



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2012

**AGRICULTURAL SCIENCES P2
MEMORANDUM**

MARKS: 150

This memorandum consists of 8 pages.

ANSWER SHEET**AGRICULTURAL SCIENCES P2**NAME AND SURNAME 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 1.2

	ONLY A	ONLY B	BOTH A and B	None
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✓✓

(5x2) (10)

QUESTION 1.3

1.3.1 Budget ✓✓

1.3.2 The law of diminishing returns ✓✓

1.3.3 Out crossing ✓✓

1.3.4 Hedging ✓✓

1.3.5 Depreciation ✓✓

(5x2) (10)

QUESTION 1.4

1.4.1 Free marketing system ✓

1.4.2 Environmental ✓

1.4.3 The Communal Land Rights Act (1996) ✓

1.4.4 Lethal genes ✓

1.4.5 balance sheet ✓

(5x1) (5)

45

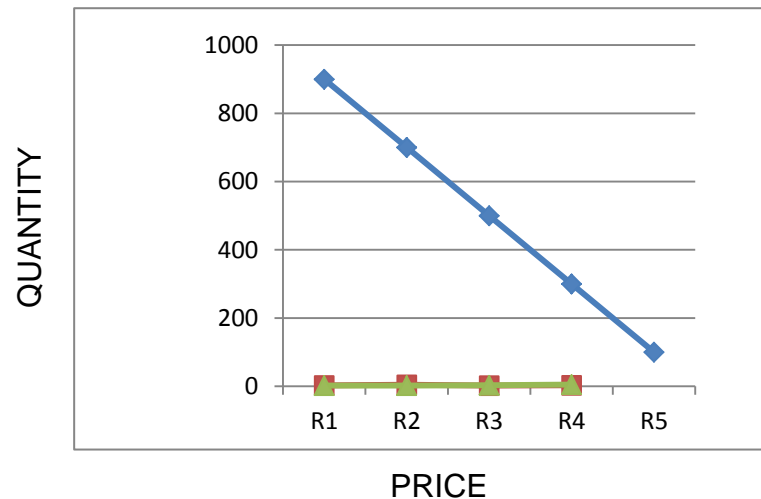
TOTAL SECTION A: 45

SECTION B

QUESTION 2 AGRICULTURAL MANAGEMENT

- 2.1 2.1.1 Farmers can easily evaluate their performance for the past season ✓
Farmers can do proper planning for the future ✓ (2)
- 2.1.2 Personal details such as name/age/race/date of birth ✓
Date of employment ✓
Work schedule ✓
Salary ✓ (Any 2) (2)
- 2.1.3 (a) poultry feed: livestock records ✓ (1)
(b) number of workers: labour records ✓ (1)
(c) fertilizers: crops records ✓ (1)
- 2.2 2.2.1 Describe the problem ✓
Identify all possible solutions ✓
Evaluate all possible solutions ✓
Choose the best solution ✓ (4)
- 2.2.2 Good/harmonious/democratic/working relationship/working together/team work ✓✓ (Any 2) (2)
- 2.2.3 Producers receive guaranteed price, which gives them financial security ✓
It ensures orderly and effective marketing ✓
It simplifies management and bookkeeping ✓
Producers receive average price of all the sales ✓
Farmers do not have to build their own storage or packaging facilities ✓
Producers are protected against price fluctuations and against extremely low market prices ✓
Cost are kept lower because product and handling (collecting, storage, packaging, processing) is cheaper if produce is kept together than if handled separately ✓ (Any 3) (3)
- 2.2.4 Cost plus pricing ✓
Competition-oriented or going-rate pricing ✓
Market-orientated pricing ✓ (3)

2.3 2.3.1 The demand curve for cashew nuts at a farm gate



Appropriate heading ✓

Demand curve ✓

Correct plotting of price and quantity ✓

Use of ruler and correct scale ✓

(4)

2.3.2 The higher the price, ✓ the less people will demand a certain item ✓ / The lesser the price ✓, the more people demand an item ✓

