

Need an amazing tutor?

www.teachme2.com/matric



Collected and collated by

teachme2



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

AGRICULTURAL SCIENCES P1

2019

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 10 pages.

SECTION A**QUESTION 1**

1.1	1.1.1	C ✓✓	(10 x 2)	(20)
	1.1.2	B ✓✓		
	1.1.3	B ✓✓		
	1.1.4	D ✓✓		
	1.1.5	A ✓✓		
	1.1.6	D ✓✓		
	1.1.7	B ✓✓		
	1.1.8	C ✓✓		
	1.1.9	A ✓✓		
	1.1.10	D ✓✓		
1.2	1.2.1	B only ✓✓	(5 x 2)	(10)
	1.2.2	None ✓✓		
	1.2.3	Both A and B ✓✓		
	1.2.4	A only ✓✓		
	1.2.5	B only ✓✓		
1.3	1.3.1	Peristalsis ✓✓	(5 x 2)	(10)
	1.3.2	Shed/feed shed/silo/barn ✓✓		
	1.3.3	Cloning/nuclear transfer ✓✓		
	1.3.4	Synchronisation of oestrus ✓✓		
	1.3.5	Freemartin ✓✓		
1.4	1.4.1	Biological value/BV ✓	(5 x 1)	(5)
	1.4.2	Chronic ✓		
	1.4.3	Hypoplasia ✓		
	1.4.4	Mummification ✓		
	1.4.5	Implantation ✓		

TOTAL SECTION A: 45

SECTION B**QUESTION 2: ANIMAL NUTRITION****2.1 Alimentary canal of a farm animal**

- 2.1.1 **Name of the animal**
Poultry/fowl/chicken ✓ (1)
- 2.1.2 **Identification of the letter**
(a) C ✓ (1)
(b) E ✓ (1)
(c) A ✓ (1)
- 2.1.3 **The role of part B in digestion**
It moistens ✓ and softens/soaking food ✓ (2)
- 2.1.4 **Identification of the letter corresponding to a pig stomach**
A ✓ (1)

2.2 Digestion in the stomach and small intestines

- 2.2.1 **Name of the enzymes**
A Rennin ✓ (1)
E Lipase ✓ (1)
- 2.2.2 **Identification of the labels**
B Peptides/polypeptides/peptones/proteoses ✓ (1)
C Starch ✓ (1)
F Amino acids ✓ (1)
- 2.2.3 **Part of the small intestines where digestion occurs**
Duodenum ✓ (1)
- 2.2.4 **Explanation of the importance of fat emulsification**
It increases the surface area ✓ for easier digestion ✓ (2)

2.3 Minerals and vitamins

- 2.3.1 Zinc ✓ (1)
- 2.3.2 Vitamin A ✓ (1)
- 2.3.3 Phosphorus ✓ (1)
- 2.3.4 Vitamin K ✓ (1)

2.4 Nutritive ratio

- 2.4.1 **Recommendation of the feed**
(a) Feed B ✓ (1)
(b) Feed A ✓ (1)
(c) Feed C ✓ (1)

2.4.2 **Indication of the part representing digestible non-nitrogen**
8 ✓ (1)

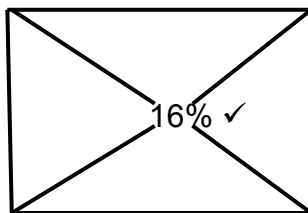
2.4.3 **Justification for recommending feed A for a calf**
It is rich in protein/narrow nutritive ratio ✓ needed for growth ✓ (2)

2.5 **Pearson square**

2.5.1 **The method used to prepare a ration**
Pearson square method ✓ (1)

2.5.2 **Calculation of the ratio of maize : sunflower oilcake meal**

Maize 14% 29 parts ✓



Sunflower 45 % 2 parts ✓

Ratio of maize to sunflower oilcake meal is 29:2 ✓ (4)

