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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.

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DITAELO LE TLHAHISOLESEDING

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.

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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 daejeseshene 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 tjhentjha 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.

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

(i) Diphoofolo tse sa tshwaneng di tlameha ho tsamaiswa mmoho.
(ii) Diphoofolo tse emereng le tse lemetseng ha di a tlameha ho tsamaiswa.
(iii) Diphoofolo tsa bong bo fapaneng le dilemo tse fapaneng di tlameha ho arolwa.
(iv) Ho letsa molodi le ho phatlola diphadi ha ho tsamaiswa diphoofolo 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 vajaena.
B intromeshene ho vajaena.
C erekeshene ya phenisi e stimuleithilweng ke diferomouni.
D ho tlolelwa ha phoofolo e tshehadi 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)

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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)

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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

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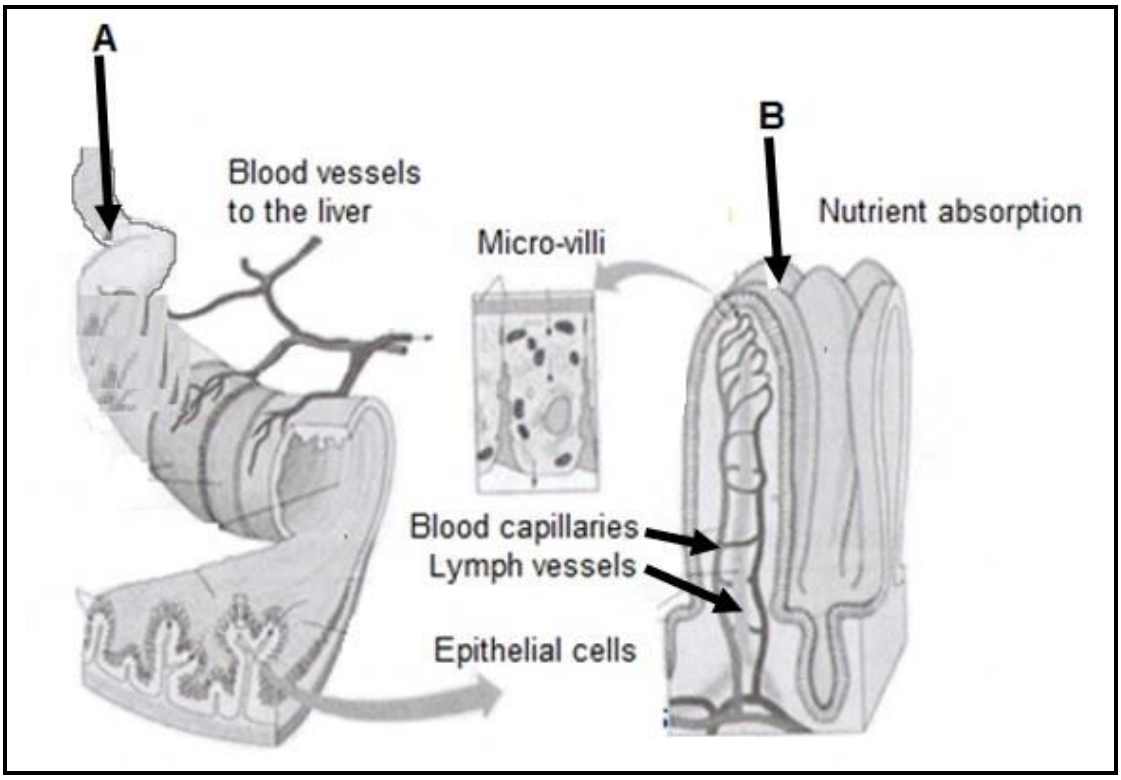
KAROLO YA B

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)

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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)

