



Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Departement van Onderwys
Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

KEREITI 12

LOETSE 2024

**LIFE SCIENCES P1
TATAISO YA HO TSHWAYA**

MATSHWAO: 150

Tataiso ena ya ho tshwaya e na le maqephe a 10.

PORINSIPOLE TSE AMANANG LE HO TSHWAYA LIFE SCIENCES

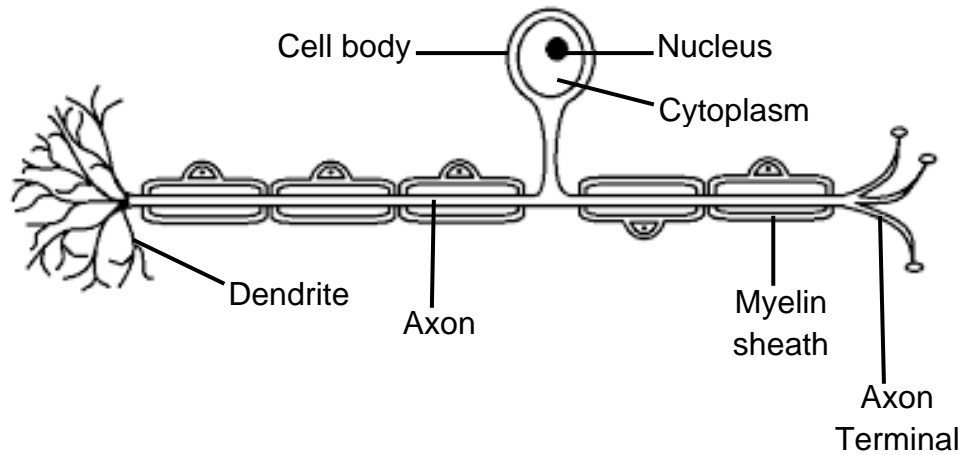
1. **Ha ho fanwe ka dikarabo tse fetang nomoro ya matshwao**
Emisa ho tshwaya ha nomoro ya matshwao e se e fihleletswe o behe mola le lebitso 'max.' lehlakoreng le letona la pampiri.
2. **Mohlala,haeba ho batlwa mabaka a mararo e be ho fanwa ka a mahlano**
Tshwaya a mararo a pele ho sa kgathaletsehe hore a nepahetse/a fosahetse
3. **Haeba ho ngotswe porosese kaofela empa ho batluwe feela karolo ya yona**
E bale kaofela o fane ka matshwao tulong e nepahetseng.
4. **Haeba ho botsitswe dipapiso empa ha fanwa ka ditlhaloso.**
Amohela haeba diphapang /ditshwantshwanyo di hlakile.
5. **Haeba ho hlokwa theibole empa ho fanwe ka seratswana.**
Baithuti ba tla lahlehelwa ke matshwao bakeng sa ho se etse theibole.
6. **Haeba ho fanwe ka didayakeramo tse nang le dianotheishene empa ho hlokeha ditlhaloso.**
Baithuti ba tla lahlehelwa ke matshwao.
7. **Haeba ho fanwe ka diflow chart bakeng sa ditlhaloso.**
Baithuti ba tla lahlehelwa ke matshwao.
8. **Haeba tatellano e lobokantswe le kamano e sa utlwahale**
Ha tatellano le kamano di nepahetse, fana ka matshwao. Ha tatellano le kamano di sa nepahala, se ke wa fana ka matshwao. Ha tatellano le kamano di boela di nepahala hape , qalella ho fana ka matshwao.
9. **Diaborevieishene tse sa hlakang**
Amohela haeba e ne e ile ya hlaloswa pele karabong. Ha eba e sa hlaloswa o se ke wa fana ka matshwao, bakeng sa aboreviashene e sa hlakang empa fana ka matshwao haeba karabo e nepahetse.
10. **Monomoro o sa nepahalang**
Haeba karabo e kenella hantle hoyu ka tatellano ya dipotso empa e sa nomorwa ka nepo, e amohelohile.
11. **Haeba puo e sebedisitsweng e fetola tlhaloso e lebeleletsweng**
Seke wa e amohela.
12. **Sepeling se diphoso**
Ha se bonahala, amohela karabo, ha feela e sa hlalose ho hong mabapi le Life Sciences kapa e sena moelelo.
13. **Ha ho fanwe ka mabitso a tlhaloso e tshwanang ho terminoloji**
Amohela, ha feela e ile ya amohelwa kopanong ya dipuisano tsa ho tshwaya porovinsing.
14. **Ha ho botsitswe thlaku empa ha fanwa ka lebitso feela (and vice versa)**
Seke wa e amohela.

