



Province of the  
**EASTERN CAPE**  
EDUCATION



# **NATIONAL SENIOR CERTIFICATE**

**KEREITI YA 12**

**LOETSE 2023**

**AGRICULTURAL SCIENCES P1**

**MATSHWAO: 150**

**NAKO: Dihora tse 2½**

---

Pampiri ena e na le maqephe a 18.

---

**DITAELO LE TLHAHISOLESERING**

1. Pampiri ena e na le dikarolo tse PEDI, e leng KAROLO YA A le KAROLO YA B.
2. Araba di dipotso KAOFELA BUKENG YA DIKARABO.
3. Qala potso E NNGWE LE E NNGWE leqepheng le LETJHA.
4. Nomora dikarabo ka tsela e nepahetseng ho ya ka mokgwa o sebedisitsweng pampiring ena ya dipotso.
5. O ka sebedisa khalekhuleitha e sa porokeramuweng.
6. Bontsha dikhalekhuleishene tsa hao KAOFELA, le difomula moo ho hlokehang.
7. Ngola ka mongolo o makgethe mme o balehang.

**KAROLO YA A****POTSO YA 1**

- 1.1 Ho fanwe ka dikgetho tse fapaneng e le dikarabo tse ka nepahalang dipotsong tse latelang. Kgetha karabo e nepahetseng mme o ngole tlhaku feela (A–D) pela dinomoro tsa potso (1.1.1 ho ya ho 1.1.10) BUKENG YA DIKARABO, mohlala 1.1.11 B.

1.1.1 Khemikhale daejeshene dikgohong e etsahala ho ...

- A cropo.
- B poroventrikhulase.
- C kila.
- D ventrikhulase.

1.1.2 Mahlomela a kang menwana a sebetsang jwalo ka difuthumatsi ka hara rumen.

- A Dipapilla
- B Dimaekro-fingas
- C Divilase
- D Dimakro-vilase

1.1.3 Divitamini tse qhibidihang mafureng tse hlokehang bakeng sa ho etsa mesebetsi e bohlokwa mmeleng ya diphoofolo.

- A Cobalamin le vitamin K
- B Thiamine le vitamin E
- C Riboflavin le pyridoxine
- D Retinol le vitamin D

1.1.4 Tse latelang ke mesebetsi ya lero le sekerethilweng ke sebete.

- (i) E stimuleitha phetolelo ya pepsinojen ho isa ho pepsin.
- (ii) E tshentsha PH e asidikhi e be alekhalaene.
- (iii) E ntshetsa pele abozoposhene ya difethi asiti.
- (iv) E ntshetsa pele ho qhibidiha ha mafura.

Kgetha motswako o NEPAHETSENG:

- A (i), (iii), le (iv)
- B (ii), (iii) le (iv)
- C (i), (ii) le (iv)
- D (i), (ii) le (iii)

1.1.5 Dikgomo di ya ferekana ha di ...

- A kgaphelwa ka mohlape.
- B latela modisana.
- C arotswe ho tse ding.
- D tshwarwa ka tsela e tlwaelehileng.

1.1.6 Tse latelang ke ditataiso tsa motheo tsa ho tsamaisa diphoofole tsa polasi:

- (i) Diphoofole tse sa tshwaneng di tlameha ho tsamaiswa mmoho.
- (ii) Diphoofole tse emereng le tse lemetseng ha di a tlameha ho tsamaiswa.
- (iii) Diphoofole tsa bong bo fapaneng le dilemo tse fapaneng di tlameha ho arolwa.
- (iv) Ho letsa molodi le ho phatlola diphadi ha ho tsamaiswa diphoofole mmileng.

Kgetha motswako e NEPAHETSENG:

- A (i), (iii), le (iv)
- B (ii), (iii) le (iv)
- C (i), (ii) le (iv)
- D (i), (ii) le (iii)

1.1.7 Tse latelang ha di a NEPEHALA mabapi le saekele ya bophelo ya one-host tick:

- A Mahe a qhotwsa mme a be larvae
- B Dilarvae di hola ho ba dinymph
- C Larvae le nymph di dula ho intermediate host
- D Di nymph di hola ho ba tse kgolo

1.1.8 Mafu a baketeria a tshwaetsang.

- A Ke anthrax le mastitis
- B Ke lumpy wool le polyneuritis
- C Ke avian flu le tuberculosis
- D Ke ringworm le anaplasmosis

1.1.9 Mokgahlelo wa courtship nakong ya meithing o bonahala ka ...

- A ho ntshetsa simene bokapeleng ba vajaan.
- B intromeshene ho vajaan.
- C erekeshene ya phenisi e stimuleithilweng ke diferomouni.
- D ho tlolelwa ha phoofole e tsehadi ho dumella phenetereishene.

1.1.10 Ho kgusa kgomo pele ho laketheishene e latelang ho etsetswa ho ...

- A ho nnetefatsa kemaro ya ka pele.
- B ho fokotsa mathata a amanang le ho emara.
- C ho kgutsufatsa nako ya jeseteishene
- D dumella ho hlaphohelwa ha diglandula tishu. (10 x 2) (20)

- 1.2 Bontsha hore ekaba ditlhaloso tse ho KHOLOMO YA B di tsamaelana le **A FEELA, B FEELA, A LE B KA BOBEDI kapa HA E YO** ho KHOLOMO YA A. Ngola A feela, B feela, A le B ka bobedi kapo HA E YO pela dinomoro tsa potso (1.2.1 ho ya ho 1.2.5) BUKENG YA DIKARABO, mohlala 1.2.6 B feela.

