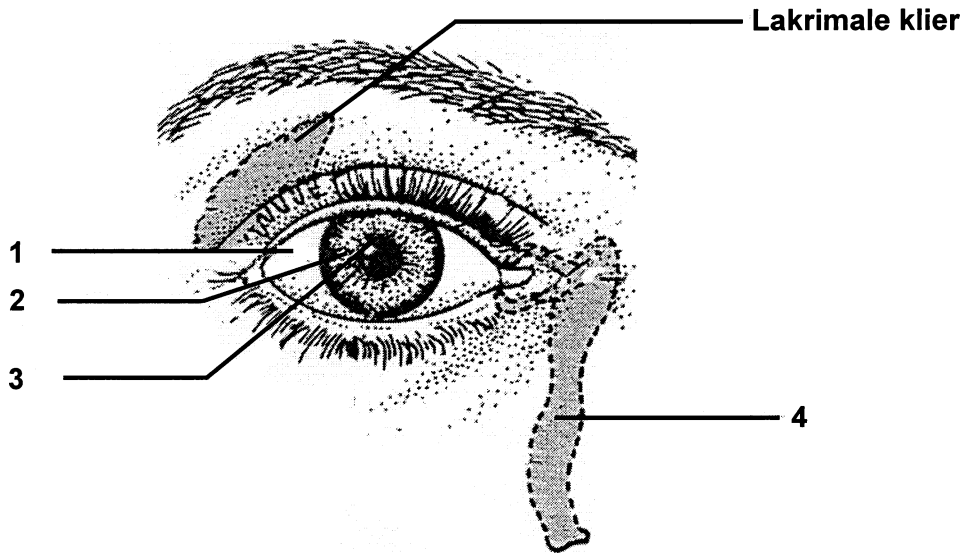


Fig 8.1: Vooraansig van die oog

- 8.1.1 Noem die stof wat deur die lakrimale klier afgeskei word en bespreek die funksie van die vloeistof. (6)
- 8.1.2 Benoem struktuur 4 en sê wat die funksie daarvan is. (3)
- 8.1.3 Benoem nommer 1, 2 en 3. (3)
- 8.1.4 Beskryf wat met strukture 2 en 3 sal gebeur as 'n persoon na die son kyk. (5)
- 8.1.5 Bespreek die verskil tussen die geelvlak en die blindevlek. (8)

QUESTION 8

8.1 The following diagram is the frontal view of the eye.

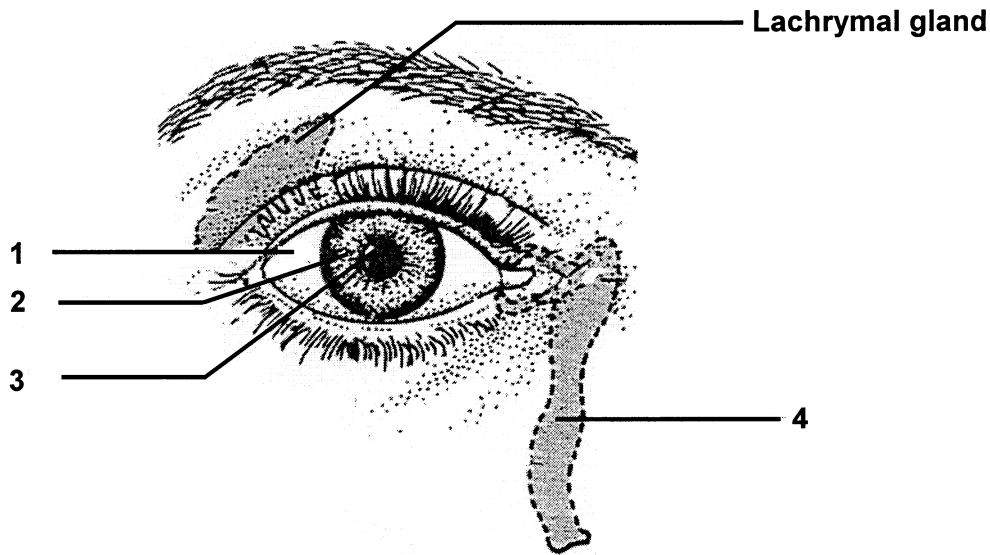


Fig 8.1: Frontal view of the eye

- 8.1.1 Name the substance secreted by the lachrymal gland and discuss the functions of the secretion. (6)
- 8.1.2 Name structure number 4 and state its function. (3)
- 8.1.3 Identify numbers 1, 2 and 3. (3)
- 8.1.4 Describe what will happen with structures numbered 2 and 3 if a person looks at the sun. (5)
- 8.1.5 Discuss the difference between the yellow spot and the blind spot. (8)

