



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2016

## AGRICULTURAL MANAGEMENT PRACTICES

### MARKING GUIDELINES

Time: 3 hours

200 marks

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**These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.**

**The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.**

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**SECTION A**

**QUESTION 1**

|     |        |              |              |              |              |
|-----|--------|--------------|--------------|--------------|--------------|
| 1.1 | 1.1.1  | A            | B            | <del>C</del> | D            |
|     | 1.1.2  | A            | B            | <del>C</del> | D            |
|     | 1.1.3  | <del>A</del> | B            | C            | D            |
|     | 1.1.4  | A            | B            | <del>C</del> | D            |
|     | 1.1.5  | A            | B            | C            | <del>D</del> |
|     | 1.1.6  | A            | <del>B</del> | C            | D            |
|     | 1.1.7  | <del>A</del> | B            | C            | D            |
|     | 1.1.8  | <del>A</del> | B            | C            | D            |
|     | 1.1.9  | A            | <del>B</del> | C            | D            |
|     | 1.1.10 | <del>A</del> | B            | C            | D            |

(20)

|     |        |   |
|-----|--------|---|
| 1.2 | 1.2.1  | K |
|     | 1.2.2  | L |
|     | 1.2.3  | C |
|     | 1.2.4  | E |
|     | 1.2.5  | I |
|     | 1.2.6  | J |
|     | 1.2.7  | B |
|     | 1.2.8  | F |
|     | 1.2.9  | D |
|     | 1.2.10 | H |

(20)

|     |        |                        |
|-----|--------|------------------------|
| 1.3 | 1.3.1  | Pasteurisation         |
|     | 1.3.2  | Depreciation           |
|     | 1.3.3  | Income statement       |
|     | 1.3.4  | Receipt                |
|     | 1.3.5  | Contour banks/contours |
|     | 1.3.6  | Trial balance          |
|     | 1.3.7  | Inventory              |
|     | 1.3.8  | Invoice                |
|     | 1.3.9  | Budget                 |
|     | 1.3.10 | Fixed cost             |

(10)

**50 marks**

**SECTION B****QUESTION 2 FARM PLANNING (PHYSICAL AND FINANCIAL)**

- 2.1 2.1.1 **Explanation of a subsistence farmer**  
 A farmer who produces for their own household and has little or no surplus product  
 Produce is not sold for income (2)
- 2.1.2 **Egg enterprise – commercial or subsistence**  
 Commercial  
 The eggs are sold in supermarkets  
 The farmer produces in excess of their own requirements (3)
- 2.1.3 **THREE main problems in pig enterprise and how these could have been prevented through proper planning**
1. The farmer purchased too many boars
    - This caused her to lose money
    - She should have found out about the ideal sow : boar ratio
  2. The piggery was too close to town
    - People objected to the piggery and she had to move to another farm
    - She should have considered the environmental impact of the piggery
  3. The farm was not properly fenced and the pigs moved onto other farms
    - It was difficult to control pig movements due to poor fencing
    - She should have ensured that all fences were secure (9)
- 2.1.4 **How to modify her production system to produce broilers during the cold season**  
 Modify house design – improved insulation, use of curtaining, bedding  
 Provide warmth in the house – use brooders or heaters to keep birds warm  
 Provide more food since broilers eat more in cold conditions  
 Purchase birds earlier so they are better grown out in winter  
 Purchase fewer birds to reduce financial losses during winter (4)
- 2.2.1 **List of factors that determine whether land is arable or not**
- Slope
  - Rockiness
  - Soil depth
  - Soil drainage
  - Salinity
  - Soil acidity
  - Soil moisture/Water-holding capacity
  - Soil fertility (Any 4) (4)
- 2.2.2 **Discussion of challenges faced by land beneficiaries while establishing the farm.**
- Limited knowledge and experience in farming
  - Limited cash flow during establishment phase
  - Conflict between land beneficiaries regarding management
  - Conflict between land beneficiaries regarding funds
  - High costs of establishing enterprises
  - Generic challenges:
  - Drought
  - Climate change
  - Increased input costs (Any 4) (4)

**2.2.3 SIX important factors to consider when selecting a suitable enterprise**

- Climate – rainfall and temperature
- Soil type and capability
- Water resources
- Market availability
- Distance to markets
- Infrastructure on farm – roads, buildings
- Impact on natural resources
- Labour availability
- Capital
- Consumer preferences

(Any 6) (6)

**2.2.4 TWO suitable enterprises that could be introduced on the farm, with reasons**

Enterprises should match and use listed resources, i.e. arable land and veld, e.g. Beef cattle or sheep on the veld, game

- Low input costs
- Utilise the veld resources
- There is demand for meat

(Any 1)

Grain crops, e.g. maize or wheat on arable land OR cultivated pastures may also be established on arable land

- Utilise arable land
- There is demand for grain
- Grain can be sold for cash or used for livestock enterprise

(Any 1) (4)

**2.2.5 TWO reasons for the land beneficiaries to compile a farm budget**

- To determine input costs
- To determine expected revenue
- To modify production if necessary
- To determine if a loan is required

(Any 2) (2)

**2.2.6 THREE daily tasks that could be carried out in a farming enterprise**

- Stock counts
- Health checks
- Feeding and watering
- General maintenance of facilities, e.g. fences
- Management

(Any 3) (3)

**2.3 2.3.1 Definition of "precision farming"**

It is a modern management approach that enables farming to be more precise and efficient.

