Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2012

AGRICULTURAL SCIENCES P1 MEMORANDUM

MARKS: 150

This memorandum consists of 9 pages.

SECTION A

QUESTION 1.1

1.1.1	A	B	~~C~~	D
1.1.2	~~A~~	B	C	D
1.1.3	A	B	C	~~D~~
1.1.4	A	B	C	~~D~~
1.1.5	~~A~~	B	C	D
1.1.6	A	B	~~C~~	D
1.1.7	A	~~B~~	C	D
1.1.8	A	B	~~C~~	D
1.1.9	A	B	~~C~~	D
1.1.10	A	~~B~~	C	D

(10 x 2) (20)

QUESTION 1.2

1.2.1	A	~~B~~	C	D
1.2.2	~~A~~	B	C	D
1.2.3	~~A~~	B	C	D
1.2.4	A	B	C	~~D~~
1.2.5	A	B	C	~~D~~

(5 x 2) (10)

QUESTION 1.3

1.3.1 Gross Domestic Production/Gross Domestic Product √√
1.3.2 Proventriculus √√
1.3.3 Lobola √√
1.3.4 Cardiac sphincter √√
1.3.5 Docking/Tail Docking √√

(5 x 2) (10)

QUESTION 1.4

1.4.1 Gestation √
1.4.2 Villi √
1.4.3 Super ovulation √
1.4.4 Gross energy √
1.4.5 Concentrates √

(5 x 1) (5)

TOTAL SECTION A: 45

SECTION B

QUESTION 2: ANIMAL NUTRITION

2.1 2.1.1 (a) F √ (1)

(b) E √ (1)

(c) F √ (1)

(d) E √ (1)

(e) G √ (1)

2.2 2.2.1 Small intestines √ (1)

2.2.2
- Folds that increase the surface area.√
- Finger like projections called villi. √
- Very long with blood capillaries. √ (3)

2.3 2.3.1

Roughages	Concentrates
Little digestible nutrient	High digestible nutrient √
High crude fibre content	Low crude fibre √
Bulky	Not bulky √
Cheap to buy	Expensive to buy√
Less than 60% TDN	More than 60% TDN √

(Any 4) (4)

2.3.2 **Coefficient of digestibility =** $\frac{\text{Dry material intake (kg) – Dry mass of manure}}{\text{Dry material intake (kg)}}$ **x** $\frac{100\ √}{1}$

- Moisture content of feed = 58/100 x 3 200 g =1 856 g √
- Dry matter content of feed = 3 200 g – 1 856 g = 1 344 g √
- Moisture content of faeces = 45/100 x 1 250 g = 562,5 g √
- Dry matter faeces = 1 250 – 562, 5 = 687,5 g √
- Dry matter digested and absorbed = 1 344g – 687,5 g = 656,5 g √
- Coefficient of digestibility = 656,5g/1344g x 100 = 48,85% √
- A mark should be allocated for the formula √ (Any 6) (6)

2.3.3
- Grinding √
- Pelleting √
- Boiling √
- Roasting √
- Crushing and rolling √
- Cutting of plants √
- Method of making lucerne √ (Any 3) (3)

2.4 2.4.1 Zinc √ (1)

2.4.2 Calcium √ (1)

2.4.3 Vitamin B_{12} / Magnesium √ (1)

2.4.4 Vitamin K √ (1)

2.4.5 Iron √ (1)

2.4.6 Cobalt √ (1)

2.5
- Antibodies √
- Tranquilisers √
- Hormones √
- Thyroid regulators √
- Anabolic compounds √ (Any 3) (3)

2.6 Nutritive Ratio = 1 $\frac{:\%\ \text{Digestible non–nitrogen compound}}{\text{Digestible protein}}$ √

Digestible non-nitrogen compounds = 75% – 15% = 60% √

= $1\frac{:60\%}{15\%}$ √

= 1: 4 √ (4)

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QUESTION 3: ANIMAL PRODUCTION

3.1 3.1.1

INTENSIVE FARMING	EXTENSIVE FARMING
Less energy used	More energy used √
Animals are in enclosures	Out of enclosure/Animals are moving freely √
Kept in feedlots	Search for food for themselves √
High quality carcass	Low quality carcass √
More production	Low production √
Less exposed to diseases	More exposed to diseases √

(Any 4) (4)

3.1.2
- Diseases √
- Theft √
- Low production √
- Exposed to extreme climatic conditions. √
- Exposed to wild animals. √ (Any 3) (3)

3.1.3
- Building kraals √
- Planting trees √ (Any 2) (2)

3.1.4 Feedlots √ (1)

3.2 3.2.1 Colostrum/beestings √ (1)

3.2.2
- Contains antibodies. √
- Essential for growth and yellowish in colour. √
- Provide vitamins and proteins/nutrients. √ (Any 2) (2)

3.2.3 Week 8 √ (1)

3.2.4 Week 2 √ (1)

3.2.5
- Quietness/whistling √
- Giving food while milking √
- Play musical instrument √
- Massage the udder. √ (Any 2) (2)

3.3 3.3.1 Poor penetration into the fur and skin. √ (1)

3.3.2 Mites / ascaris.√ (1)

3.3.3
- Racin is easily obtainable from the caster bean plant.√
- The extraction process of racin is not complicated. √
- No threat of environmental pollution. √
- They are not highly poisonous to the human beings/farm workers. √
- Very cheap √ (Any 2) (2)

