



Province of the
EASTERN CAPE
EDUCATION



**NATIONAL
SENIOR CERTIFICATE**

IBANGA 12

SEPTEMBER 2022

**SAYENSI YEZOLIMO (AGRICULTURAL
SCIENCES) P1
ISIKHOKELO SOKUMAKISHA**

AMANQAKU: 150

Esi sikhokelo sokumakisha sinamaphepha ali-10.

ICANDELO A**UMBUZO 1**

1.1	1.1.1	B ✓✓		
	1.1.2	D ✓✓		
	1.1.3	C ✓✓		
	1.1.4	A ✓✓		
	1.1.5	B ✓✓		
	1.1.6	B ✓✓		
	1.1.7	A ✓✓		
	1.1.8	D ✓✓		
	1.1.9	B ✓✓		
	1.1.10	A ✓✓	(10 x 2)	(20)
1.2	1.2.1	B qha ✓✓		
	1.2.2	A qha ✓✓		
	1.2.3	Ayikho ✓✓		
	1.2.4	Ngu A kunye no B ✓✓		
	1.2.5	A qha ✓✓	(5 x 2)	(10)
1.3	1.3.1	yibile juice ✓✓		
	1.3.2	yibunching/swarming ✓✓		
	1.3.3	yionovulation ✓✓		
	1.3.4	siscrotum/Cremaster muscles ✓✓		
	1.3.5	yidropsy ✓✓	(5 x 2)	(10)
1.4	1.4.1	yiether extract ✓		
	1.4.2	yitopical ✓		
	1.4.3	yichin-ball marker ✓		
	1.4.4	yipistollete ✓		
	1.4.5	yiembryo flushing ✓	(5 x 1)	(5)

AMANQAKU EWONKE ECANDELO A: 45

ICANDELO B**UMBUZO 2: UKODLIWA KWEZILWANYANA****2.1 Iiphakathi zezilwanyana**

- 2.1.1 **Igama lesilwanyana**
lhagu ✓ (1)
- 2.1.2 **Isizathu**
Inesisu esinye ✓ (1)
- 2.1.3 **Chaza ukuba unombolo A wehagu wehluke kanjani kowenkukhu**
Idlelo lenkukhu limtya omile ekwebhegi yona eyehagu ayinamtya . ✓ (2)
- 2.1.4 **Ukukhomba inombolo**
(a) **Ukukhutshwa kwereinin – B** ✓ (1)
(b) **Ukugcinwa kwevitamins ezisebenzayo – C** ✓ (1)
- 2.1.5 **Isizathu sokuba isisu sehagu singakwazi ukucola amadiza**
Isisu sinye ✓ ayina rumen micribes zokucola amadiza ✓ (2)

2.2 Iiprosesi ezibandakanya idigestion

- 2.2.1 **Hlenga-hlengisa**
D ✓
A ✓
E ✓
C ✓
B ✓ (5 x 1) (5)
- 2.2.2 **Nika istructure esenza iarbsoption**
Villi ✓ (1)

2.3 Intlobo zokutya kwezilwanyana

- 2.3.1 **Ukuklasifaywa kokutya**
FEED A – Roughage ✓
FEED B – Concentrates ✓ (2 x 1) (2)
- 2.3.2 **Ukukhomba ukutya**
(a) **Feed B/concentrates** ✓ (1)
(b) **Feed A/roughage** ✓ (1)
(c) **Feed B/concentrates** ✓ (1)

2.3.3 Khaltyhulayshini yenustritive ratio kafeed A

$$NR = 1 : \frac{\% TDN - \% DP}{\% DP} \checkmark$$

$$1 : \frac{56\% - 6\%}{6\%} \checkmark$$

$$1 : 8,33 \checkmark$$

OKANYE

$$NR = 1 : \frac{\% DNNS}{\% DP} \checkmark$$

$$1 : \frac{50\%}{6\%} \checkmark$$

$$1 : 8,33 \checkmark$$

(3)