KHOLOMO YA A			KHOLOMO YA B
1.2.1	A:	Yuria	Sapolemente ya poroteini ho reishene ya diphoofolo tse thuisang nakong ya dikgwedi tse ommeng tsa mariha
	B:	Biuret	
1.2.2	A:	Cud	Bolase e thuisitsweng ya kgutlela molomong
	B:	Chyme	
1.2.3	A:	Tshwareho e nepahetseng ya diphoofolo	Nama e bang thata mme e be le matetetso ka mora ho hlajwa
	B:	Tshwareho e sa nepahalang ya diphoofolo	
1.2.4	A:	Liver fluke le (chicken lice)	Dipharasaete tsa ka hare dikgohong
	B:	Bont tick le wireworm	
1.2.5	A:	Endodemo	E ikarabella ho holeng ha respireithari le daejestive sistimo
	B:	Ektodemo	

(5 x 2) (10)

- 1.3 Fana ka lentswe le le LENG bakeng sa tlhaloso ka nngwe ho tse latelang. Ngola lentswe feela pela dinomoro tsa potso (1.3.1 ho ya ho 1.3.5) BUKENG YA DIKARABO.

- 1.3.1 Indekse e sebedisitsweng ho fumana khwalithi ya porotheini dijong tsa diphoofolo
- 1.3.2 Sistimo ya tlhahiso ya diphoofolo le dijalo e leng ho fepa lelapa haholoholo
- 1.3.3 Boemo moo diphoofolo tse tshehadi di bang le mathata ha di tswala
- 1.3.4 Sistimo e nkang ditshila ho tloha ho dithishu tsa mmele ho isa ho di ditho tsa ekskrethari
- 1.3.5 Boemo dipohong bo bonahalang ka ho hloka takatso ya ho tlolela.

(5 x 2) (10)

- 1.4 Fetola MANTSWE a SEHELLETSWENG MELA polelong ka NNGWE ho tse latelang hore di nepahale. Ngola karabo e nepahetseng feela pela dinomoro tsa potso (1.4.1 ho ya ho 1.4.5) BUKENG YA DIKARABO.
- 1.4.1 Porokeramo ya nyutrishene ke morero wa leano la rapolasi ho nnetefatsa boteng ba dijo tsa diphoofolo ho fihlella ditlhoko tsa diphoofolo, selemo ho pota.
- 1.4.2 Mafu a Acute a nka nako e telele mme a ipheta kgafetsa phoofolong e le nngwe.
- 1.4.3 Foskini ke mokotlana o mennweng habedi o kwahelang le ho sireletsa ditestis.
- 1.4.4 Umbilikhale khodo ke setho se vaskhula membranase se kopanyang madi a mme le a lesea le so belehwe.
- 1.4.5 Embryo splitting ke porosese moo blastosisti e namathelang ho mabota a popelo. (5 x 1) (5)

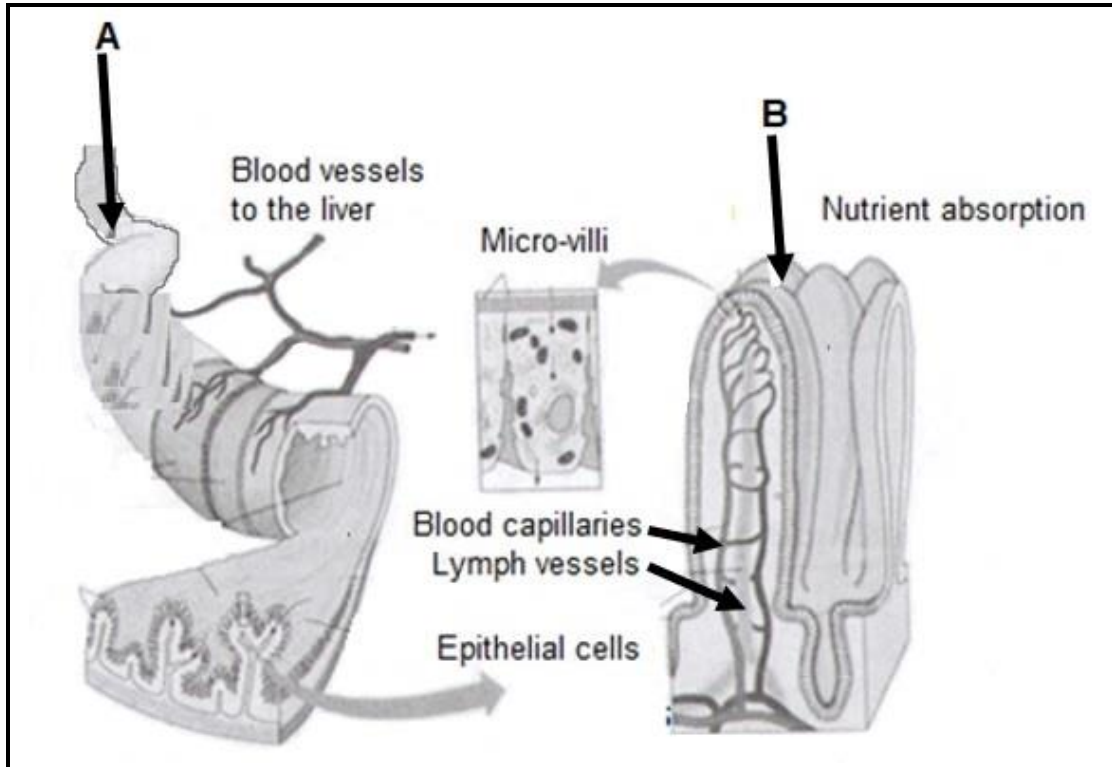
**MATSHWAO KAOFELA A KAROLO A: 45**

## KAROLO YA B

### POTSO YA 2: PHEPO YA DIPHOOFOLO

Qala potso ena leqepheng le LETJHA.