3.3.4
- Acaricide/contact poison/miticide √
- Systematic formulation/drugs √
- Racin/organic extracts √ (3)

3.4 3.4.1
- Wire netting for ventilation. √
- Brick wall to keep the building firm.√
- Over hang 60 cm roof height for cooling. √
- Ventilation facing North Pole for warmth. √ (4)

3.4.2
- High production √
- Maximum security √
- Control √
- Easy to fight diseases. √
- Minimise extreme temperatures. √ (Any3) (3)

3.5 3.5.1
- Permit √
- Red flag √
- Separation according to sex, age etc. in a transport. √
- Truck must be strong and well ventilated. √
- No sick and pregnant animals are allowed for transportation. √
- Truck must not be slippery. √
- No overloading/overcrowding is allowed.√ (Any 2) (2)

3.5.2
- Rigor mortis √
- Bruises √
- Low grading of carcasses. √
- Stampede √ (Any 2) (2)

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QUESTION 4: ANIMAL REPRODUCTION, PROTECTION AND CONTROL

4.1 4.1.1 Artificial insemination √

4.1.2 Fertilisation √

4.1.3 Pregnancy √

4.1.4 Parturition √

4.1.5 Lactation √ (5)

4.2 4.2.1 A = Roundworm.√

B = Flukeworm √

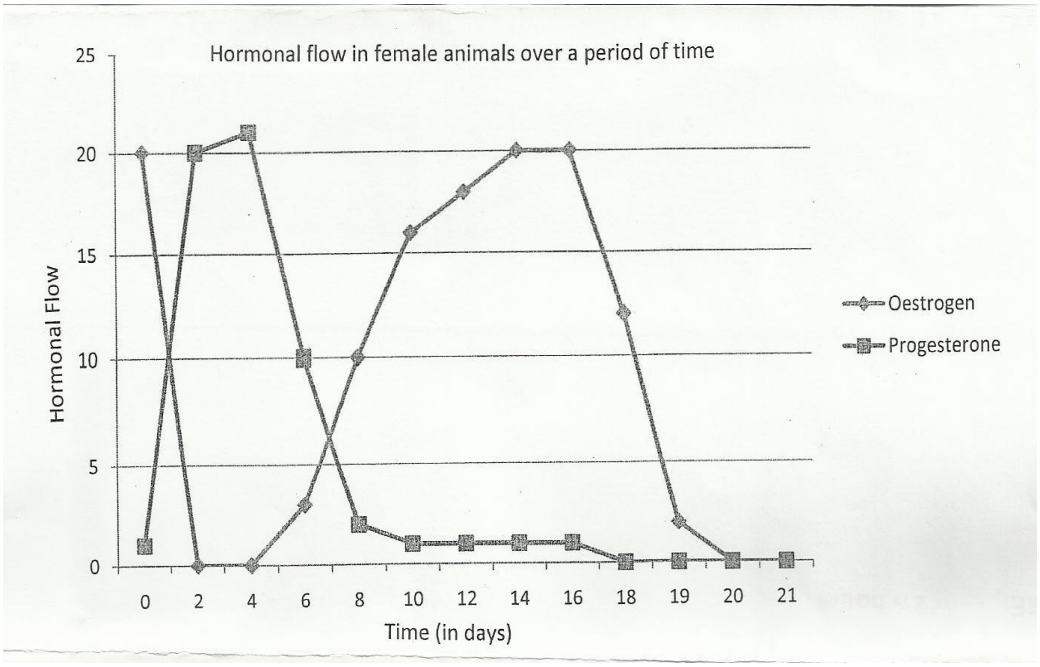
C = Tapeworm √ (3)

4.2.2
- Tapeworm. √ (1)
- Flukeworm √ (1)

4.2.3
- Stock losses due to death.√
- Loss of production.√
- Degrading of carcass. √ (Any 2) (2)

4.2.4
- Quarantine of imported animals. √
- Quarantine of sick animals. √
- Isolation of sick animals. √
- Destroying carcass. √
- Controlling of vector. √
- Vaccination and dipping. √ (Any 4) (4)

4.3 4.3.1



Criteria to Mark:

- Correct heading √
- Key √
- Labelling Y-axis √
- Labelling X-axis √
- Accurate numbering √
- Neatness √
- Correct plotting/Accuracy of two graphs √ (Any 6) (6)

4.3.2 As oestrogen levels decrease, √ the progesterone levels increase √ and vice versa. √ (3)

4.4 4.4.1 B – Fallopian tube/ampulla √ (1)

4.4.2
- For nutrition/gases/antibodies √
- Protection against shock
- Excretion of waste. √
- Attaches the embryo to the wall of the uterus. √ (Any 2) (2)

4.4.3 Ovulation/luteinising hormone/oestrogen. √√ (2)

4.4.4
- Miscarriage √
- Mummification √
- Maceration √
- Reabsorption of embryo. √
- Excess amniotic fluid. √ (Any 2) (2)

4.4.5
- Mucus secreted on her vulva. √
- Soiling tail. √
- Searching and lowing. √
- Vulva swells and reddish. √
- Bellowing noise. √
- Stops eating. √
- Udder painfully swollen and often licks milk. √
- Urinates and defecates frequently.√
- Restlessness/Moving around.√

(Any 3) (3)
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TOTAL SECTION B: 105

GRAND TOTAL: 150