(2)

2.3.3 The weather/drought/hail/floods ✓
 The profit margin of the product ✓
 The ease with which to increase the supply of a product ✓
 Knowledge ✓
 The stability of the product ✓
 The period of production ✓
 Technology ✓
 Price of the product

(Any 3) (3)

2.3.4 Stock sales: refers to the selling of goods on auction to the highest bidder ✓ whilst Farm gate marketing refers to the selling of goods/or farm produce directly from the farm ✓

Advantages- of stock sales

- higher prices can be reached ✓

- farmers do not have to bear the cost of slaughtering animals ✓ (Any 1) (1)

Advantages of farm gate marketing

Farmers do not have marketing chain cost ✓

Per unit price is normally lower than retail price ✓ (Any 1) (4)

2.4 Business plan

It is a document that describes the business you want to start ✓ and says what your goals and objectives are, ✓ the cost of starting the business and how it will make money ✓

(3)

[35]

QUESTION 3 PRODUCTION FACTORS AND MANAGEMENT

- 3.1 3.1.1 The Natural Water Act (1998)✓
 The Natural Veld and Forest Fire Act (1998)✓
 The Conservation of Agricultural Resources Act (1983)(CARA)✓
 The Sustainable Utilization of Agricultural Resources Bill (2003)✓
(Any 2) (2)
- 3.1.2 Land restitution✓
 Land redistribution✓
 Land tenure reform ✓ (3)
- 3.1.3 To return land or provide compensation to those whose land were
 taken from them in the past✓
 To address previous discriminatory apartheid policies and ensure
 that poor, previously disadvantaged people have access to land✓
 To improve the security of tenure of people occupying rural and
 semi-urban land✓ (Any 2) (2)
- 3.2 3.2.1 Available land for agriculture is limited/availability✓
 Soil is durable/durability✓
 Soil is indestructible/indestructibility✓
 Soil conditions restrict the growth of many plants/restrictedness✓
 Soil is found in specific environments/specific environment✓
 Soil is subject to the law of diminishing returns✓ (Any 4) (4)
- 3.2.2 Water provision/irrigation✓
 Consolidation of uneconomical units✓
 Use of improved agricultural methods✓ (Any 2) (2)
- 3.3 3.3.1 B – Permanent workers✓
 C – Temporary workers/seasonal workers✓ (2)
- 3.3.2 Physical farm planning✓
 Daily planning✓
 Supervision✓
 Efficient mechanization/use of tractors✓
 Adequate living conditions and remuneration
 packages/housing/recreational facilities/UIF/appreciation✓
 Financial incentives/bonus✓
 Training✓
 Economic planning of farm activities✓
 Planning of production processes ✓ (Any 3) (3)
- 3.3.3 The Compensation for Occupational Injuries and Diseases Act
 (1993)✓ (1)

- 3.4 3.4.1 Assets – are things that you own, ✓ that have financial value. ✓ (2)
- 3.4.2 Buildings – long term assets ✓
Breeding livestock – medium term assets ✓
Feeds – short term assets ✓ (3)
- 3.4.3 An enterprise budget is prepared for one particular enterprise such as potato production on a farm ✓ and A whole farm budget combines all the farm enterprises to show the net returns to the farm business ✓
(Any 2) (2)
- 3.4.4 Income = R64 500
Expenditure = R54 600
Profit = R64 500 – R54 600 ✓
= R9 900 ✓ (2)
- 3.5 3.5.1 Most processed tomatoes are less perishable ✓
Adds value ✓
Do not get damaged ✓
Easier to transport ✓
Takes up less space ✓
Can be used during out of season ✓
Provides employment ✓ (Any 3) (3)
- 3.5.2 Calculations based on simple interest ✓
Calculations based on compound interest ✓ (2)
- 3.5.3 Cooking/roasting ✓
Sun drying/smoking ✓
Salting/fermenting/brewing ✓
grinding/mashing/peeling ✓ (Any 2) (2)