15. **Ha diyunit di sa ngolwa ho dimeshamente**
Baithuti batla lahlehelwa ke matshwao. Tataiso ya matshwao e tla fana ka matshwao a ikemetseng bakeng sa diyunit.
16. **Ela hloko bakeng sa karabo, e ka fanwang, ka tsela ya mokgwa o sa tshwaneng.**
17. **Sehloho**
Kaofela (didayakeramo, kerafo, theibole, etc.) di tshwanela ho ba le sehloho.
18. **Phetolelo ya puo e molaong (terms and concepts)**
Lentswe le le leng kapa a mabedi a hlahellang(s) ka puo efe kapa efe e molaong e seng eo moithuti a botsitsweng ka yona e sebedisitswe ka tsela e nepahetseng dikarabong tsa hae a fuwe matshwao ha feela e nepahetse. Motshwayi ya nang le boiphihlelo ba puo ena e molaong a ka sebediswa. Hona ho dumelletswa ho puo tsohle tsa maleme a molaong..

KAROLO A**POTSO 1**

1.1	1.1.1	A ✓✓		
	1.1.2	B ✓✓		
	1.1.3	C ✓✓		
	1.1.4	A ✓✓		
	1.1.5	C ✓✓		
	1.1.6	B ✓✓		
	1.1.7	D ✓✓		
	1.1.8	A ✓✓		
	1.1.9	C ✓✓	(9 x 2)	(18)
1.2	1.2.1	Reseptha ✓		
	1.2.2	khoriene ✓		
	1.2.3	Effector ✓		
	1.2.4	Vasodilation ✓		
	1.2.5	Concave ✓		
	1.2.6	Mammary ✓		
	1.2.7	Retina ✓		
	1.2.8	Haepothalamase ✓		
	1.2.9	Synapse ✓ / synaptic cleft	(9 x 1)	(9)
1.3	1.3.1	A feela ✓✓		
	1.3.2	Ha e yo ✓✓		
	1.3.3	A le B ka bobedi ✓✓		
	1.3.4	A feela ✓✓	(4 x 2)	(8)
1.4	1.4.1	(a) D ✓ – Serebelamo ✓		(2)
		(b) A ✓ – Sereboramo ✓		(2)
		(c) B ✓ – Medulla Oblongata ✓		(2)
	1.4.2	- Vetheborae ✓ Thibelo ya temalo ✓		
		- Sereborale sepaenale fluidi ✓ Tshireletsa spinal cord e sebetsa jwaloka shock absorber ✓/ ho thibela kgohlano		
		- Meninjese ✓ Memoraine e tshwara spinal cord se dule tulong e le nngwe ✓/ e etsa sereboral spinal fluidi (tshwaya tse pedi feela tsa pele)	(tse pedi le hoba ke dife)	(4)

1.5 Dayakeramo ya sensory nyurone

**Marking guideline:**

- ✓ (T) Sehloho se nepahetseng
- ✓✓✓ (L) Leibole (Tse 3)
- ✓ (D) Dayakeramo e nepahetseng (sensory nyurone) (5)

MATSHWAO OHLE A KAROLO A: 50

SECTION B

QUESTION 2

- 2.1 2.1.1 $\frac{10}{100} \checkmark \times 84\,000 \checkmark = 8\,400 \text{ bana } \checkmark$ (3)
- 2.1.2 (a) - Morumo wa mokotla wa polasitiki \checkmark
E kwahela (tshireletsa)kgolo ya feyuthase ho fihlela e belehwa. \checkmark
(Tshwaya e le NNGWE feela ya pele) (2)
- (b) - Oksijeneitara \checkmark
E dumella phapanyetsano ya Digase \checkmark
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- Mokotla wa Intravenous \checkmark
O fana ka dinyutrient \checkmark
(Tshwaya e le NNGWE feela ya pele) (1 x 2) (2)
- 2.1.3 - Foethase e holang (organs) e dumelletswa ho tswela pele e hola \checkmark /e fa ditho tsa mmele nako e lekaneng
- Kgolo e ntle ya yona \checkmark / ho hola ka ho felletseng/ kgolo e phethahetseng
- Scientists tla tseba hore nako ya kemaro e tla fela neng \checkmark /ngwana o tla tswalwa neng. (3)
- 2.1.4 - Difoethase tsa motho di ka nna tsa lahlwa / senywa \checkmark
- Ho fumana tumello ho tswa ho regulatory bodies \checkmark /batswadi
Ho fana ka tsebo e tletseng ho motswadi (ba) ba nehelang mabapi le ditlamorao \checkmark
- Kgahlanong le tsa bodumedi \checkmark
(Tshwaya tse PEDI feela tsa pele) (tse 2 x 1) (2)
- 2.2 2.2.1 Ya kahare \checkmark fethiliseishene (1)
- 2.2.2 Monna o lokollela semene kahare ho mmele wa mosadi \checkmark (1)
- 2.2.3 Vivipary \checkmark (1)
- 2.2.4 - Ngwana wa khankaru o kgona ho holela kahare ho mokotla o mmeleng wa mmae nakong e atisitsweng \checkmark / ho fihlela matsatsi a 235.
- Hona ho fana ka tshireletso e kgolo \checkmark kgahlanong maemo a sa tsitsang a tikoloho (accept examples of threats)
KAPA
- Ngwana wa khankaru o itshwareletsa ho teat \checkmark ya mmae
- E fana ka nyutrishene \checkmark
(Tshwaya e le NNGWE ya pele) (e le 1 x 2) (2)
- 2.2.5 Ngwana wa ka khankaru o ...
- fufetse \checkmark
- hlobotse \checkmark
- itshetlehlile ho mmae bakeng sa nyutrishene \checkmark (tse 2 x 1) (2)