- 2.1 Tayakeramo e ka tlase e bontsha karolo e itseng ya alimenthari khanale ya phoofolo ya polasi.



- 2.1.1 Fana ka lebitso la karolo ya alimenthari khanale e leibetsweng **A**. (1)
- 2.1.2 Fana ka matshwao a MABEDI a adapoteishene a bonahalang ilasetereisheng e ka hodimo a dumellang karolo ya **B** ho etsa mosebetsi wa yona. (2)
- 2.1.3 Bontsha nyutriente e monngwang ka setho ka seng ho tse latelang:
- (a) Dilymph vesele (1)
  - (b) Diblood capillari (1)
- 2.1.4 Lera le ka hare la karolo e boletsweng ho POTSO YA 2.1.1 le menehile. Hlalosa hore ho meneha hoo ho ntshetsa pele jwang abosoposhene ya dijo. (2)

- 2.2 Theibole e ka tlase e bontsha dikhomponente tsa dijo tsa diphoofolo ho reishene.

KHOMponente YA DIJO TSA DIPHOOFOLO	KHWANTITHI (kg)
Phofo ya poone	50
Yuria	5
Lusene hei	70
Outi hei	40
Molases	30

- 2.2.1 Hlwaya tse latelang ho tswa theiboleng ya reishene e ka hodimo:

- (a) Energy-rich khonsentreithi (1)
- (b) Protein-rich rafeji (1)

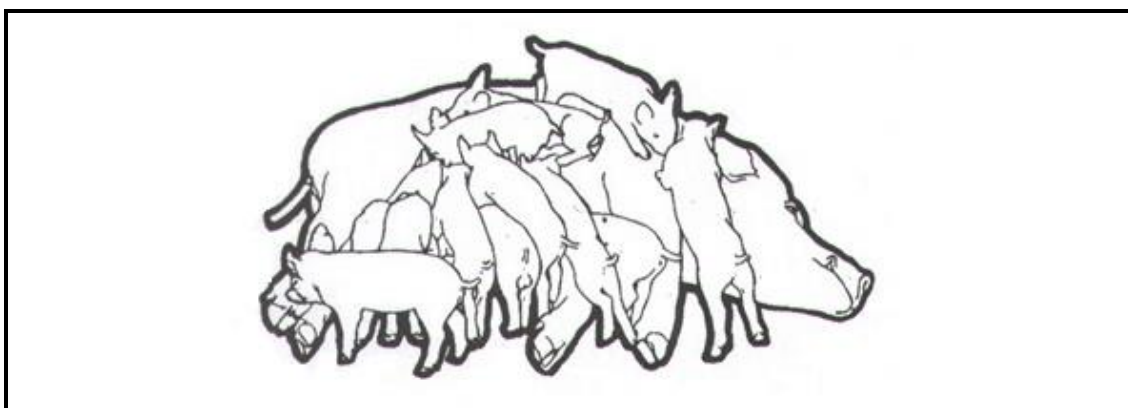
- 2.2.2 Fana ka mofuta wa phoofolo o ka sebedisang reishene e ka hodimo ka katleho. (1)

- 2.2.3 Hlalosa karabo ya POTSO YA 2.2.2 o ikamahantse le khompozeshene ya reishene ha mmoho le matshwao a adapoteishene a phoofolo. (2)

- 2.2.4 Hlwaya khomponente ya reishene e ka hodimo e ka ntlafatsang tatso le ho thuseha ya outi hei. (1)

- 2.2.5 Sebedisa datha e theiboleng e ka hodimo ho rala bar kerafo. (6)

- 2.3 Tayakeramo e ka tlase e bontsha fariki e tshehadi le madinyane a yona.



- 2.3.1 Bolela lebitso la minerale elemente e ka fokolang ha fariki ya motswetse le madinyaneng a yona di dula ka tlong e samentilweng fatshe. (1)

- 2.3.2 Hlwaya letshwao le le LENG la kgaello ya minerale le boletsweng ho POTSO YA 2.3.1. (1)

- 2.3.3 Hlwaya tsela eo ka yona kgaello ya minerale ena fariking ya motswetse le madinyane a yona e ka sapolimentwang ka yona. (1)



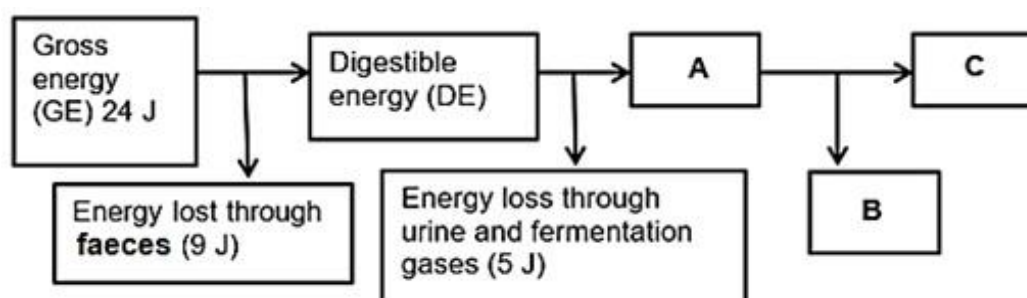
2.4 Phoho ya poone le dijo tsa sunflower oilcake di tswakilwe ka reshio ya 8 : 20 ho fumana motswako wa dijo o nang le 17% ya khontente ya poroteini e thumisehang.