QUESTION 4 BASIC AGRICULTURAL GENETICS

4.1 4.1.1 It is a breeding system where individual plants \checkmark are allowed to self-pollinate \checkmark (2)

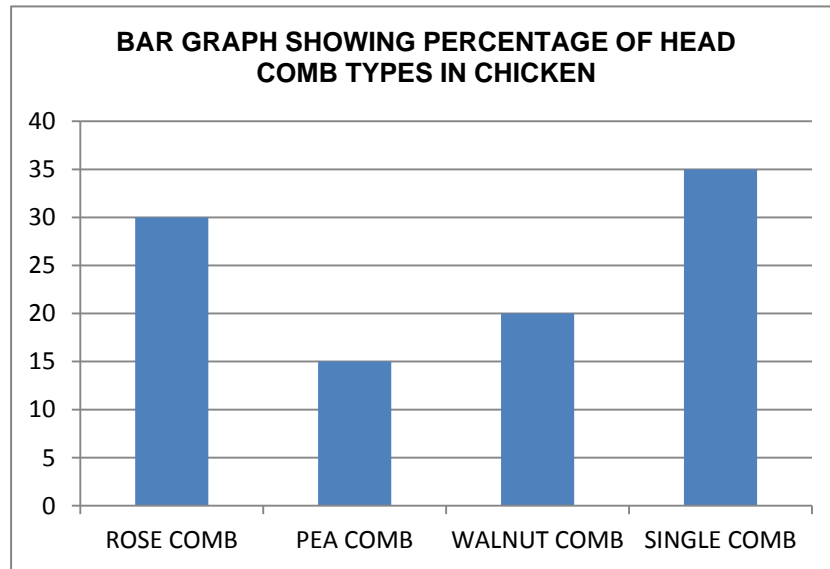
Advantages

It leads to a genetically uniform homologous population \checkmark
It is not labour intensive because the farmer simply lets nature take its course and allows self-pollination \checkmark (Any 1) (3)

4.1.2 Diet \checkmark
Shelter \checkmark
Climate \checkmark
Pest and diseases \checkmark (4)

4.1.3 The characteristic must be inheritable \checkmark
The characteristics must be measurable and must be carefully recorded \checkmark
The characteristic must be of economic importance \checkmark (3)

4.2 4.2.1



Correct heading/title \checkmark
Correct labelling of Y and X axis \checkmark
Correct scaling, using ruler \checkmark
Bar graph \checkmark (4)

4.2.2 Discontinuous variation \checkmark (1)

4.3 4.3.1

	Q	Q
q	Qq	Qq
q	Qq	Qq

Correct Placement of dominant(QQ) \checkmark
Recessive genes (qq) \checkmark
Correct Placement of genotypes \checkmark
Punnet square \checkmark (4)

- 4.3.2 When an individual has two different unit factors for the same characteristics ✓, one unit factor is dominant to the other, which is called recessive. ✓/Law of dominance ✓ and recessiveness ✓ (2)
- 4.3.3 9:3:3:1 ✓ (1)
- 4.4 4.4.1 Co-dominance
It is a type of inheritance where both of the alleles are dominant ✓ and fully expressed in the phenotype. ✓ (2)
- 4.4.2 Inbreeding depression
It is a gradual decrease in performance from generation to generation ✓ produced by continual inbreeding ✓. (2)
- 4.5 Agro bacterium tumefaciens. ✓
Electroporation ✓
Micro-injection ✓
Gene gun ✓ (Any 3) (3)
- 4.6
- ```

graph TD
 A[Desired gene inserted into plasmid ✓] --> B[Plasmid inserted into plant cell ✓]
 B --> C[Plasmid inserts desired gene into plant DNA ✓]
 C --> D[Tissue culture (transgenic plant) ✓]

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- (4)
- 4.7 Samatotrophin ✓  
Thyroxin ✓  
Androgen ✓ (Any 2) (2)

[35]

**TOTAL SECTION B: 105****GRAND TOTAL: 150**