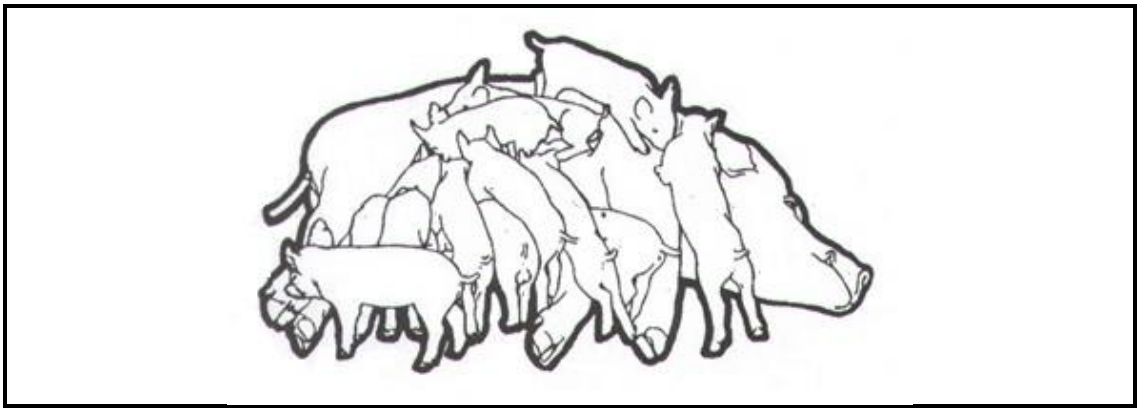
2.2.2 Fana ka mofuta wa phoofolo o ka sebedisang reishene e ka hodimo ka katleho. (1)

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 thuiseha 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)

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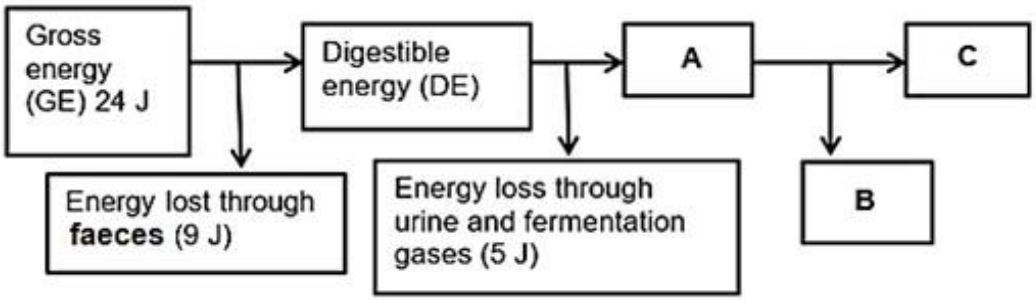
2.4 Phofo ya poone le dijo tsa sunflower oilcake di tswakilwe ka reshio ya 8 : 20 ho fumana motswako wa dijo o nang le 17% ya khontente ya poroteini e thumisehang.

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)