2.4.1 Hlwaya karolo ya reshio e bontshang dijo tsa sunflower oilcake. (1)

2.4.2 Hlalosa karabo ya POTSO YA 2.4.1. (2)

2.4.3 Khalekhuleitha diperesente tsa dijo tsa diphoofolo tse nang le khabohaedreithi e ngata motswakong. Bontsha dikhalekhuleishene tsohle. (3)

2.5 Flo tjhate e ka tlase e bontsha boleng ba eneji ya dijo tsa diphoofolo.



2.5.1 Hlwaya tahlehelo ya eneji ho **B**. (1)

2.5.2 Eneji e ho **C** e bohlokwa diphoofolong tsa polasi. Nnetefatsa polelo ena ka mabaka a MABEDI. (2)

2.5.3 Khalekhuleitha boleng ba eneji e bontshitweng ka **A**. (2)

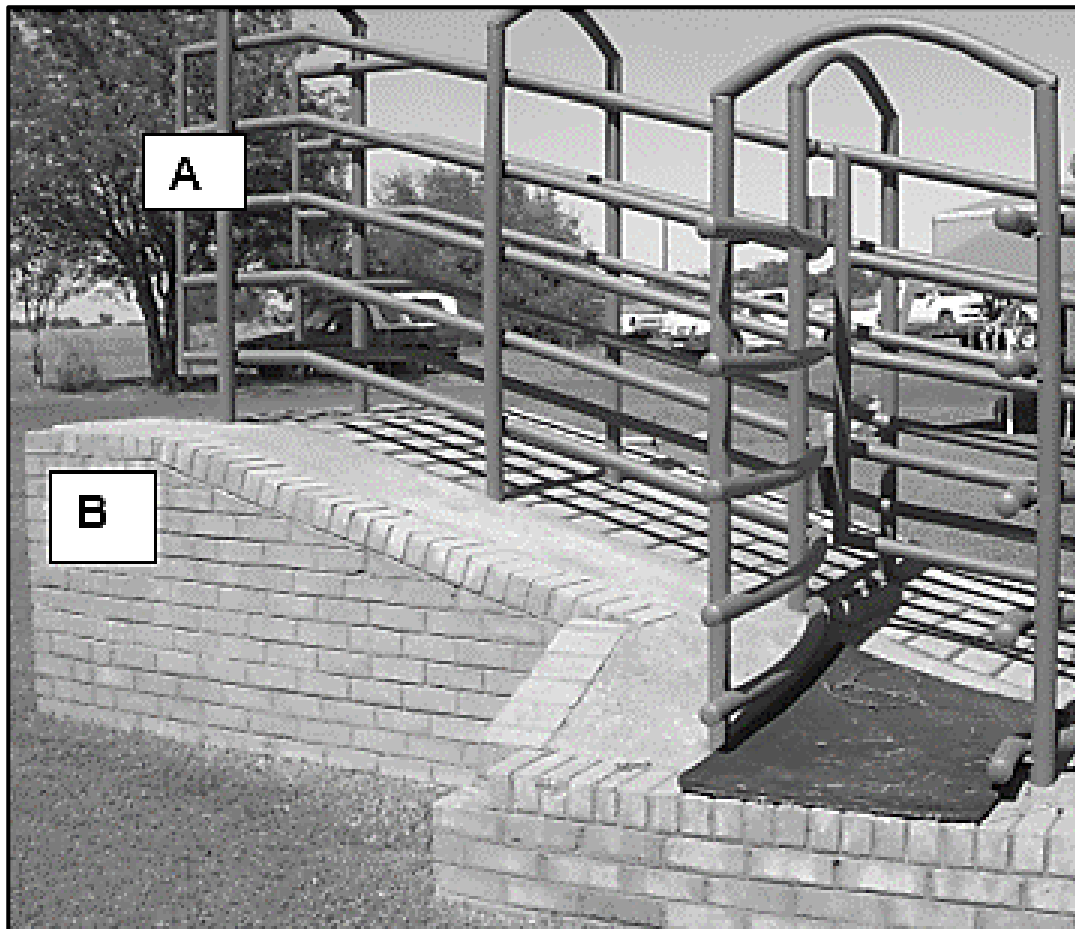
2.5.4 Fana ka maikemisetso a MABEDI a ho khalekhuleitha boleng ba eneji ya dijo tsa diphoofolo. (2)