- 2.3 2.3.1 (a) Vitreous chamber ✓* / chamber
 E na le dinaryutrient bakeng sa bokahare ba leihlo ✓
 - Boloka sebopeho sa leihlo ✓
 - Teranseporente ho dumella kganya e fetele ho retina ✓
 (✓* e ya tlama + ✓ mosebetsi) (2)
- (b) Cornea ✓*
 - Refractive ya kganya ✓
 - Tshireletso ✓ ya leihlo
 - Dumella kganya ho kena leihlong ✓
 (✓* e ya tlama + ✓ mosebetsi) (2)
- 2.3.2 - Kganya e kenang leihlong ha e no ba le taolo e phethahetseng ✓
 /controlled
 - Kganya e ngata haholo / e fokolang e ka kena leihlong ✓
 - Pherekano ya phetolo ya ditshwantsho tse etsuwanang ho retina ✓ / e
 bakang pono e lerotho. (3)
- 2.3.3 - Ciliary muscles contract ✓
 - Disuspensory ligaments di ya nyehla ✓
 - Thinsane ya lense e ya fokotseha ✓
 - Lense e ba convex haholo ✓ / bulged
 - Matla a refractive ya lense a tla eketseha ✓ / mahlasedi a kganya
 a ba refractive haholo
 (sebopeho se hlakileng se ya etsuwa ho retina) (5)
- 2.4 2.4.1 (a) D ✓ – Oval window ✓ (2)
- (b) B ✓ – Round window ✓ (2)
- 2.4.2 - Ho retella ka potlako/ le dayerekshene ✓
 - Ho susumetsa cristae ✓
 - Stimulate se fetolelwa ho diimpulse ✓
 - Impulse e romelwa ho serebelamo ✓
 - E feta ho the auditory nerve ✓
 - Serebelamo e romela impulse ho voluntary / skeletal muscles ✓ ho
 boloka botsitso (tse 4 x 1) (4)
- 2.4.3 - Sebopeho se se telele se thatehileng ✓
 Katiso ya sebaka surface ho hlokomela kgatello ya thothomelo ya
 endolymph ✓ / thusetsa bokgoni ba ho hlokomela frequency e tlase
 ya modumo.

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- Boteng ba dimekhanoreseptor / organ of Corti ✓
 Ho fetolela kgatello ya thothomelo ho neve impulse ✓

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- E na le fluidi ✓ / perilymph le endolymph
 Tulo eo kgatello ya modumo e etswang e be e tsamaye ho yona ✓
 (e le 1 x 2) (2)

- 2.5 2.5.1 Geotropism ✓ (1)
- 2.5.2 Ho ya ka ho potapota ha clinostat
- Keravithi e tla lekana mahlakore kaofela ✓ / ha ho no ba teng tshusumetso ya keravity
 - Auxins e tla abuwa ka ho lekanang ✓ ho root tip
 - E etse tekanyo ya cell elongeishene ✓ /kgolo
 - E etse root e hole e tshekalletse ✓ /e sa kobehe (tse 3 x 1) (3)
- 2.5.3
- Auxin e fetela ho lehlakore le lefifi/le moriting ✓ ho setemo
 - Boemo bo phahameng ba auxin bo susumetsa kgolo
 - E ise ho kgolo e phahameng ya cell /elongeishene lehlakoreng leo
 - Setemo se kobehele lehlakoreng la kganya (le hoba ke di fe 3 x 1) (3)
- 2.5.4
- Mekhenikhale ✓ /metsu e hlabang
 - Khemikhale ✓ (2)
- [50]

POTSO 3

- 3.1 3.1.1 - 20 ya ditweba e ne e behilwe sehlopheng ka nngwe ✓
Ho netefatsa saese e kgolo ya sempole ✓

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- Diteko di entswe makgetlo a 3 nakong ya matsatsi a 90 ✓
Ekseperimente e ile ya phetaphetwa ✓