2.4 Ukucolwa kwehabile

2.4.1 khaytyhulation yedigestibility co-efficient kwihabile

$$DC = \frac{\text{Dry material intake (kg)} - \text{dry mass of manure (kg)}}{\text{Dry material intake (kg)}} \times \frac{100}{1} \checkmark$$

$$= \frac{12 \text{ kg} - 5 \text{ kg}}{12 \text{ kg}} \times \frac{100}{1} \checkmark$$

$$= 58,3 \checkmark \% \checkmark$$

(4)

2.4.2 Isupplementi IBENYE yokwandisa incas nokucolwa kwehabile

- Ukusupplementa nge molasses ✓
- Ukusupplementa nge NPN ✓

(Zibe 1 x 1) (1)

2.5 Ukunqongophala kwezinongo

2.5.1 Nika impawu zokunqongophala

ANIMAL A – yigoitre ✓

ANIMAL B – yicurled-toe paralysis ✓

(2 x 1) (2)

2.5.2 Nika isinongo esinqongopheleyo

ANIMAL A – yiodine ✓

ANIMAL B – yivitamin B2/riboflavin ✓

(2 x 1) (2)

2.5.3 Ukutya yokulungisa lemeko iku animal A yiMarine salt ✓

(1)

2.6 Ifodder flow**2.6.1 Zingaphi inyanga idlelo lingenakutya**

3 yenyanga ✓

(1)

2.6.2 Khatyhulatha okona kutya kufunekayo apha ku May

Number of animals x requirement/kg/day x 31

= 100 x 5 kg x 31 ✓

= 155 00 kg ✓

(2)

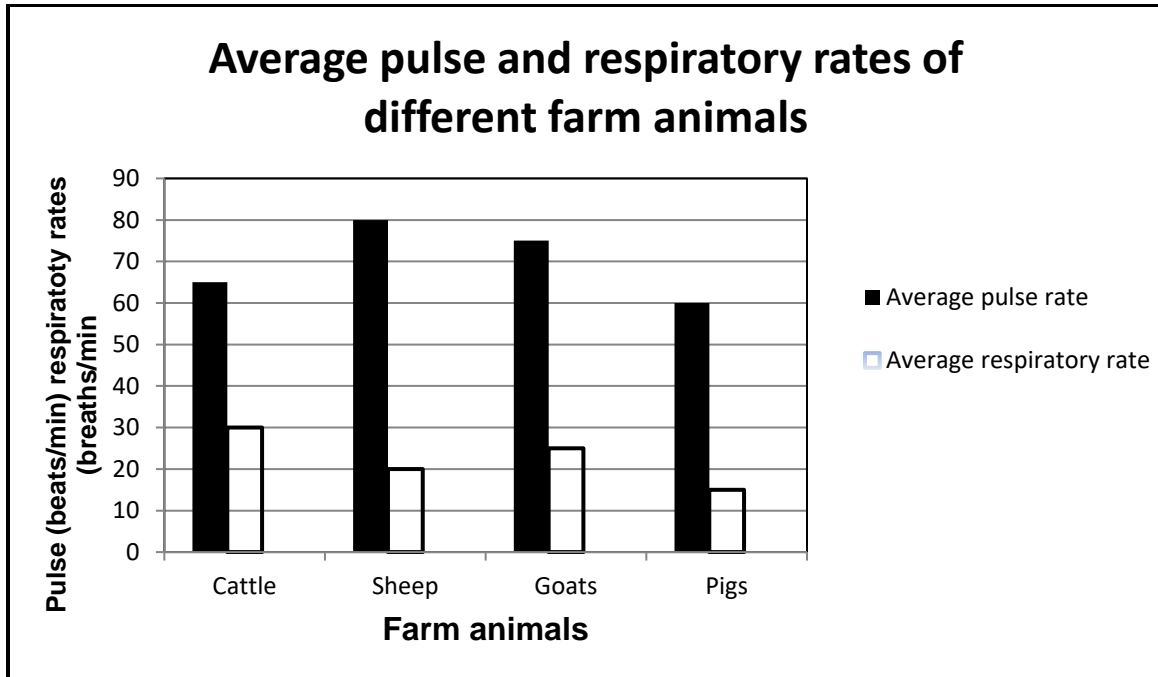
[35]