2.5.3 **Calculation of percentage of sunflower oilcake meal**

$$29 + 2 = 31 \checkmark$$

$$\frac{2}{31} \times 100 \checkmark$$

$$= 6,45/6,5\% \checkmark$$

OR

$$\frac{2}{31} \checkmark \times 100 \checkmark$$

$$= 6,45/6,5\% \checkmark \quad (3)$$

2.6 **TWO roles of a good fodder flow programme**

- To ensure safe use of the resources ✓
 - To meet animal feed requirements ✓
 - Margin over feed costs ✓
 - Manageability ✓
 - Focus on weekly/monthly/annual production and consumption ✓
 - Ensure the continual supply of fodder to animals ✓
- (Any 2) (2)
- [35]**

QUESTION 3: ANIMAL PRODUCTION, PROTECTION AND CONTROL**3.1 Farming systems****3.1.1 Identification of farming systems****A** Subsistence ✓

(1)

B Commercial ✓

(1)

3.1.2 Comparing subsistence and commercial farming systems**(a) Purpose of the output****Subsistence** - Output is mainly for feeding the family/not for profit ✓

(1)

Commercial - Output is mainly for selling/profit ✓

(1)

(b) Impact on environment**Subsistence** - No/little impact as there is no pollution ✓

(1)

Commercial - Huge impact because of high production of manure/higher rate of pollution ✓

(1)

3.1.3 Disadvantage of farming system B

Large scale spread of diseases/loss of production ✓

(1)

3.1.4 Economic benefit of farming system B over A

High production/income/profit for the farmer ✓

(1)

3.2 Facilities used in an animal production enterprise**3.2.1 Identification of the facilities****A** Water trough ✓

(1)

B Feed trough ✓

(1)

3.2.2 Indication of the purpose for facility C

To restrain farm animals ✓

(1)

3.3 Life cycle of a parasite**3.3.1 Classification of parasite**

Internal/endoparasite ✓

(1)

3.3.2 Reason

It lives in the body of the host ✓

(1)

3.3.3 Identification of intermediate host

Snail/slug ✓

(1)

3.3.4 Environmental condition for survival of an intermediate host

Wet/moist condition ✓

(1)

3.3.5 TWO precautionary measures to prevent parasite infestation

- Avoid/fence off wet areas during grazing ✓
- Rotational grazing/resting veld ✓
- Zero grazing ✓
- Veld burning ✓
- Breed animals resistant to parasite infestation ✓
- Clean drinking water ✓
- Provision of good nutrition ✓

(Any 2) (2)

3.4 Animal handling**3.4.1 TWO reasons for handling farm animals**

- Normal management programmes of animals/dehorning/marking/castration/docking ✓
- Prevention/treatment of parasites/dosing/vaccination ✓
- Determination of the animal's age ✓
- Determination of pregnancy ✓
- Generation of data such as growth rate, mass and market readiness ✓
- Transportation of animals ✓

(Any 2) (2)

3.4.2 Effect of incorrect handling practice

- (a) Animals will flee/lash out/injures the handler/get startled ✓ (1)
- (b) Sheep will be injured/damage the skin ✓ (1)
- (c) There will be fighting/aggression ✓ (1)

3.5 TWO basic housing requirements

- Protection from extreme climatic conditions/direct solar radiation/rain/wind ✓
- Sufficient/adequate lighting ✓
- Provision of cooling/heating systems ✓
- Provision of bedding ✓
- Food and clean water should be easily accessible ✓
- Easy movement of workers should be ensured ✓
- Housing construction must be cost-effective ✓
- Appropriate size to minimize over-crowding ✓

(Any 2) (2)

3.6 Diseases caused by micro-organisms in farm animals**3.6.1 Identification of the letters**

- (a) Mastitis ✓ (1)
- (b) Virus ✓ (1)
- (c) Dark/red urine ✓ (1)
- (d) Wool sheep/Merino sheep ✓ (1)
- (e) Protozoa ✓ (1)

3.6.2 TWO roles of the state in the control of farm animal diseases

- Public awareness/notify public ✓
- Conduct research ✓
- Import/export bans ✓
- Supplying veterinary services ✓
- Generate and implement legislation ✓
- Control movement of animals/movement permits ✓
- Setting of quarantine zones ✓

(Any 2) (2)

