



Province of the
EASTERN CAPE
EDUCATION



**NATIONAL
SENIOR CERTIFICATE**

KEREITE YA 12

LOETSE 2022

**LIFE SCIENCES P1
TATAISO YA HO TSHWAYA**

MATSHWAO: 150

Tataiso ena e na le maqephe a 8.

MELAO-METHEO E AMANANG LE HO TSHWAYA LIFE SCIENCES

1. **Haeba ho fanwe ka dintlha tse ngata ho feta a dimaraka tse fanweng**
Emisa ho tshwaya ha matshwao a hodimo a fihletswe ebe o beha mola wa wavy le 'max' ka lehlakoreng le letona la letsoho le letona.
2. **Haeba, ho etsa mohlala, ho hlokahala mabaka a mararo mme ho fanwe ka a mahlano**
Tshwaya tse tharo tsa pele ho sa tsotelehe hore na kaofela kapa tse ding di nepahetse / di fosahetse.
3. **Haeba porosese yohle e fanwe, ha ho hlokahala feela karolo ya yona**
Bala tsohle mme o fane ka dimaraka karolo e amehang.
4. **Haeba ho botswa papiso empa ho fanwe ka ditlhaloso.**
Amohela haeba diphapano/ditshwano di hlakile.
5. **Haeba ho etsa theyibole ho hlokahala, empa ho fanwe ka serapana**
Baithuti ba tla lahlehelwa ke dimaraka ka ho se kenye theyibole.
6. **Haeba didayakeramo di fanwe moo ho hlokahalang ditlhaloso.**
Bahlahlobuwa ba tla lahlehelwa ke dimaraka.
7. **Haeba ditjhate tsa phallo di fanwe bakeng sa ditlhaloso.**Bahlahlobuwa bat la lahlehelwa ke dimaraka.
8. **Haeba tatellano e sithabeditswe mme mahokela a sa utlwahale** Moo tatellano le mahokela a nepahetseng, fana ka dimaraka. Ha tatellano le mahokela a fosahetse, o se ke wa fana ka dimaraka.Haeba tatellano le dikgokahano di nepahala hape, qalella ho fana ka dimaraka.
9. **Dikgutsufatso tse sa tsejweng**
Amohela haeba e hlalositse pele. Haeba e sa hlaloswa, o se ke wa fana ka dimaraka ka kgutsufatso e sa tsejweng, empa fana ka dimaraka karolong e setseng haeba e nepahetse.
10. **Dinomoro tse fosahetseng**
Haeba karabo e dumellana le tatellano e nepahetseng ya dipotso, empa ho fanwe ka nomoro e fosahetseng, se ke wa amohela.
11. **Haeba puo e sebedisitsweng e fetola moelelo o rerilweng**
Se ke wa amohela.
12. **Diphoso tsa mopeleto**
Haeba e tsebahala, amohela karabo, ha feela e sa bolele ho hong ho Disaense tsa Bophelo kapa haeba e sa tsamaellane le maemo.
13. **Haeba mabitso a tlwaelehileng a fanwe ho theminoloji (mantswe)**
Amohela, ha feela e amohetswe kopanong ya naha ya dipuisano ka tataiso ya ho tshwaya.
14. **Haeba ho botsitswe tlhaku feela, empa ho fanwe ka lebitso feela (le ka tsela e fapaneng)** Se ke wa fana ka dimaraka.

15. **Haeba diyuniti di sa fanwa ho ditekanyo**
Baithuti ba tla lahlehelwa ke dimaraka. Tataiso ya ho tshwaya e tla fana ka matshwao bakeng sa di-yuniti ka thoko.
16. **Ela hloko kutlwisiso ya karabo, e ka bewang ka tsela e fapaneng**
17. **Sehlooho**
Dipapiso tsohle (didayakeramo, dikerafo, di theibole jj) di tlameha ho ba le Sehlooho
18. **Ho fetolela puong ya dipuo tsa semmuso (dipolelo le dikhopolo)**
Lentswe le le leng kapa a mabedi a hlahang puwo efe kapa efe ya semmuso ntle le puwo ya tekolo ya moithuti e sebelisitsweng haholo ho dikarabo tsa hae a lokela ho amohelwa, haeba a nepahetse. Motshwai ya tsebahalang ka puo ya semmuso o le lokela ho botswa. Sena se sebetsa lipuwong tsohle tsa semmuso.