UMBUZO 3: UKUVELISWA NOKULAWULWA KWEZILWANYANA

- 3.1 Ukwandiswa kwemveliso kwi production unit**
- 3.1.1 Khomba iproduction unit**
yiproductio unit B ✓ (1)
- 3.1.2 Izizathu eziBINI**
- Ukukhwelisa ngenjongo zokwandisa imveliso ✓
 - Ukukhwelisa ngenjongo zokwandisa ingeniso ✓ (2)
- 3.1.3 Ihousing structures zibeMBINI kuproduction unit B**
- yiholding shed ✓
 - yifeed shed ✓
 - yiholding pen ✓ (Zibe 2 x 1) (2)
- 3.1.4 Izizathu zibe ZIBINI zokucacisa ungenelelo oluncinci ku A**
- ukukhwelisa kwenzeka kwindawo eqhele kuyo isilwanyana t ✓
 - izilwanyana zixhomekeke emithini ukukhusela amaqondo obushushu ✓
 - zibhuqisa ingca kuphela ✓ (Zibe 2 x 1) (2)
- 3.2 Nika igama lesilwanyana esizibonalisa ngohlobo olulandelayo xa siphantsi koxinzelelo**
- (a) **ipawing** – yinkomo ✓ (1)
- (b) **isnout rubbing** – yihagu ✓ (1)
- (c) **ifeigned charging movements** – yinkomo ✓ (1)
- 3.3 Into ibeNYE efunekayo xa uwelisa imfuyo indlela ukuphatha iaphu elibomvu ✓ (1)**
- 3.4 Izixhobo zokubamba izilwanyana**
- 3.4.1 Chaza isizathu sokusebenzisa esisixhobo**
- A** – yibranding ✓
- C** – yicastrating/tail docking ✓ (2 x 1) (2)
- 3.4.2 Izizathu eziBINI zokusebenzisa esisixhobo**
- kulula ukusebenza ✓
 - ixabiso liphantsi ✓
 - ayiphumi gazi ✓
 - imempilo ✓ (Zibe 2 x 1) (2)
- 3.4.3 Igama lesixhobo**
- B** – yidrenching gun/yidosing gun ✓ (1)
- 3.4.4 Imiqathango emiBINI yokubamba izilwanyana**
- sukugxola xa ubamba izilwanyana ✓
 - sukujingisa ilaphu phezulu uphazamisa izilwanyana ✓
 - sukuqala ngemva xa ubamba isilwanyana ✓
 - thethela phantsi ✓
 - sukudibanisa izilwanyana ezikhulu nezincinci ✓
 - sebenzisa izixhobo ezilungele oko ✓
 - sebenzisa icrush evulekileyo ukuze zingagilani ✓
 - zivulele indlela yokuphuma unagaphazamisanga ✓
 - ziveze ukuba ukho xa uzakubamba izilwanyana ungachwechwi kuba uzakuzetthusa ✓ (Zibe 2 x 1) (2)

3.5 Iaverage pulse nerespiratory rate yezilwanyana ezahlukeneyo

3.5.1 IBar graph



Criteria/rubric/marking guideline

- Correct heading ✓
- x-axis: Correctly calibrated and labelled (Farm animals) ✓
- y-axis: Correctly calibrated and labelled (Pulse rate and respiratory rate) ✓
- Bar graph ✓
- Accuracy ✓
- Correct units (Heart beats/min and breaths/min) ✓ (6)

3.5.2 Explanation of the trend

Ipulse rate iyakhawuleza ✓ xa iyiqhathanisa ne respiratory rate kuzo zonke izilwanyana (2)

3.6 Ilife cycle yezimfifithi

3.6.1 Iklasifikashini yezimfifithi

Ezangaphakathi ✓
Igama
Intshulube emcaba ✓ (2)

3.6.2 Impawu ezibonakayo

Proglottids ✓ (1)

3.6.3 Ukunyangwa kwezilwanyana ezigaxeleke kwizimfifithi

ukusezwaa ianthelmintics/de-wormers ✓ (1)

3.7 Izifo zezilwanyana efama**3.7.1 Nika ipathogeni**

B – bhaktheriya ✓

C – fangi i ✓

(2)

3.7.2 Igama lesifo

A – Red water ✓

D – Rift Valley Fever ✓

(2)