3.7 Salt poisoning in livestock**3.7.1 TWO symptoms of salt poisoning**

- Increased thirst ✓
- Dry/red mucous membranes of the mouth ✓
- Hypersensitivity ✓
- Irritability ✓
- Excessive salivation ✓
- Increased urination/defecations ✓
- Constipation ✓
- Vomiting and regurgitation ✓
- Inflammation of the stomach ✓
- Abdominal pain and diarrhoea ✓
- Wobbling/staggering/circling/blindness/seizures/paralysis ✓
- Dragging the hind legs/knuckling of the fetlock ✓
- Aggressiveness ✓

(Any 2) (2)

3.7.2 TWO ways of treating animals with salt poisoning

- Immediate removal of the source ✓
- Treatment with hypertonic dextrose/isotonic saline solution ✓
- Provision of fresh/clean water ✓

(Any 2) (2)

[35]**QUESTION 4: ANIMAL REPRODUCTION****4.1 Diagram of a sperm cell****4.1.1 Identification of Part A**

Nucleus ✓

(1)

4.1.2 Letter of the part representing the acrosome

B ✓

(1)

4.1.3 Function of the Parts

- (a) **Part D** Provides energy to the sperm cell for movement ✓ (1)
- (b) **Part E** Facilitates/propel movement of the sperm cell ✓ (1)

4.2 Male reproductive organs

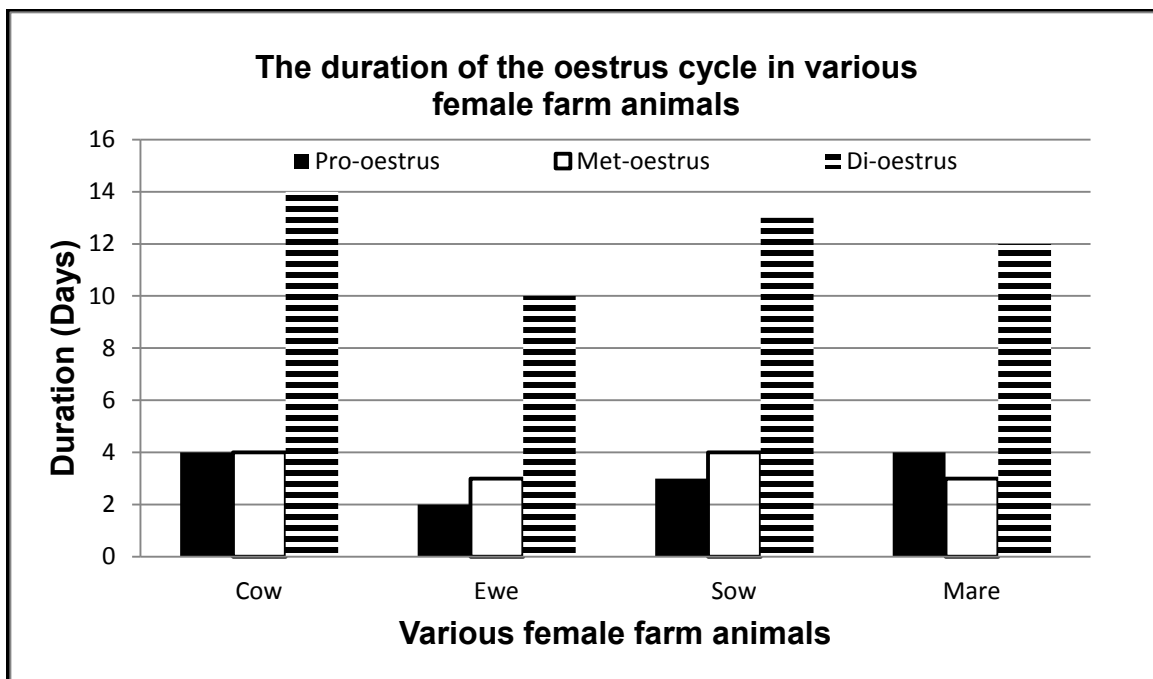
- 4.2.1 Vas/ductus deferens/seminal tube ✓ (1)
- 4.2.2 Prostate gland ✓ (1)
- 4.2.3 Epididymis/vesicular gland/seminal vesicle ✓ (1)