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- Disempole tsa serumo ya madi di ile tsa nkuwa random ✓
Ho ka fumana avareije ✓

(Tshwaya e le NNGWE ya pele) (le ho ba ke efe 1 x 2) (2)

- 3.1.2 - Ka ho sebedisa ditweba tsa dilemo tse tshwanang tsa
reporodakshene
-Ho fa ditweba metsi a lekanang ✓

(Tshwaya e le NNGWE ya pele) (le hoba ke efe 1 x 1) (1)

- 3.1.3 - Thestoseterone levele ✓ / boemo ba thestoseterone (1)

- 3.1.4 - Ke control / Ho re thusetsa ho pabisa diphetho ✓
- Ho bontsha ho fokotseha ha thestoseterone ✓
- E bakelwa ke dimicroplastic ✓
- E seng metsi ✓ (le ho ba ke dife 3 x 1) (3)

- 3.1.5 Ha dimicroplastic di kenella mmeleng wa organism (ditweba),
difertility rate di tla theoha ✓✓

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Dimicroplastics ka hare ho mmele wa organism (tweba) e tla bakela
e hodimo fertility rate ✓✓ (2)

- 3.1.6 - Ka tlasa kगतello ya thestoseterone ✓
- Didiploid cell tse ho diseminifera tšhubule ✓ tsa ditestes
- Di kena ho meiosis ✓
- Ho etsa dispemo tse hapoloide ✓ (4)

- 3.1.7 - Dithestosterone level tse tlase ✓ e tla le diphetho
- Ho theoha ha spermatogenesis ✓/sepemo tse nyane di tla
etsuwa/kgolo (2)

- 3.2 3.2.1 (a) Diadrenal gland ✓ (1)

- (b) Pancreas ✓ (1)

- 3.2.2 Ho boloka levele ya thyroxin ✓ bohatong bo bosesane ✓ mmeleng. (2)

- 3.2.3 Exocrine
- ho ✓/pancreatic juice
- ho ya ho duct ✓
Endocrine
- ho ntshuwa ha homoune ✓/glucagon/insulin
- e ya mading ✓ (4)

- 3.2.4 - Tshwelesa C e ntsha homoune adrenalin ✓
 - e phahamisa ho fetolelwa ha glycogen ho ya ho tlulukhouse ✓
 - e nyolla mading diglucose levele ✓
 - e nyolla bohato ba ho hema ✓
 - oxejene e ngata e fetela madding. ✓
 - e nyolla morethetho wa ho otlala ha pelo ✓
 - diblood vessel ho sekelethale muscle ✓
 - Madi a mangata a tla fihla ho diskeleta muscle ✓ (tse 5 x 1) (5)
- 3.2.5 (a) pituitary gland ✓ / hypophysis / Karolo A (1)
 (b) Akeromegaly ✓ (1)
- 3.3 3.3.1 (a) Ovaries ✓ / graafian follicle / follicle e holang (1)
 (b) Corpus luteum ✓ (1)
- 3.3.2 Letsatsi la 14 ✓ (1)
- 3.3.3 - LH levele di nyolohile ✓ / phahame (1)
- 3.3.4 - Impolanteishene / fethiliseishene e etsahetse ✓
 - corpus luteum ha e fele ✓ / e tswelapele ho ntsha porojesterone (2)
- 3.3.5 - Dilevele tse hodimo tsa projesterone ✓
 - Dithibela pituitary gland ✓
 - Ho etseng FSH ✓
 - Ha ho difollicle tse tla susumetswa ho etsahala ✓ (4)
- 3.4 3.4.1 - Chemoreceptors e ho carotid artery e susumetswa ✓ ke ho theoha ha pH
 - Imphalese di romelwa ho medulla oblongata ✓ / medulla oblongata e ya susumetswa
 - medulla oblongata e susumetsa pelo ✓
 - ho otlala ka potlako ✓ ho etsang
 - carbon dioxide e ngata e iswe matshwafong ✓
 - dimuscle tsa ho hema ✓ / diinthakhostale muscle le dayaforamo
 - dikhontrakta haholo ka ho hofitisisa ✓ hape
 - bohato/botebo ba ho hema bo ya phahama ✓
 - carbon dioxide e ntshetswa kantle ✓
 - carbon dioxide levele e mading e ya theoha ✓ / e kgutlela boemong. (tse 7 x 1) (7)
- 3.4.2 - Semathi se tla ba le hyperthermia ✓
 - Diporoteine / dienzyme di ka nna tsa shwa ✓
 - A ka nna a lahlehelwa ke consciousness ✓
 - E lebisang ho temalo ya moshwelella ✓ / lefu (tse 3 x 1) (3)

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MATSHWAO OHLE A KAROLO B: 50
MATSHWAO OHLE: 150