8.2 Bestudeer die diagram van 'n lengtesnit deur die nier.

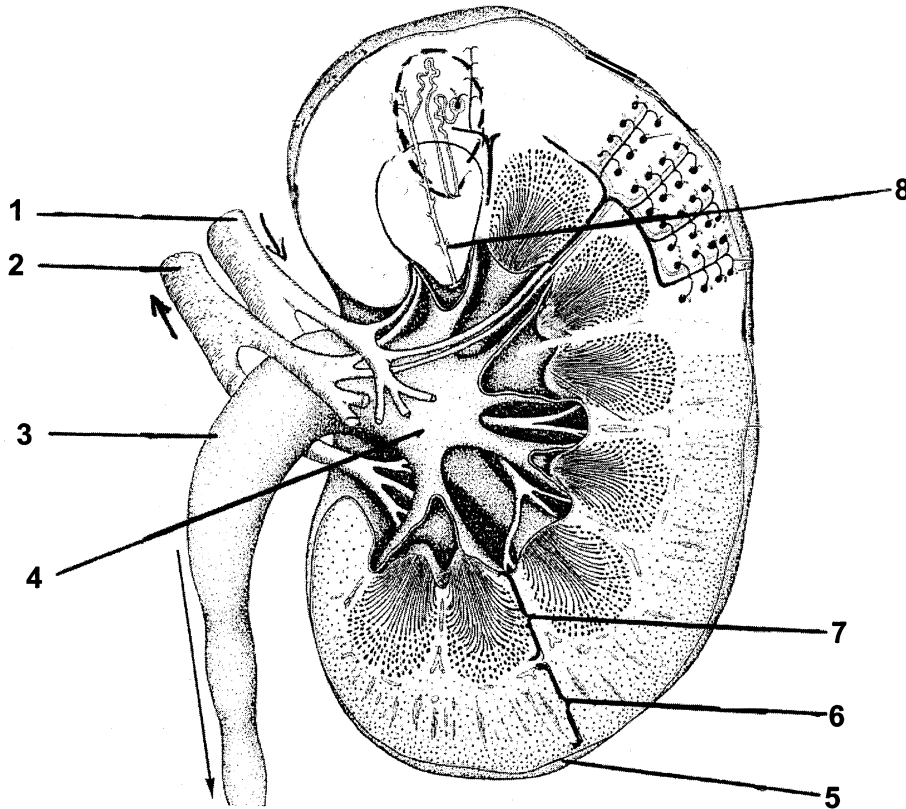


Fig. 8.2: Lengtesnit deur die nier

- 8.2.1 Benoem bloedvate 1 en 2 en bespreek hoe die bloed in die twee vate verskil. (4)
- 8.2.2 Hoe word die niere beskerm? (5)
- 8.2.3 Identifiseer strukture 3 tot 8. (6)

