# MARKING GUIDELINES

| EXAMINATION | NATIONAL SENIOR CERTIFICATE |
|---|---|
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# SECTION A

## QUESTION 1

### 1.1 MULTIPLE CHOICE

| | | |
|---|---|---|
| 1.1.1 | C ✓✓ | |
| 1.1.2 | D ✓✓ | |
| 1.1.3 | B ✓✓ | |
| 1.1.4 | A ✓✓ | |
| 1.1.5 | D ✓✓ | |
| 1.1.6 | D ✓✓ | |
| 1.1.7 | A ✓✓ | |
| 1.1.8 | B ✓✓ | |
| 1.1.9 | C ✓✓ | |
| 1.1.10 | A ✓✓ | (10 x 2) **(20)** |

### 1.2 MATCHING COLUMN

| | | |
|---|---|---|
| 1.2.1 | B ✓✓ | |
| 1.2.2 | F ✓✓ | |
| 1.2.3 | D ✓✓ | |
| 1.2.4 | A ✓✓ | |
| 1.2.5 | G ✓✓ | (5 x 2) **(10)** |

### 1.3 AGRICULTURAL TERM

| | | |
|---|---|---|
| 1.3.1 | Ceiling price ✓✓ | |
| 1.3.2 | unemployment ✓✓ | |
| 1.3.3 | heredity ✓✓ | |
| 1.3.4 | line breeding ✓✓ | |
| 1.3.5 | gene silencing ✓✓ | (5 x 2) **(10)** |

### 1.4 UNDERLINED WORD

| | | |
|---|---|---|
| 1.4.1 | Marketing ✓ | |
| 1.4.2 | Capital ✓ | |
| 1.4.3 | Polygenes ✓ | |
| 1.4.4 | inserted ✓ | |
| 1.4.5 | mutagen ✓ | (5 x 1) **(5)** |

**TOTAL SECTION A: [45]**

# SECTION B

## QUESTION 2: AGRICULTURAL MANAGEMENT

### 2.1 Phrases about selling and marketing

2.1.1 (a) **Selling:**

Concerned with the sale of goods already produced✓
Obtaining orders from customers✓ (2)

(b) **Marketing:**

Involves the design of the product acceptable to consumers✓
Consumer orientated✓ (2)

2.1.2 **Advantages of processing**

- Provides job opportunities✓
- Increases the value of the product✓
- Reduces wastage✓
- Storage period increases✓
- Overcomes over-supply✓
- Easier packing and handling of products✓

(Any 4) (4)

### 2.2 Inelasticity of demand

2.2.1 **Deduction of the marketing concept**

Price inelasticity of demand ✓ (1)

2.2.2 **A reason for the answer**

The demand changed slightly despite the huge change in price ✓ (1)

2.2.3 **Explanation of the reason why consumers responded in this way**

Canola oil is a necessity to prepare food ✓ people will therefore buy canola oil even with a price increase ✓ (2)

2.2.4 **Identification of the factor leading to the differences in the number of bottles demanded**

Price ✓ (1)

## 2.3 Activities related to the production and marketing of agricultural products

### 2.3.1 THREE activities in the following order:

- Planning for production ✓
- Soil preparation and planting ✓
- Grading ✓
- Storage ✓
- Distribution ✓
- Sales to consumers ✓

(Any 3 in a CORRECT ORDER) (3)

### 2.3.2 TWO problems with the distribution during marketing of agricultural products

- Poor infrastructure/bad roads ✓
- Transportation/wide distribution and distances to markets ✓
- Accidents/theft can cause losses ✓
- High transportation cost ✓
- Spoilage of products in the market chain/perishability ✓
- Products not properly handled/stored ✓

(Any 2) (2)

2.3.3 Grading ✓ (1)

## 2.4 Marketing channels

### 2.4.1 The marketing channel illustrated

Stock sales ✓ (1)

### 2.4.2 Marketing system associated with the marketing channel

Free marketing ✓ (1)

### 2.4.3 Motivation for use of the channel by the farmers

- Payment is guaranteed ✓
- Seller has access to a wider market than the local one ✓ (2)

### 2.4.4 TWO other marketing channels available to the farmers

- Internet marketing ✓
- Direct marketing ✓
- Farm gate marketing ✓
- Fresh produce marketing ✓

(Any 2 x 1) (2)

## 2.5 Entrepreneurship

### 2.5.1 Entrepreneur

A person who sees opportunities for a business✓ and uses them for profit ✓. (2)