3.7.3 Ukuchongwa kwenombolo yempawu zesifo esenziwa yibluetick

A ✓

(1)

[35]

UMBUZO 4: UKUKHIQIZWA KWEZILWANYANA**4.1 Ispermatogenesis**

- 4.1.1 **Igama lelungu**
itestis ✓ (1)
- 4.1.2 **Ukuchongwa kwe celi**
A – yiprimary spermatocyte ✓
C – sispermatids ✓ (2)
- 4.1.3 **Uhlobo lwe cell division**
yimeiosis 2 ✓ (1)
- 4.1.4 **Igama lelungu** (1)
(a) yiacrosome ✓ (1)
(b) yimitochondrion ✓
- 4.1.5 **Nika zibeMBINI izifanantonye phakathi kwe spermatogenesis ne oogenesis**
• zikhupha ihaploid cell ngenxa yemeiosis ✓
• zombini zikhupha isex cells ✓ (2 x 1) (2)

4.2 Umkhuba wokukhwela kwenkunzi

- 4.2.1 **Ihormone elawula ukukhwela kwenkunzi**
yitestosterone ✓ (1)
- 4.2.2 **Isenses iziMBINI ekhuthaza uvakalelo lwenkunzi**
• sismell ✓
• yisight ✓
• yitouch ✓ (Zibe 2 x 1) (2)

4.3 Izigaba zokuzala

- 4.3.1 **Chonga iprosesi**
yiparturition ✓ (1)
- 4.3.2 **Igama lesigaba**
A – yiexpulsion/ejection of the placenta ✓
B – yipreparatory stage ✓
C – yiejection/expulsion of the foetus ✓ (3)
- 4.3.3 **Ihormone eyenza icorpus luteum ibuye umva**
Prostaglandins ✓ (1)

4.3.4 Impawu zibeMBINI ezibonakalayo xa inkomo izakuzala

- ivulva iyadumba iphinde ithambe ✓
- ivuza imucus strings ✓
- iyachama ikake qhoqhoqho ✓
- inkomo iyayeka ukutya ✓
- ima ecaleni esuke kwezinye inkomo ✓
- ibonakalisa impawu zokungomwabi nokubaphantsi koxinzelelo ✓
- ibele lumba kakhulu litsitse ubisi ✓
- inkomo iyazimbolambola ikhala ✓
- iqondo lobushushu bomzimba liyenyuka ✓
- ibele liyehla lijinge ✓

(Zibe 2 x 1) (2)

4.4 Artificial insemination (AI)

4.4.1 Cwangcisa ezizigaba zifumaneka kwi AI ngokulandelelana kwazo

- yisemen collection ✓
- yisemen evaluation ✓
- yisemen dilution ✓
- yisemen storage ✓

(4)

4.4.2 Nila ikhomonentsi zediyutantsi

- (a) yiegg yolk/glycerol ✓
- (b) yiantibiotics ✓
- (c) yibuffers ✓

(3)

4.4.3 Iqondo lobushushu lokugcinwa kwesemeni ixesha elide

-196 °C ✓

(1)

4.5 Ukutshintsha-tshintsha kwehormones ngexesha leoestrus cycle

4.5.1 Ukuchongwa kwehormones

- A – yifollicle stimulating hormone/FSH ✓
 C – yoestrogen ✓
 D – yoprogestrone ✓

(3)

4.5.2 Izizathu zokubaluleka kwe FSH ngexesha le oestrus cycle

- Ikhuthaza ukwenziwa kwegraffian follicles ✓
- Ukhqiqzq ioestrogen kwigraafian nfollicles ✓

(2)

4.5.3 Nika iprosesi

yiovation ✓

(1)

4.5.4 Umsebenzi we luteinizing hormone ngexesha le ovulation

Igqabuza igraafian follicles zitsho zikwazi ukukhulula iovum ✓
 to release the ovum ✓

(2)

4.5.5 Izigaba zoeustrus xa ioestrogrn ikwizinga eliphezulu kakhulu

yioestrus stage ✓

(1)

[35]

AMANQAKU ECANDELO B: 105
 AMANQAKU EWONKE: 150