4.3 Hormonal control during the oestrus cycle

- 4.3.1 **Definition of oestrus cycle**
Recurring periods of oestrus ✓ alternating with sexual rest ✓ (2)
- 4.3.2 **Process at B**
Ovulation ✓ (1)
- 4.3.3 **Function of luteinising hormone**
- Stimulates the rupturing of the Graafian follicles/causes ovulation ✓
 - For maturation of oocytes ✓
 - For the formation of corpus luteum ✓
 - Facilitates the capturing of the ova/tightening the infundibulum ✓
- (Any 1) (1)
- 4.3.4 **THREE signs of oestrus in cows**
- Mounts other cows ✓
 - Restlessness ✓
 - Swelling of the vulva ✓
 - Excessive mucus secretion from the vulva ✓
 - Mucus membranes of the vagina appears red and moist ✓
 - Scratches, manure and mud on the rear end ✓
 - Cows sniffs/licks the genitalia of other cows ✓
 - Tail/head/rump hair is fluffed up ✓
 - Raised tail ✓
 - Loss of appetite ✓
 - Decrease in milk production ✓
 - Allows Mating ✓
- (Any 3) (3)

4.4 Stages of the oestrus cycle

A bar graph on the duration (in days) of the different stages in the oestrus cycle in various female farm animals



Criteria/rubric/marketing guidelines

- Correct heading ✓
- X-axis: Correct calibrations and labelled (Various female farm animals) ✓
- Y-axis: Correct calibrations and labelled (Duration) ✓
- Correct unit (Days) ✓
- Bar graph ✓
- Accuracy ✓

(6)

4.5 Technique used by farmers

4.5.1 Identification of the technique

Artificial Insemination/AI ✓

(1)

4.5.2 TWO characteristics of good, quality semen

- Colour - whitish to yellowish/milky/opaque ✓
- Sticky ✓
- Less than 15 % dead sperm cells/less mortality rate ✓
- 80% of sperm cells showing forward movement/mobility/motility/viability ✓
- Less than 20 % deformation/normal morphology ✓
- Characteristic odour ✓
- Healthy/disease free semen ✓
- pH - 6,4 to 6,9/slightly acidic ✓
- Concentration - 1,1 to 4,5 billion sperm cells per ml ✓
- Volume - 4 to 8ml ✓

(Any 2) (2)

4.5.3	Apparatus held by the hand A Pistolette/insemination gun ✓	(1)
4.5.4	Best time for inseminating a cow The next morning ✓	(1)
4.5.5	ONE negative effect of technique by inexperienced person <ul style="list-style-type: none"> • Injury of the reproductive tract of the cow ✓ • Unexpected low pregnancy result ✓ 	(Any 1) (1)
4.6	Reproductive technique conducted in cows	
4.6.1	Reproductive technique Embryo transplant/ET ✓	(1)
4.6.2	Letters representing the FIRST TWO stages in sequence E ✓ C ✓	(2)
4.6.3	TWO benefits of the technique to farmers <ul style="list-style-type: none"> • More progeny produced from best cows ✓ • More profit ✓ • Fast genetic improvement of the herd ✓ • Productive life of older cows is extended ✓ • Breeding animals with improved efficiency of production ✓ • Genes in a herd are conserved/prevent extinction of valuable animals ✓ 	(Any 2) (2)
4.7	Stage of pregnancy	
4.7.1	Term for a fertilised diploid cell Zygote ✓	(1)
4.7.2	Cell containing 16 cells of the stage Morula ✓	(1)
4.7.3	TWO non-infectious causes of termination of pregnancy <ul style="list-style-type: none"> • Injuries ✓ • Malnutrition/incorrect feeding ✓ • High dosage of drugs and hormones ✓ • Chemical poisoning/strong laxative/toxic feeds ✓ • Maltreatment/stress/trauma ✓ • Transportation ✓ • Vaccination ✓ • Embryo abnormalities/ovum/sperm defects ✓ • Genetic defects ✓ • Multiple foetus pregnancies ✓ 	(Any 2) (2)
		[35]
TOTAL SECTION B:		105
GRAND TOTAL:		150