### 2.5.2 THREE characteristics to be a successful entrepreneur

- Creative and innovative ✓
- Confident and positive attitude ✓
- Leader ✓
- Good manager
- Perseverance and inner drive ✓
- Highly motivated ✓
- Energetic ✓
- Common sense ✓
- Risk orientated ✓
- Ability to get things done ✓
- Committed ✓
- Organised ✓
- Responsible ✓
- Flexible ✓

(Any 3) (3)

### 2.5.3 Processing of agri-produce on the farm:

- Build a butchery to provide meat cuts straight to the consumers✓
- Canning plant for the beans and or maize✓
- Sell the manure of the animals ✓

(Any 2) (2)

### 2.5.4

- General overview of the business ✓
- Marketing information ✓
- Details of staff ✓
- Financial details ✓

(Any 3) (3)

**[35]**

## QUESTION 3: PRODUCTION FACTORS AND MANAGEMENT

### 3.1 Land as production factor

3.1.1
- Provides space / medium for plants to grow✓
- Source/Supplies raw materials ✓
- Supplies minerals✓
- Provides food✓

(Any 3) (3)

3.1.2
- Adaptation of production systems to scientific methods✓
- Water provision /Supply water✓
- Consolidation of uneconomical farm units✓
- Utilisation of improved agricultural methods✓

(Any 2) (2)

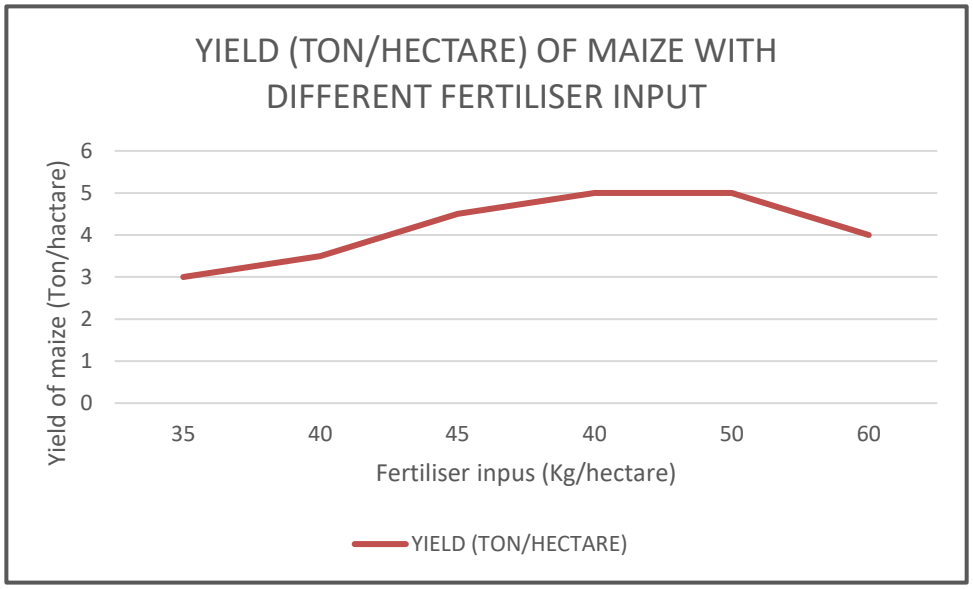
### 3.2 Law of diminishing returns

3.2.1 Law of diminishing returns✓ (1)

3.2.2 **Deduction of relationship between fertiliser input and yield**

With the addition of fertilizers, ✓ yield will increase✓ but a point will be reached✓ at which further increase in fertilizer application will not result in an increase in production, but a decline. ✓ (4)

3.2.3 **Line graph**




**Marking guideline for line graph**

| | Mark allocation |
|---|---|
| Heading | 1 |
| x-axis heading and scale correct | 2 |
| y-axis heading and scale correct | 2 |
| Correct plotting of line graph | 1 |

(6)

3.2.4 **Definition: Law of diminishing returns**

The yield capacity of land is mainly determined by the physical characteristics of the soil. ✓ It can be increased to a certain extent by increasing capital and labour inputs per unit or by means of improved technology. ✓ A point will be reached where production no longer increases with increased units of input. ✓

(Any 2) (2)

## 3.3 Labour

3.3.1 **Increase of labour motivation and productivity**

Improvement of educational opportunities✓
Improve on living and working conditions e.g. proper housing✓
Good salaries, medical aid, and pension✓ (3)

3.3.2 **Types of labour**

a) Casual labour: Type of labour that works less than 24 hours per month✓ (1)

b) Seasonal labour: Type of labour that is only available during specific season e.g. harvesting time✓ (1)

c) Skilled labour: Type of labour that knows how to do the job, they may be permanent or temporary✓ (1)