It involves measuring and responding to small differences in a field so that the correct treatment can be applied in those areas for improved production and less wastage.

Use of technology, e.g., GIS/satellite tracking

(2)

**2.3.2 TWO advantages and TWO disadvantages of precision farming in SA**

Advantages:

- Less wastage of water and fertiliser
  - Improved crop production
  - Less environmental impact from excess fertilisers
  - More accurate
- (Any 2)

Disadvantages:

- High cost of GIS equipment and specialised machinery
  - Requires a different level of computer and technical skills
  - Cellphone and Internet signals, which may be unreliable
  - Could reduce labour usage - unemployment
- (Any 2) (4)

**2.3.3 THREE pieces of equipment or resources used in precision farming**

GPS system

Soil probes

On-board computer

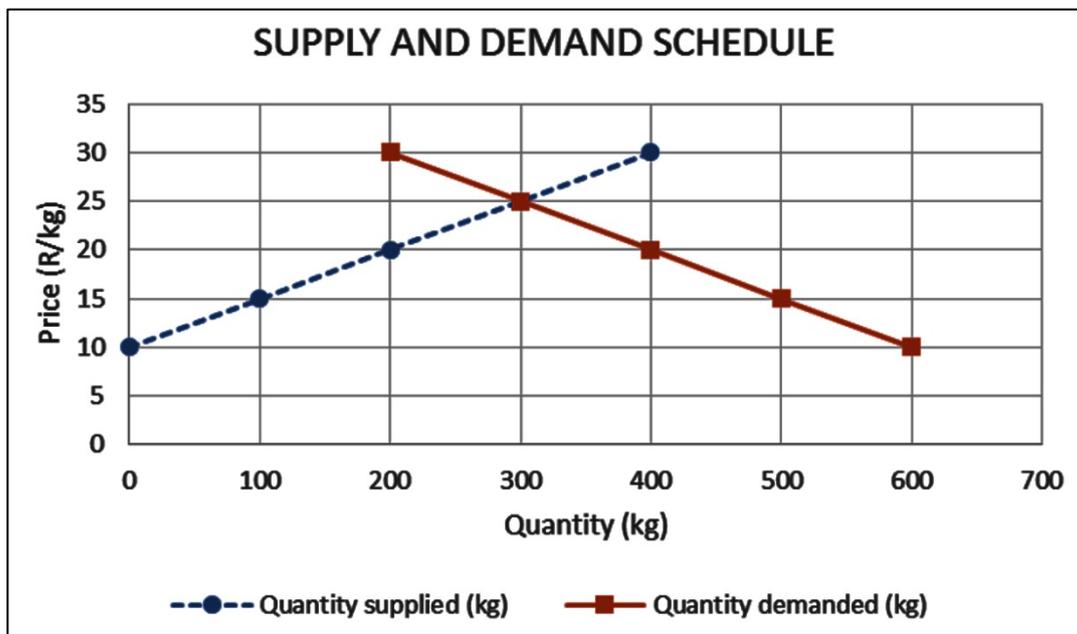
GIS system

Internet access

(Any 3) (3)  
[50]

**QUESTION 3 ENTREPRENEURSHIP, RECORDING, MARKETING, BUSINESS PLANNING AND ORGANISED AGRICULTURE**

**3.1 3.1.1 Supply and demand schedule**



Mark allocation:

- Heading
  - Labelling X-axis and Y-axis
  - Correct supply graph plus label
  - Correct demand graph plus label
- (5)

3.1.2 **Price of the product at the point of market equilibrium**  
R25/kg (1)

3.1.3 **Supply and demand mechanism – free-market or a controlled market.**  
**Explanation**  
Free market  

- Prices are determined by demand and supply
- Prices in controlled markets are determined by other factors (Any 2) (2)

3.1.4 **Impact of drought on the price of maize in South Africa**  
Drought will reduce supply – thus higher prices (2)

3.1.5 **Impact of cheap chicken imports on the supply and demand curve for chicken in South Africa**  
Increase in supply will result in lower price  
Lower price results in increased demand  
Low prices of imported chicken result in high demand for imported product  
Causes reduced demand for local chicken, leading to reduced prices for farmers (2)