**[35]**

**POTSO YA 3: TLHAHISO YA DIPHOOFOLO, TSHIRELETSO LE TAOLO**

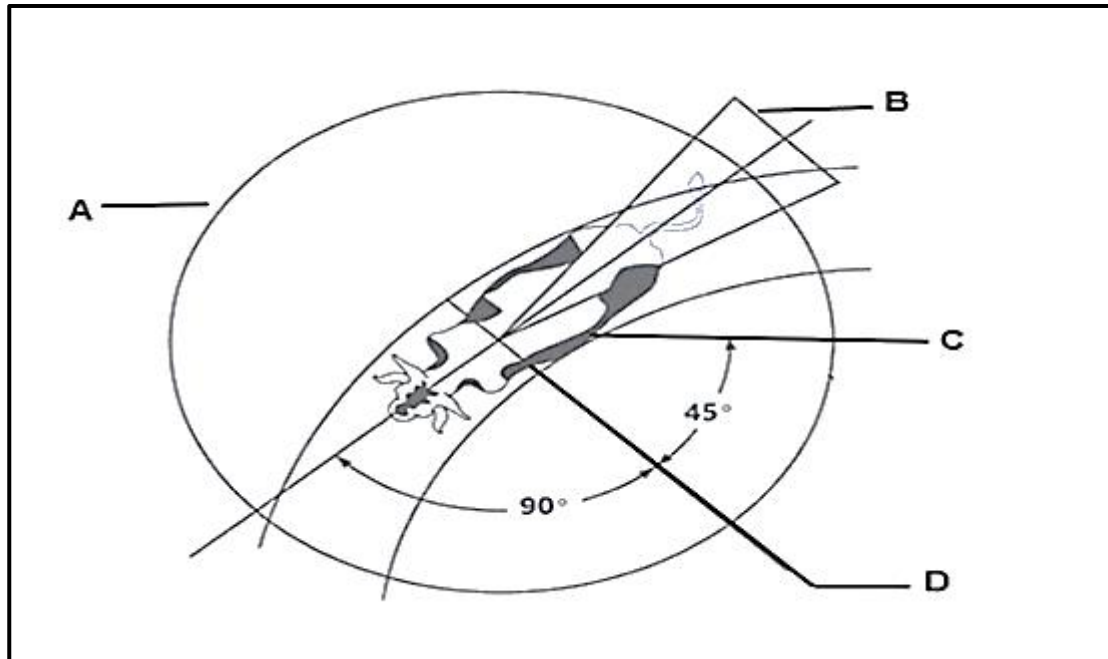
Qala potso ena leqepheng le LETJHA.

- 3.1 Setshwantsho se ka tlase se bontsha disebediswa tse sebediswang tshwarong ya diphoofolo.



- 3.1.1 Hlwaya sesebediswa se leibetsweng **B**. (1)
- 3.1.2 Bontsha sepheo sa ho sebedisa sesebediswa se leibetsweng **A**. (1)
- 3.1.3 Sesebediswa se leibetsweng **A** se fihlella mokgwa wa polokeho wa tshwaro ya diphoofolo tse kgolo. Sheba matshwao a moralo wa sesebediswa ho nnetefatsa karabo. (2)
- 3.1.4 Bolela mabaka a MABEDI a ho tshwara diphoofolo tsa polasi ho sebediswa sesebediswa se leibetsweng **A**. (2)

- 3.2. Tayakeramo e ka tlase e bontsha dibaka tse fapaneng tsa motshwari wa diphoofolo tseo a tlamehang ho di ela hloko ha a sebetsa ka diphoofolo:



- 3.2.1 Bontsha tlhaku e sebetsang boemong ka bong ho a latelang:

- (a) Distense e kgethwanng ya diphoofolo e bontshang bokotsi (1)
- (b) Ntlha ya balanse (1)
- (c) Bakeng sa motshwari ho qala tsitsinyeho. (1)

- 3.2.2 Noha boitshwari ba phoofolo ha motshwari a lebane le yona ntlheng e leibetsweng **B**. (1)

- 3.2.3 Bolela maitshwari a mang a MABEDI a tlwaelehileng a ka bontshwang ke dikgomo ha di le tlasa kगतello ya maikutlo. (2)

3.3 Borapolasi ba diphoofolo ba sebedisa meaho e fapaneng ho sireletsa le ho etsa matlo a diphoofolo tsa polasi.

3.3.1 Hlwaya sepheo sa ho sebedisa moaho ka mong ho e latelang:

(a) Holding pen (1)

(b) Farrowing pen (1)

(c) Holding shed (1)

3.3.2 Bolela mabaka a MARARO a ho dudisa diphoofolo tsa polasi ka meahong. (3)

3.4 Theibole e ka tlase e bontsha mafu a ka tshwarang diphoofolo polasing.

MAFU	PATHOJENE	LETSHWAO YA MANTLHA	MOKGWA WA NEHELETSANO	MOKGWA WA THIBELO
<b>A</b>	Vaerase	Ho dutla mathe a mangata le bohale	Ho longwa ke phoofolo e tshwaetsehileng	ente
Mastitisi	<b>B</b>	<b>C</b>	Ditshintshi	Mekgwa e metle ya bohlweki
<b>D</b>	Porotozoa	Letshollo le bobebe	Ho ja dijo tse silafaditsweng ke manyolo	<b>E</b>

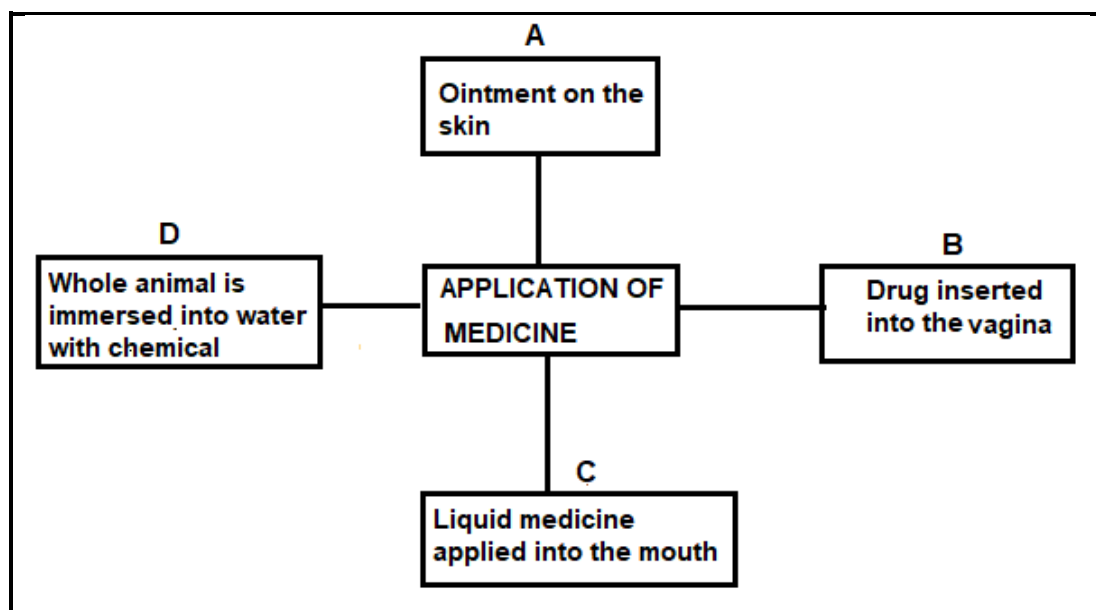
3.4.1 Leibela **A**, **B**, **C**, **D** le **E**. (5)