8.2 Study the diagram of a longitudinal section through the kidney.

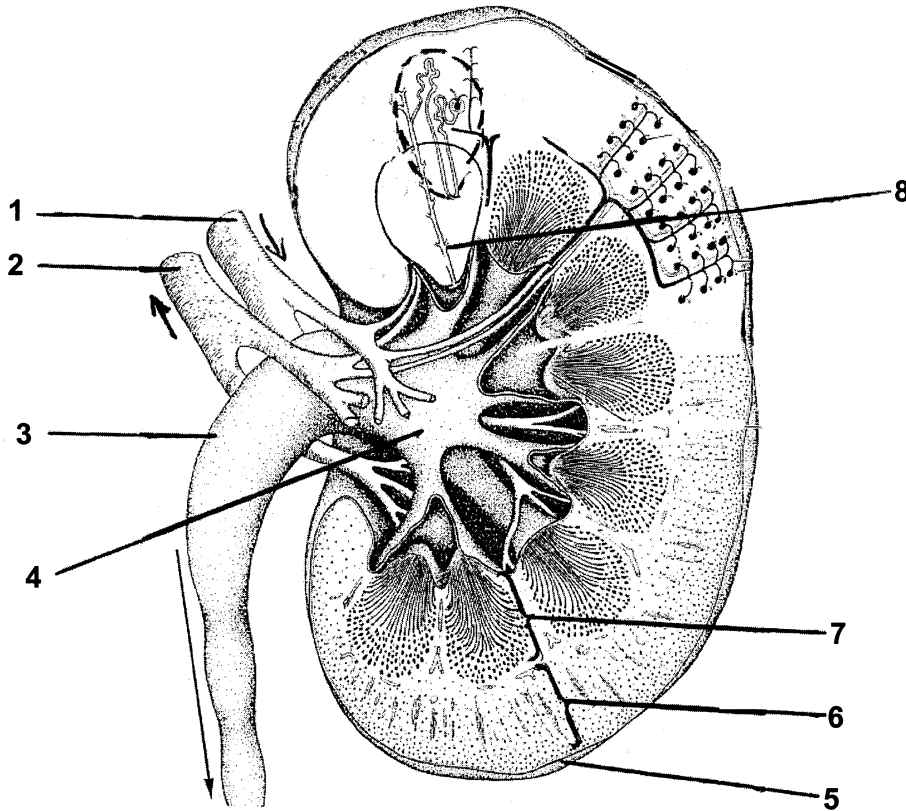


Figure 8.2: Longitudinal section through the kidney.

- 8.2.1 Label blood vessels **1** and **2** and state how the blood differs in the two vessels. (4)
- 8.2.2 How are the kidneys protected? (5)
- 8.2.3 Identify structures **3** to **8**. (6)

- 8.2.4 In die blok hieronder verskyn 'n paar terme.
Kies die term wat die beste by elk van die onderstaande omskrywings pas.
Skryf slegs die letter (a – j) en die korrekte woord uit die blok in jou antwoordboek neer.

| | |
|------------------------|-------------------------|
| Hidrostatiese druk | Boog van Henlé |
| Kapsel van Bowman | Glomerulus |
| Proksimale kronkelbuis | Uretra |
| Distale kronkelbuis | Liggaampie van Malpighi |
| ADH | Aldosteron |
| Blaas | |

- (a) Afferente arteriool wyer as efferente arteriool
 - (b) Natriumpomp
 - (c) Stimuleer natriumabsorpsie
 - (d) Herabsorpsie van alle glukose en aminosure
 - (e) Stoor uriene
 - (f) Ekskresie van uriene
 - (g) Maak selwande meer deurlaatbaar vir water
 - (h) Podosiete
 - (i) Kapillêre vate
 - (j) Kubusepiteelselle
- (10)
[50]

TOTAAL VIR AFDELING B: [200]

TOTAAL: 300

8.2.4 In the block below are a list of terms. Match each term with a description in the questions that follow. Write down only the correct word from the block next to the letter (a – j) in your answer book.

| | |
|----------------------------|-----------------|
| Hydrostatic pressure | Loop of Henlé |
| Bowman capsule | Glomerulus |
| Proximal convoluted tubule | Urethra |
| Distal convoluted tubule | Malpighian body |
| ADH | Aldosterone |
| Bladder | |

- (a) Afferent arteriole wider than the efferent arteriole
- (b) Sodium pump
- (c) Stimulate sodium absorption
- (d) Reabsorption of all the glucose and amino acids
- (e) Stores urine
- (f) Excretion of urine
- (g) Makes cell walls more permeable to water
- (h) Podocytes
- (i) Capillaries
- (j) Cuboidal epithelial cells

(10)
[50]

TOTAL FOR SECTION B: [200]

TOTAL: 300