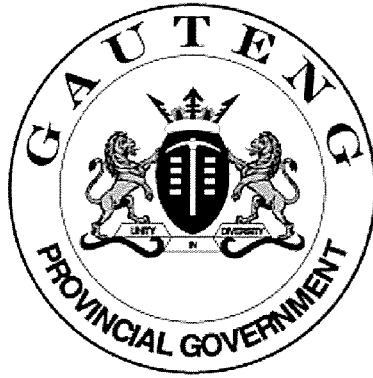




PREPARATORY EXAMINATION

2010

MEMORANDUM

SUBJECT:	AGRICULTURAL SCIENCES P2 (10642)
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NSC PREPERATORY - MEMORANDUM

MEMORANDUM

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

(10x2) (20)

QUESTION 1.3

1.3.1	DNA✓✓
1.3.2	Law of diminishing returns✓✓
1.3.3	Meiosis✓✓
1.3.4	Advertising/ Promotion/ Promoting✓✓
1.3.5	Cloning✓✓

(5x2) (10)

QUESTION 1.2

1.2.1 F✓✓1.2.2 E✓✓1.2.3 G✓✓1.2.4 D✓✓1.2.5 C✓✓

(5x2) (10)

QUESTION 4

1.4.1 Epistasis✓1.4.2 Pedigree✓1.4.3 Diversification✓1.4.4 Inbreeding✓1.4.5 Loan / credit✓

(5x1) (5)

TOTAL SECTION A: 45

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SECTION B

QUESTION 2

2.1.1

- Soil texture✓
 - Slope✓
 - Soil dept✓
 - Rockiness✓
 - Erosion✓
 - Availability of water for irrigation✓
 - Fertility / nutritus status✓
- (Any 3) (3)

2.1.2

- Land provides space✓
 - Land supplies raw materials✓
 - Land supplies food✓
 - Land supplies minerals✓
- (4)

2.1.3.1 In South Africa, the areas of land available for agriculture is limited. ✓
The areas available per person decreases every year. ✓ (2)

2.1.3.2 Soil can be very durable✓ and has the potential to regenerate✓ when treated correctly or even when left alone. (2)

2.1.3.3 Natural disasters ✓such as floods and fire as well as incorrect methods of cultivation may damage the soil but can never✓ destroy it. (2)
[13]

2.2.1 Communal tenure is when a community ✓or group of people has access to an area of land. ✓ (2)

2.2.2 Restitution – The return of land✓ or the provision of compensation✓ to those who had land taken away from them in the past. (2)

Redistribution To address previous discriminatory apartheid policies and ensure that poor, ✓ previous disadvantaged people have access to land. ✓ (2)

Tenure reform – To improve the security ✓of tenure of people occupying rural areas. ✓ (2)

[8]

- 2.3.1 (a) F✓ (1)
(b) C✓ (1)
(c) D✓ (1)

2.3.2 E ✓- Labour✓ (4)
F ✓- Land✓

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- 2.3.3 Land/ F✓ (1)
- 2.4.1 People who are starving and willing to work only for food is denied the opportunity, ✓ in a country with high unemployment it works against the poor. ✓ (2)
- 2.4.2 Part time✓
Full time✓
Seasonal workers✓
Temporary✓ (Any 2) (2)
- 2.4.3 Beef cattle farming✓
Game farming✓ (2)
- [6]
- [35]

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QUESTION 3

- 3.1.1 Processing✓
Packaging✓ (2)
- 3.1.2
- Fix a price✓
 - Identify the buyers✓
 - Identify the market✓ (3)
- 3.1.3 Informal market / Bakkie trade✓
Formal marketing / Fruit and Vegetable✓ (2)
- 3.1.4 Nothing is wasted, all the non-marketable sweet potatoes are used as animal feed. ✓ (1)
- 3.1.5 The risk involved✓
The market✓
The price✓
The profit✓
Production cost✓
Cost of labour✓
The rainfall/ climate✓ (Any 3) (3)
[11]
- 3.2.1 A demand✓
B supply✓ (2)
- 3.2.2 They will start to produce more✓ milk because it will mean a better income. ✓ (2)
- 3.2.3 Equilibrium price / point✓
A point where the quantity ✓ of the product demanded is equal ✓ to the supply of the product. (3)
[7]
- 3.3 Collecting of information✓ about your customers as well as your competition. ✓ (2)
- 3.4 Price elasticity is the relationship✓ between a change in price and the change in the demand✓ for the product influenced by: (2)
- Whether substitute products are available✓
 - Income available to spend on the product✓
 - Time that passes✓ (3)
[7]

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- 3.5.1 The amount ✓ of a commodity that people are willing to buy given the price they have to pay for that commodity. ✓ (2)
- 3.5.2
- Average household income ✓
 - Price of the commodity ✓
 - Price of other commodities ✓
 - Taste ✓
 - Distribution of income among households ✓
 - Size of the population ✓ (6)
- 3.5.3 The amount of a commodity that a producer is willing ✓ to sell, given the price ✓ the producer can get. (2)
- [10]
- [35]

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QUESTION 4

4.1.1

- Normal distribution / Continuous variation✓
- Large number of animals average. Small number above average, small number below average✓ (2)

4.1.2 Animals were selected for a higher milk production, ✓ improvement ✓ is taking place. (2)

4.1.3 d✓ (1)

4.1.4 c✓ Animals will produce offspring with low milk production, ✓ not economical to keep for breeding✓ (Any 2) (2)

4.1.5

- Performance testing results✓
 - Visual assessment✓
 - Breed characteristics✓
 - Pedigree✓ (Any 3) (3)
- [10]**

4.2.1 Bull A ✓ – birth mass is too high✓
 Bull B ✓ – weaning mass is too low✓
 Bull D ✓ – Scrotal circumference ✓ is too small (6)

4.2.2 Bull E, ✓ has a low birth✓ mass but a high weaning mass. (2)
[8]

4.3.1 Two breed rotational cross✓ (1)

4.3.2

- Fat lamb production from Merino ewes✓
- Producing calves for the feedlot by crossing dairy cows with beef bulls. ✓
- Broiler production✓
- Egg production✓
- F1 pigs commercially farmed with (Landrace✓ X Large White) (Any 2) (2)

4.3.3

- Greater viability✓
- Hardiness✓
- Better fertility✓
- Faster growth rates✓
- Greater disease resistance✓
- Better adaptability✓
- Better feed conversion✓ (Any 2) (2)

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- 4.4.1 Male – black with short hair✓
 Female – white with long hair✓ (2)
- 4.4.2 A $9/16 \times 100 = 56.25\%$ ✓ (2)
 B $3/16 \times 100 = 18.75\%$ ✓ (2)
- 4.4.3 Dihybrid✓ (1)
[7]
- 4.5
- herbicide tolerance✓
 - Insect resistance✓
 - Virus resistance✓
 - Quality traits✓ (4)
- 4.6
- Might have unforeseen consequences✓
 - Can cause wild and domestic maize to be toxic to plant eating insects✓
 - No way to ensure GM crops will remain under control✓
 - Reduce biodiversity✓
 - May cause disease even cancer although no proof✓
 - May cause lower yields✓
 - Seed is very expensive✓ (Any 1) (1)

TOTAL SECTION B: 105