3.4.2 Bontsha karolo e bapalwang ke tse latelang taolong ya mafu a diphoofolo:

(a) Rapolasi (1)

(b) Mmuso wa naha (1)

- 3.5 Flo dayakeramo e ka tlase e bontsha tsela tse fapaneng tsa ho fana ka meriana diphoofoolong.



- 3.5.1 Bolela mekgwa ya ho fana ka meriana diphoofoolong jwalo ka ha ho bontshitwe ho **A**, **B** le **D**. (3)

- 3.5.2 Bontsha tlhaku e emetseng mokgwa o sebediswang ho phekola tse latelang:

- (a) Roundworm (1)
- (b) Blue ticks (1)

- 3.5.3 Bolela tsela tse PEDI tse bang meriana e ka sebediswa ka tsela e tsitsitseng. (2)

- 3.6 Dimela tse nang le tjhefo di ka ba kotsi diphoofoolong hobane di ka bolaya diphoofoolo ha ho ka etsahala tsa jewa ke diphoofoolo.

- 3.6.1 Bolela lebitso la semela se le SENG se nang le tjhefo seo ha ngata se fumanehang makgulong. (1)

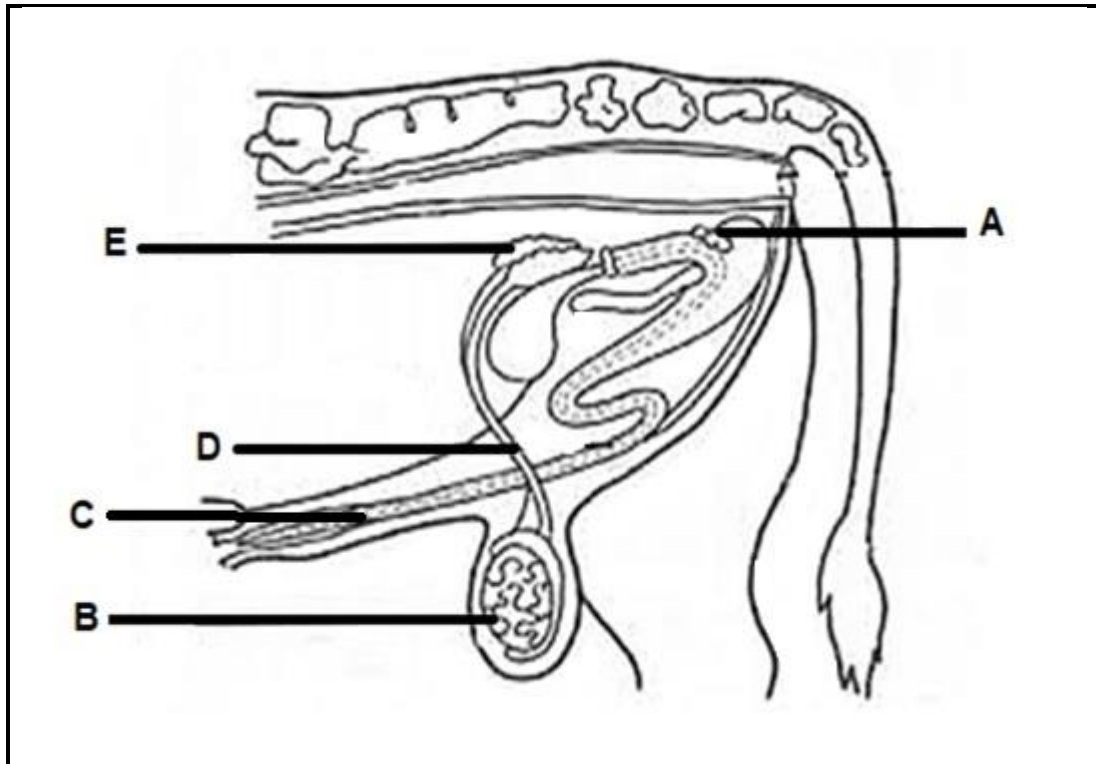
- 3.6.2 Bolela tsela tse PEDI tseo rapolasi a ka di disebedisang ho laola tjhefo ya dimela makgulong. (2)