KAROLO YA A**POTSO 1**

- 1.1 1.1.1 A ✓✓
 1.1.2 A ✓✓
 1.1.3 B ✓✓
 1.1.4 D ✓✓
 1.1.5 D ✓✓
 1.1.6 C ✓✓
 1.1.7 D ✓✓
 1.1.8 A ✓✓
 1.1.9 A ✓✓
 1.1.10 C ✓✓ (10 x 2) (20)
- 1.2 1.2.1 Porolaktine ✓
 1.2.2 Maetosise ✓
 1.2.3 Reflekse akshene ✓
 1.2.4 Othonomike ✓nevase sistimo
 1.2.5 Sinapse✓
 1.2.6 Kereniamo ✓
 1.2.7 Geseteishene ✓
 1.2.8 Homone e susumetsang thaeroksine ✓/ TSH
 1.2.9 Osemorejuleishene ✓
 1.2.10 Khophase khalosamo ✓ (10 x 1) (10)
- 1.3 1.3.1 A feela ✓✓
 1.3.2 Ha e yo ✓✓
 1.3.3 A feela ✓✓ (3 x 2) (6)
- 1.4 1.4.1 (a) Haepothalamase ✓ (1)
 (b) Phijuithari ✓tshwelesa (1)
 (c) ADH ✓/Antijiurethike homone (1)
 (d) Renale tjubule ✓ /kholekthing tjubule/distale khonvoluthede tjubule (1)
 1.4.2 E dumella metsi ho feta ✓ (1)
 1.4.3 Ho fufulelwa✓/Ho hema. (E le nngwe) (1)
(Tshwaya e le NNWE ya pele)
- 1.5 1.5.1 (a) Mootho nyurone ✓ (1)
 (b) Sensari nyurone ✓ (1)
 1.5.2 Mmele wa sele ✓ (1)
 1.5.3 (a) A ✓ Mayoline shife ✓ (2)
 (b) C ✓ Didendraete ✓ (2)
 1.5.4 II ✓ (1)

KAKARETSO YA KAROLO YA A: 50

KAROLO YA B**POTSO YA 2**

2.1 2.1.1

T ✓

DAYAKERAMO YA I	DAYAKERAMO YA II
E na le sevikse e le nngwe ✓	E na le disevikse tse pedi ✓
E na le dipopelo tse pedi ✓	E na le dipopelo tse pedi/yutheri ✓

(Tshwaya tsa pele tse pedi)

(Any 2 x 2 + 1) (5)

- 2.1.2 - Boimana ba ekthopike(ectopic pregnancy) ✓
 - Intha- yutherine fithale restriksheene(Intra-uterine foetal growth restriction) ✓
 - Polasentheishene e sa phethahalang ✓
 - Foetal malpositionfithase e sa dulang hantle ✓

(Leha e le dife tse 2 x 1) (2)

(Tshwaya tsa pele tse pedi)

- 2.1.3 - Ditekanyo tse phahameng tsa porojesterone ✓
 - Thibela tshwelesa ya phijuthari ✓
 - ho ntsha FSH ✓
 - Ka hona, ha ho follicle e ntjha e tla hlaha ✓
 - me ha ho ovum e tla lokollwa ✓/ ovuleishene e etsahalang
 - hore fethiliseishene e be teng hape ✓ (Leha e le dife tse 4 x 1) (4)

- 2.2 - Embriyo e hlahisa lera le ka ntle, khorione
 le lera la ka hare, amnion ✓
 - Amnion e etsa sekoti(khavithi) ✓
 - e kwahetseng fuluwiti ya amnion ✓
 - Divillus tsa khorione ✓tse hlahang ho khorione
 - mmoho le endometriamo ✓
 - e etsa plasenta ✓
 - Tjupu e bitswang mokgubu(ambikhale khode) ✓ e kgomaretsa
 - fithase ho plasenta ✓
 - Mokgubu (ambikhale khode) o na le ambikhale athari ✓
 - le ambikhale veine ✓ (Leha e le dife tse 8 x 1) (8)

- 2.3 2.3.1 - Methapo ya madi ✓ (1)

- 2.3.2 - Methapo ya madi/ karolo ya A e ya sesefala(khonstrikta)
 ✓/vasokhonstrikshene e etsahala
 - e etsa hore madi a fokolang a phallele letlalong ✓
 - therefore, less heat is lost ka hoo mocheso o fokolang o wa
 lahleha ✓ho ya ho tikoloho (3)

- 2.3.3 - ho tla ba le ho fokotseha/bosiyo ba oksijene le ✓
 - tlulukhose tse yang letlalong ✓
 - ho baka ho theoha/ hoba siyo ha methabolismo ✓/ resipireishene
 ya disele/mocheso o fokolang (3)

- 2.3.4 - Tlhahiso e fokolang/bosiyo ba mofufutso bo baka
 evaphoreishene e fokolang ✓/ ho phola ho fokolang
 - e etsang ho nyoloha ha themphereitjhara ya mmele ✓/ motjheso
 o phahameng haholo
 - Hona ho baka denetjharing ya dienzaeme ✓
 - E etsang hore methabolismo porosese e emise which will cause ✓ (4)