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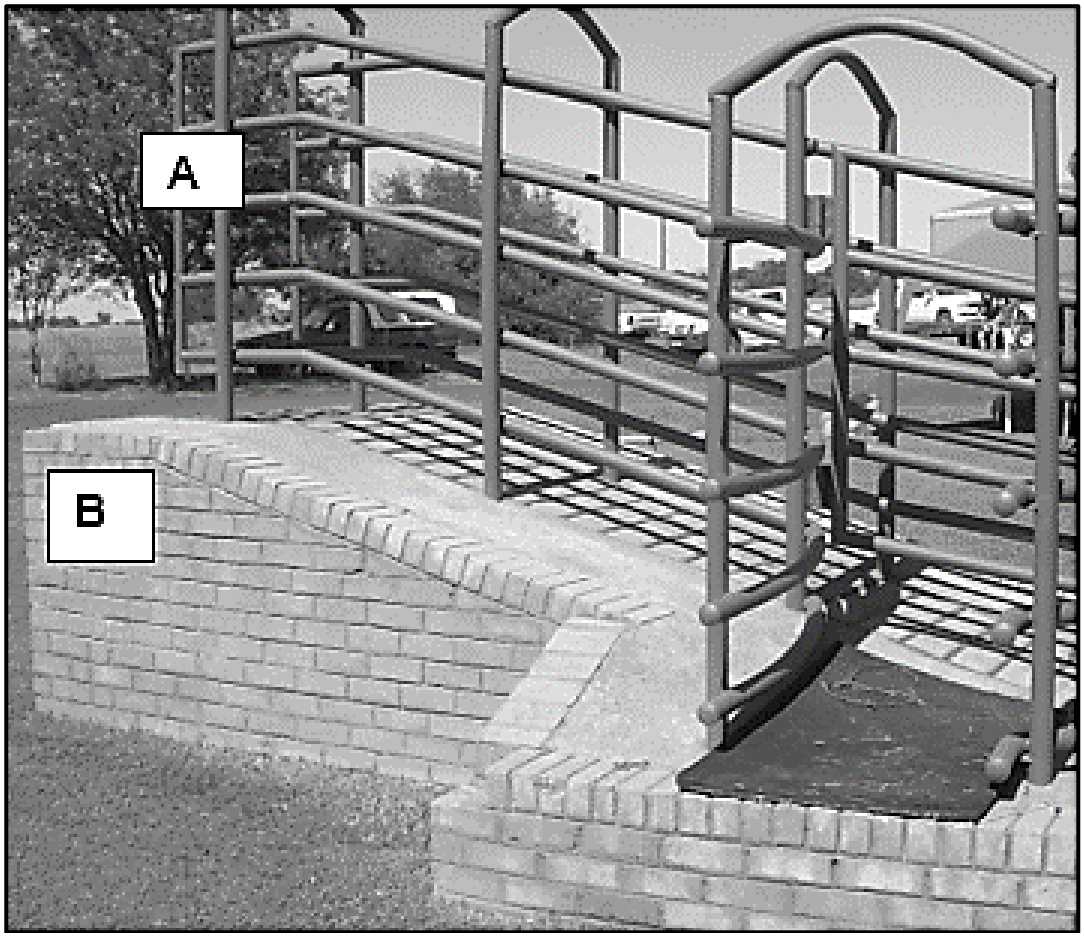
POTSO YA 3: TLHAHISO YA DIPHOOFOLO, TSHIRELETSO LE TAOLO

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)

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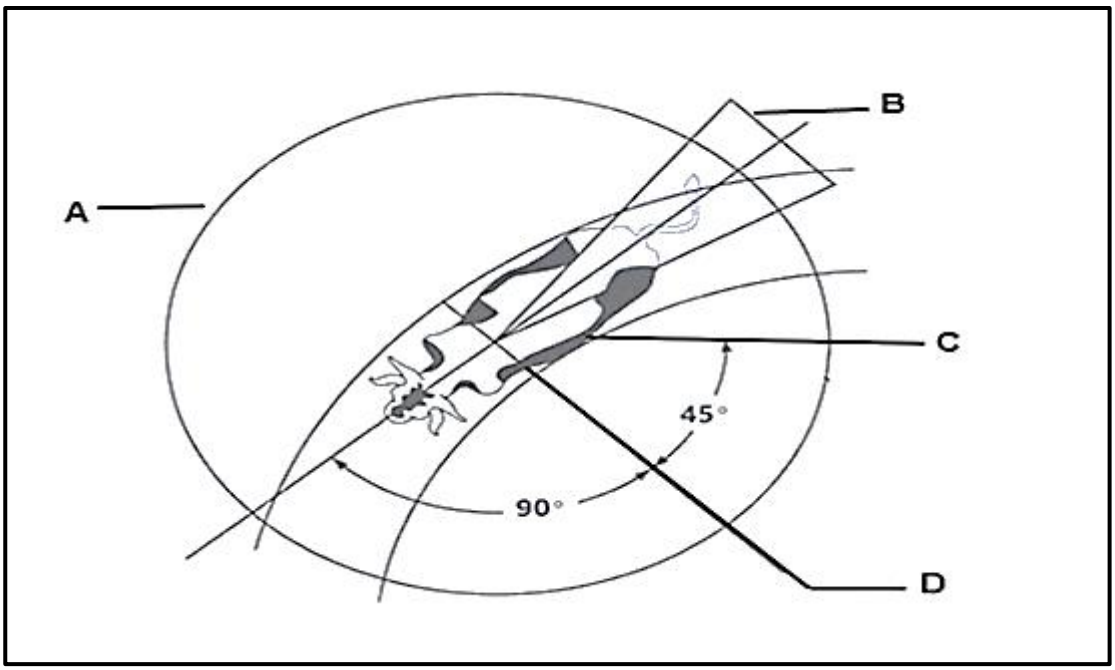
3.2. Tayakeramo e ka tlase e bontsha dibaka tse fapaneng tsa motshwari wa diphoofolo tseo a tlamehang ho di ela hloko ha a sebetsa ka diphoofolo:



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

(a) Distense e kgethwang ya diphoofolo e bontshang bokotsi (1)

(b) Ntlha ya balanse (1)

(c) Bakeng sa motshwari ho qala tsitsinyeho. (1)

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

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

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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
A	Vaerase	Ho dutla mathe a mangata le bohale	Ho longwa ke phoofolo e tshwaetsehileng	ente
Mastitisi	**B**	**C**	Ditshintshi	Mekgwa e metle ya bohlweki
D	Porotozoa	Letshollo le bobebe	Ho ja dijo tse silafaditsweng ke manyolo	**E**

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)

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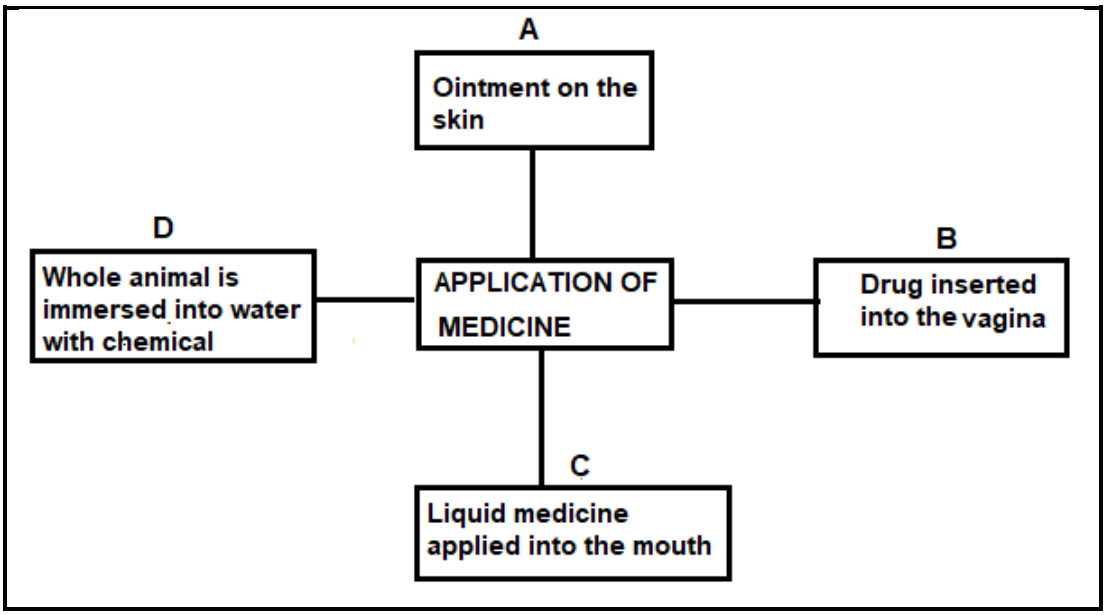
3.5 Flo dayakeramo e ka tlase e bontsha tsela tse fapaneng tsa ho fana ka meriana diphoofolong.