**[35]**

## POTSO YA 4: ANIMALE REPORODAKESHENE

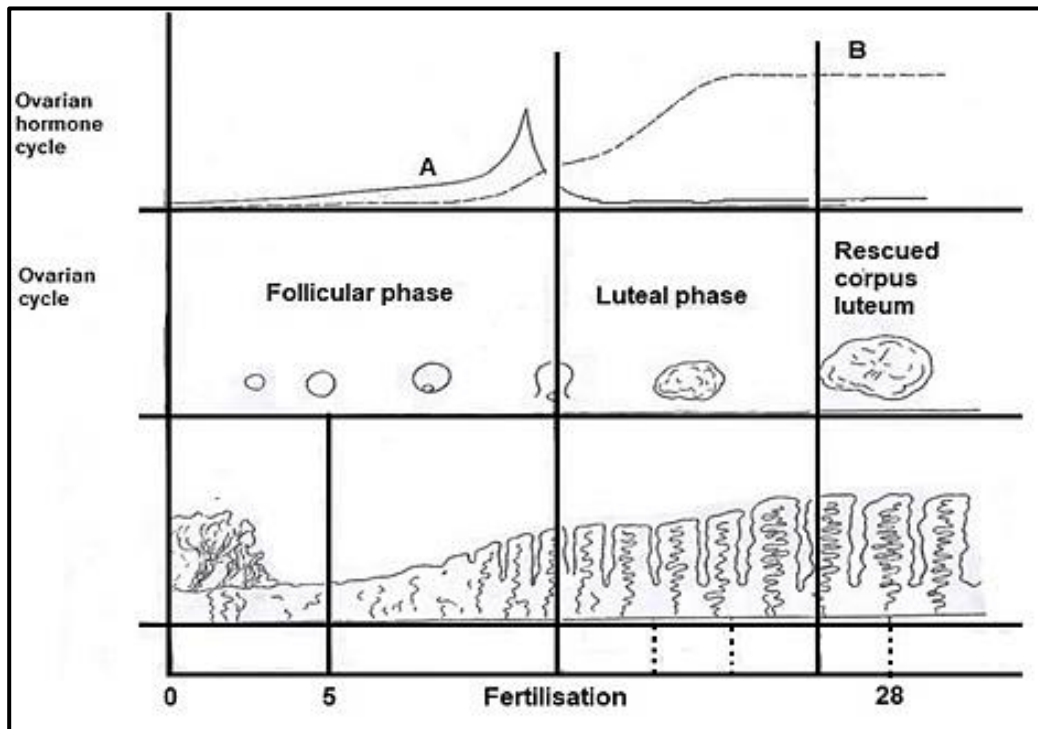
Qala potso ena leqepheng le LETJHA.

- 4.1 Tayakeramo e ka tlase e bontsha reporodakethivu sistimo ya phoofolo ya polasi.



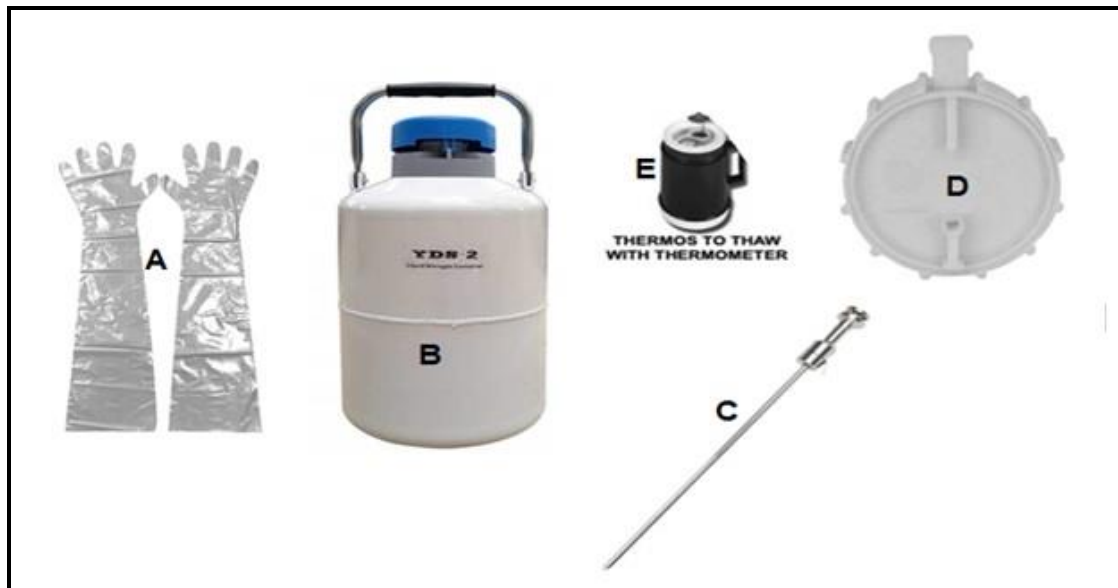
- 4.1.1 Hlwaya tlhaku e emetseng karolo moo e nngwe le e nngwe ya tse latelang e etsahalang ho yona:
- (a) Ho fetjwa ha disele tsa disepemo ka disele tsa SETOLI nakong ya sepemathojenesisi. (1)
  - (b) Ho tsamaiswa ha disele tsa disepemo ho ya ho yurethra. (1)
  - (c) Sekirishene ya mokedikedi o namathelang o fanang ka enoji ho disele tsa disepemo. (1)
- 4.1.2 Bolela dipha tse PEDI tsa khonjenithale ho karolo ya **B**, tse ka bakang infethilithi e phethahetseng dipohong. (2)
- 4.1.3 Bontsha karolo e bapalwang ke karolo ya **C** ho reporodakeshene. (1)

- 4.2 Tayakeramo e ka tlase e bontsha tshusumetso ya dihomounu tse ntshwang nakong ya saekele ya ustrase.