- 2.4 2.4.1 - Mahlo a kwalehile ✓/ bofofu
 - Ha ho masiba ✓
 - Ha e tsamaye ✓ (Leha e le dife tse 2 x 1)
(Tshwaya tse PEDI tsa pele) (2)
- 2.4.2 - Ha e fumanwe ke dipredeitha tse ngata ✓
 - kaha di keke tsa di balehela
 - Ka hoo, e eketsa menyetla ya ho phela ✓ (3)
- 2.4.3 - Bongata ba youku boy a eketsetseha hodinyana tse prekhosha
 ✓ ho feta ho altrishe
 - Hobane di hloka dinyutrientse tse ngata ✓
 - Hore di hlahe di hodile ka ho feletseng ✓ (3)
- 2.5 2.5.1 (a) Supolimente ya zinke ✓ (1)
 (b) Ditekanyo ts testosterone mading ✓ (1)
- 2.5.2 - Ditekanyo tsa testosterone mading di ile tsa mejarwa ✓
 - pele ho sebediswa sapolimente ya zinke ✓ (2)
- 2.5.3 - Mofuta wa sehlahiswa sa zinki ✓
 - Khonsentreishene ya zinke ✓
 - Volumo ya zinke ✓
 - Mokgwa wa ho sebedisa zinke ✓
 - Nako ya ho sebedisa sapolimente ya zinke ✓
 (Le ha e le dife tse 2 x 1) (2)
(Tshwaya tse pedi tsa pele)
- 2.5.4 - Ho sebedisitswe ba batona ba 60 ✓
 - Patlisiso e entswe ka nako ya dibeke tse 12 ✓/ dibeke tse 6
 (Le ha e le di fe tse 2 x 1) (2)
(Tshwaya tse PEDI tsa pele)
- 2.5.5 Sapolimente ya zinki e eketsa ditekanyo tsa zinke ✓✓ (2)
- 2.5.6 - E susumelletsa tlhahiso ya disele tsa sepemo ✓
 - E susumelletsa phubathi ✓
(Tshwaya tse PEDI tsa pele) (2)

[50]

QUESTION 3

- 3.1 3.1.1 Cochlea (1)
- 3.1.2 Transmits impulses to the brain ✓ (1)
(Mark first ONE only)
- 3.1.3 To prevent echo ✓ (1)
- 3.1.4 - Sudden changes in the speed and direction of head movement ✓
 - stimulates the cristae ✓
 - in the semi-circular canals ✓
 - A change in the position of the head ✓
 - stimulates the maculae ✓
 - in the utricle and saccule ✓
 - to send the impulse ✓
 - via the auditory nerve ✓
 - to be interpreted in the cerebellum ✓
 - Cerebellum sends impulses to skeletal muscles ✓ to restore balance (Leha e le dife tse 7 x 1) (7)
- 3.1.5 - No vibrations will occur ✓
 - and no pressure waves will be created in the inner ear ✓
 - Organ of Corti/hair cells will not be stimulated ✓
 - Therefore, no impulses will be sent to the cerebrum ✓ (4)
- 3.2 3.2.1 To expose leaves to light for photosynthesis ✓ (1)
(Mark first ONE only)
- 3.2.2 Geotropism ✓/ gravitropism (1)
- 3.2.3 To eliminate the effect of gravity ✓/ expose the stem to gravity on all sides (1)
- 3.2.4 - Auxins will move to the lower side of the growing tip ✓
 - There will be a high concentration of auxin in the lower side ✓
 stem
 - which will stimulate cell elongation ✓/ growth
 - Therefore, the lower side will grow faster ✓
 - This will cause the stem to bend upwards ✓ (5)
- 3.2.5 - The auxin ✓
 - produced at the tip of the stem ✓ will be removed
 - Therefore, stem will not grow ✓
 - Lateral branches will develop ✓
 - In the absence of apical dominance ✓ (Any 4 x 1) (4)
- 3.2.6 Gibberellins ✓ (1)

- 3.3 3.3.1 Cornea ✓ (1)
- 3.3.2 - The circular muscles relax ✓
 - While the radial muscles contract ✓
 - to cause the pupil to dilate ✓ (Leha e le dife tse 2 x 1) (2)
- 3.3.3 - Muscles in Part A/ ciliary muscles will contract ✓
 - Causing the suspensory ligaments to slacken ✓
 - Resulting in the lens becoming more rounded ✓/convex (3)
- 3.3.4 (a) C ✓ (1)
- (b) - If the drainage channels are fully blocked ✓
 - the excess fluid accumulates in the eye ✓ (2)
- (c) - When the photoreceptors are damaged the stimuli cannot be converted to nerve impulses ✓
 - The damage to optic nerve prevents the transmission of nerve impulses ✓
 - to the cerebrum for interpretation ✓ (3)
- 3.4 3.4.1 (a) Kidney ✓ (1)
- (b) Aldosterone ✓ (1)
- 3.4.2 (a) - Salt levels in the blood decrease ✓
 - Because less/ no aldosterone is secreted ✓
 - Therefore, renal tubules are less permeable ✓
 - Less salt is reabsorbed into blood ✓
 - since salt levels are above normal in blood ✓ (5)
- (b) - There will be less salt in the urine ✓
 - Because renal tubules are more permeable to salt ✓
 - More salt is reabsorbed into blood ✓
 - Since salt levels were below normal in the blood ✓ (4)
- [50]

KAKARETSO YA KAROLO YA B: 100
KAKARETSO E FELLETSENG: 150