3.5.1 Bolela mekgwa ya ho fana ka meriana diphoofolong 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 diphoofolong hobane di ka bolaya diphoofolo ha ho ka etsahala tsa jewa ke diphoofolo.

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)

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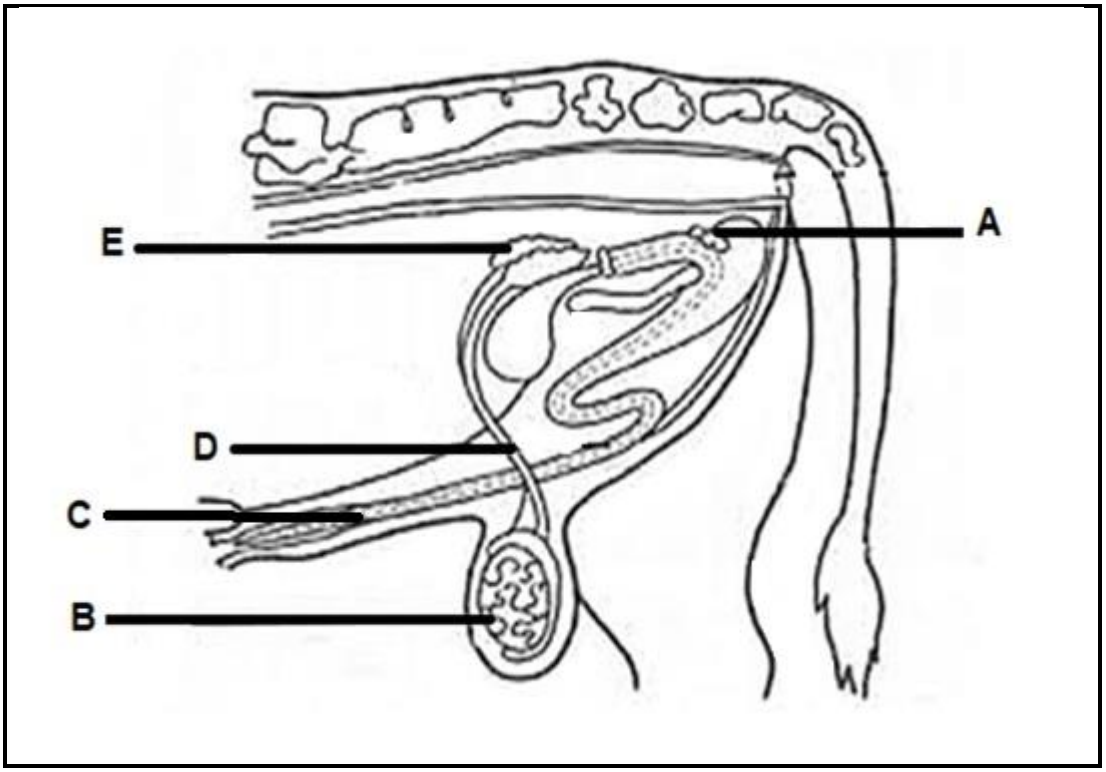
POTSO YA 4: ANIMALE REPORODAKESHENE

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 eneji 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)