3.3.3 **Labour Legislation**

a) **Labour relations Act No. 66 of 1995**: Responsible for right of labour to strike, stay-ins etc. ✓ (1)

b) **Occupational Health and Safety Act No. 85 of 1993**: Responsible for safety in the work place. ✓ (1)

**c) Compensation for Occupational Injuries and Diseases Act No. 85 of 1993**: Responsible for regulating the health and safety of workers. ✓ (1)

## 3.4 Management and Capital

3.4.1 **Important management skills for a farmer**

- Conceptual skills✓
- Analytical skills✓
- Problem-solving✓
- Organisational skills✓
- Identifying risks✓

(Any two) (2)

3.4.2 **Requirements of efficient control**

- System must be adaptable to the requirements of a task ✓
- Provision must be made for any problem or deviation which may occur✓
- Control must be flexible to meet changing circumstances✓
- It must be economical in terms of time and money✓
- The system should be simple and clearly understandable✓
- The system must lead to corrective action in order to solve problems✓

(Any 2) (2)

3.4.3 **Types of capital**

Movable capital✓ e.g. tractor / drone / cell phone✓
Working capital✓ e.g. wheat on the land ✓
Fixed capital ✓ e.g. land / building / silo✓

(Any 2 with example) (4)

**[35]**

## QUESTION 4: BASIC AGRICULTURAL GENETICS

### 4.1 Co-dominance

#### 4.1.1 Co-dominance

Both alleles are simultaneously expressed✓ in the heterozygote meaning both alleles are equally dominant ✓the one does not dominate the other and there is no mixture of the phenotypical characteristics. Both traits are equally visible in the phenotype. ✓ (3)

#### 4.1.2 Punnet square for crossing of the two animals

| Gametes | **W** | **B** |
|---|---|---|
| **W** | WW | WB |
| **B** | WB | BB |

Rubric:

| Criteria | Correct |
|---|---|
| Both heterozygous gametes placed correctly | 2 |
| Crossings were done correctly | 1 |
| **Total** | **3** |

Ratio: 25% white✓ : 50% roan✓ : 25% black✓ or
1 : 2 : 1
white roan black (6)

### 4.2 Line breeding

#### 4.2.1 Definition: Line breeding

The mating of related animals✓ so that the progeny remains closely related to a particularly outstanding ancestor. ✓ (2)

#### 4.2.2 Common ancestors

- 13✓
- 5 ✓
- 7 ✓ (3)

#### 4.2.3 Benefits of upgrading for livestock farmers

- A new breed is gradually imported into the herd ✓
- Economical way to raise the stock to a pedigree level ✓
- Initial rapid results (50% improvement in first generation) ✓
- Deformities and unwanted characteristics occur less frequently ✓

(Any 3) (3)

## 4.3 Selection

### 4.3.1 Bell shape of graph

Most of the population produce at the average ✓ (number of population at the average value); some of the population produce above the average; ✓ some of the population produce below the average. ✓ (3)

### 4.3.2 Explanation for improvement

The genes of the later generation improved ✓with regard to milk production/there was a response to selection in this herd. ✓ (2)

### 4.3.3 Selection of animals

The animals in the population that produce above✓ the average (that produce the most milk). ✓ (2)

## 4.4 Survey Genetically Modified Food

### 4.4.1 Reasons why genetic manipulation may be a solution for improving food supply

- Plants that can grow in drought✓
- Production yield is higher✓
- Pest-resistant plants✓
- Virus-resistant plants✓
- Cold-resistant plants✓

(Any 3) (3)

### 4.4.2 Advantages of the genetic modification of plants

- Resistant to drought✓
- Resistant to viruses✓
- Resistant to cold✓
- Resistant to pests ✓

(Any 2) (2)

### 4.4.3 Reasons for supporting traditional breeding

- No negative effects on human health✓
- No negative effects on environment✓
- No chance that new gene will end up in another plant gene✓

(Any 2) (2)

4.4.4 **Potential risks of GM crops**

- GMO crops have not been researched for long and may have a potential health risk. ✓
- Some GMO crops are herbicide resistant and may contribute to the creation of super weeds. ✓ (2)

4.4.5 **Reasons why maize are genetically modified**

- Resistant to herbicides✓
- Resistant to drought✓
- Resistant to viruses✓

(Any 2) (2)

**[35]**

**TOTAL SECTION B: [105]**

**GRAND TOTAL: [150]**