- 4.2.1 Bontsha nako ya ustrase saekele e bontshitsweng ka hodimo. (1)
- 4.2.2 Hlwaya dihomounu tse bontshitsweng ho **A** le **B**. (2)
- 4.2.3 Bontsha tse latelang nakong ya mokgahlelo wa folikhula:
- (a) Mokgahlelo wa ustrase saekele (1)
  - (b) Homounu e ikarabellang (1)
- 4.2.4 Bolela mesebetsi e MMEDI ya homounu e leibetsweng **B** ha kgomo e tshehadi e ho ustrase saekele ka hodimo e emara. (2)

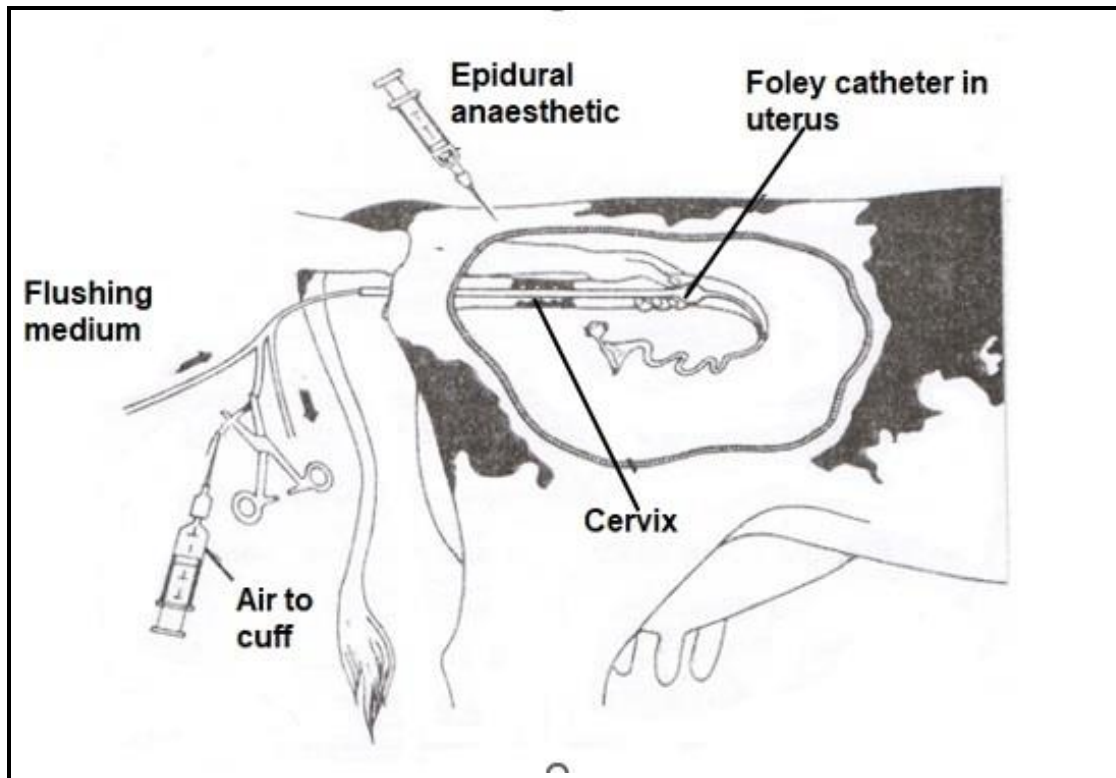
- 4.3 Disebediswa tse ka tlase di sebediswa ha ho etsuwa athifisheale insemineishene.



- 4.3.1 Bontsha sepheo sa ho sebedisa sesebediswa se leibetsweng **C**. (1)
- 4.3.2 Bolela ditlhoko tse PEDI tsa mantlha ha ho sebediswa sesebediswa se leibetsweng **B**. (2)
- 4.3.3 Hlwaya tlhaku ya disebediswas e nnetefatsang tse latelang:
- (a) Simene ha e silafatswe ka diphathojene ke insemineithara (1)
  - (b) Simene e loketse ho sebediswa ka mora hore e bolokwe leqhweng (1)
- 4.3.4 Bolela tsietsi e LE NNGWE ya ho sebedisa sesebediswa se ho POTSO YA 4.3 ho rapolasi. (1)
- 4.3.5 Bolela melemo e MMEDI ya athifishiale insemineishene. (2)



- 4.4 Ayakeramo e ka tlase e bontsha tshebetso e latelwang ha ho etsuwa embiriyo teransfe.



- 4.4.1 Hlwaya tshebetso e bontshitsweng ka hodimo. (1)
- 4.4.2 Bontsha mofuta wa kgomo moo tshebetso e ka hodimo e etsuwang ho yona. (1)
- 4.4.3 Bolela lebaka la ho sebedisa mofuta wa kgomo o boletsweng ho POTSO YA 4.4.2. (1)
- 4.4.4 Bolela sepheo se le SENG sa thekiniki e sebedisitsweng ho tshebetso e bontshitsweng ka hodimo. (1)
- 4.4.5 Bolela ditsietsi tse PEDI tsa thekiniki ena ho rapolasi. (2)

- 4.5 Flo tjhate e ka tlase e bontsha tsela e tsamauwang ke lebese ho tloha moo le etsuwanng teng ho fihlela moo le tswang teng ha e nyantsha kapa e hangwa.

Teat cistern → Milk ducts → Alveolus → Teat canal → Gland cistern

- 4.5.1 Hlophisa botjha ka tatellano mekgahlelo eo lebese le tla e latela ho tloha moo le etsuwanng ho ya ho hangweng kapa ho nyantsheng. (5)

- 4.5.2 Bontsha tse latelang ho ya ka porosese ya milk let-down:

(a) Distimuli tse PEDI tse qalang porosese (2)

(b) Homounu e amehang (1)

[35]

**MATSHWAO A KAROLO B: 105**

**MATSHWAO KAOFELA: 150**