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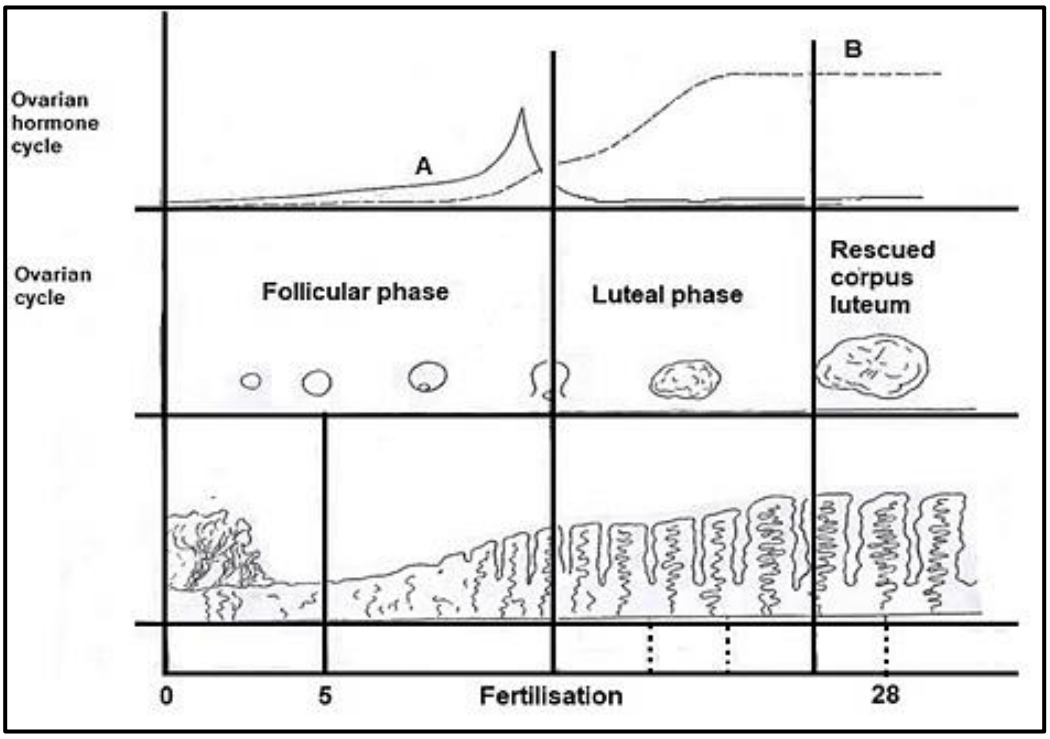
4.2 Tayakeramo e ka tlase e bontsha tshusumetso ya dihomounu tse ntshwang nakong ya saekele ya ustrase.



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)

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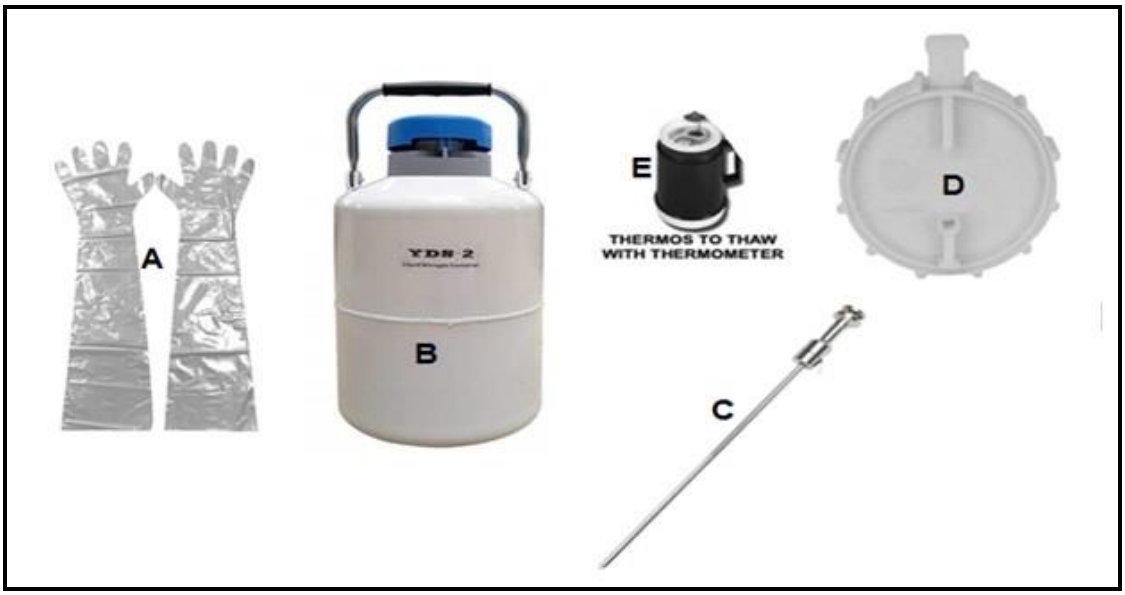
4.3 Disebediswa tse ka tlase di sebediswa ha ho etsuwa athifisheale insemineishene.



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)

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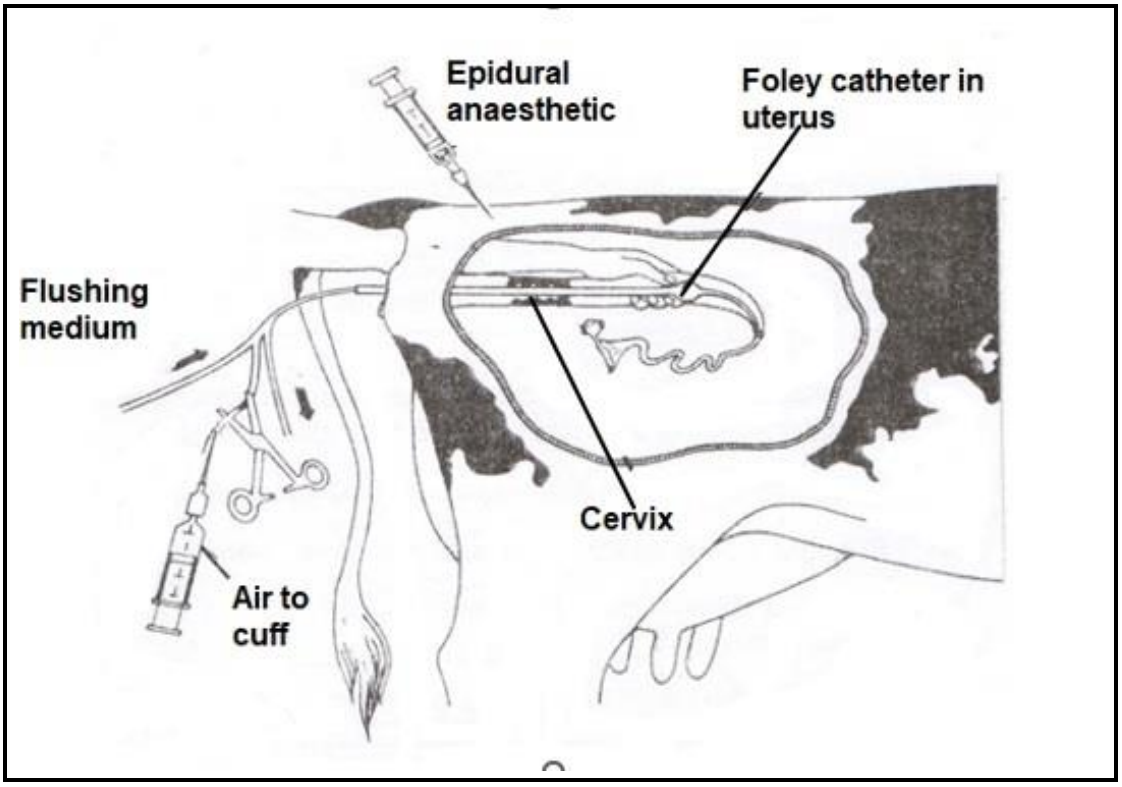
4.4 Ayakeramo e ka tlase e bontsha tshebetso e latelwang ha ho etsuwa embiriyo teransfe.



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 bonsthitsweng ka hodimo. (1)

4.4.5 Bolela ditsietsi tse PEDI tsa thekiniki ena ho rapolasi. (2)

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4.5 Flo tjhate e ka tlase e bontsha tsela e tsamauwang ke lebese ho tloha moo le etsuwang 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 etsuwang 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)

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MATSHWAO A KAROLO B: 105
MATSHWAO KAOFELA: 150

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