3.2 **Income and Expenditure Statement**

| Date                                       | Income          | Value (R) | Date    | Expenditure    | Value (R) |
|--|-----------------|-----------|---------|----------------|-----------|
| 31/3/15                                    | Sale of weaners | 73 000    | 31/3/15 | Marketing cost | 3 650     |
| 25/4/15                                    | Sale of weaners | 54 000    | 25/4/15 | Marketing cost | 2 700     |
|  |                 |           | 17/6/15 | Cattle feed    | 47 000    |
|  |                 |           | 3/8/15  | Protein blocks | 27 000    |
|  |                 |           |         |                |           |
| <b>Total</b>                               |                 | 127 000   |         |                | 80 350    |
| Gross profit = 127 000 – 80 350 = R 46 650 |                 |           |         |                |           |

(9)

3.3 3.3.1 **SIX characteristics that make Ndzaba a successful entrepreneur**

- Risk taker
- Passionate about the product
- Hard working
- Sees business opportunities
- Networking ability
- Shows initiative
- Self-motivated
- Understands market demand
- Self-belief
- Positive/optimistic
- Creative
- Perseverant/resilient (Any 6) (6)

3.3.2 **FIVE main components of a business plan with a brief description of each**

- Description of business – type of legal entity, mission and vision
- Marketing plan – market analysis, marketing channels, advertising
- Operational plan – what will be produced and how
- Financial plan – cash flow forecast, revenue and cost projections
- Risk analysis – strengths and weaknesses, suggested solutions (10)

- 3.3.3 **Example of a fixed asset item in the maize milling business**  
 Milling facility  
 Equipment in the mill (Any 1) (1)
- 3.3.4 **Example of a current asset that would be used in the maize milling business**  
 Maize /milled maize (1)
- 3.3.5 **Marketing channel used by Lethabo Milling**  
 Contract marketing/Formal market (1)
- 3.3.6 **Government initiative and the goals of government in this initiative**  
**AgriBEE**
- Participation of previously disadvantaged people
  - Economic empowerment of previously disadvantaged people
  - Ensure equal, fair income distribution
  - Ensure equal access to opportunities
  - Correct past inequalities
  - Gender and racial equity
  - Land reform and business ownership targets (Any 3) (4)
- 3.4 **1 000-cow beef herd that is run off natural grazing (veld)**
- 3.4.1 **TWO reasons for good record-keeping in this farming system**
- Identify problems
  - Monitor production
  - Plan for the future
  - Make management decisions
  - Know how much to market
  - Monitoring and protection of natural and other resources (Any 2) (2)
- 3.4.2 **TWO advantages and TWO disadvantages of a computerised record keeping system**
- Advantages
    - Easier and quicker to process results
    - Calculations are more accurate
    - More complex calculations are possible
    - Suitable for large herds (Any 2)
  - Disadvantages
    - Requires computer skills (training)
    - Requires constant backup
    - Risk of power failure and data loss
    - Requires electricity
    - Expensive (Any 2) (4)
- [50]**

## QUESTION 4 HARVESTING, PROCESSING, MANAGEMENT AND AGRITOURISM

- 4.1 **Management role is involved in the following scenarios**
- 4.1.1 **Recording staff leave in the leave register**  
Control (1)
- 4.1.2 **Awarding a wage bonus for achieving a production target**  
Motivation (1)
- 4.1.3 **Preparing a weekly roster for tractor activities**  
Coordination (1)
- 4.1.4 **Preparing a business plan for a new enterprise**  
Planning (1)
- 4.1.5 **Arranging farm workers into work teams based on specific skills**  
Organising (1)
- 4.2 4.2.1 **Impact of the drought on the agricultural industry in South Africa**
- Lower crop yields
  - Fewer hectares of crops planted
  - Increased pressure on water resources
  - Water restrictions
  - Decreased grazing available for livestock
  - Forced culling and selling of livestock
  - Death of livestock
  - Degradation of natural resources
  - Increased use of purchased feeds
  - Increased food costs for consumers
  - Reduced food security
  - Reduced water resources
  - Negative impact on SA economy
  - Increased reliance on imported food (Any 7) (7)
- 4.2.2 **OWN opinion on the farming enterprise in SA worst affected by drought? Explanation**  
Any enterprise that relies heavily on water in the form of rainfall, irrigation or piped water, e.g. dairy, pigs, aquaculture  
Explanation of importance of water (2)
- 4.3 4.3.1 **TWO advantages and TWO disadvantages of hand harvesting maize grain**
- Advantages:
- Lower cost/cheaper
  - Less product damage – better quality
  - Low capital investment on equipment
  - Job creation
  - More environmentally friendly (Any 2)
- Disadvantages
- Slower harvesting process
  - Limited areas can be harvested at a time
  - Labour intensive
  - Less efficient (Any 2) (4)

**4.3.2 Method of harvesting most suitable for this farmer. Reason**

Machine harvesting – 100 ha is a very large area, too vast for hand harvesting (2)

**4.3.3 TWO factors that would determine when a farmer harvests the maize grain**

- Moisture content of grain
- Crop yield
- Availability of labour
- Availability of harvesting equipment
- Market availability and demand
- Weather conditions (Any 2) (2)

**4.3.4 THREE ways in which the quality of maize can deteriorate as a result of poor post-harvest handling and storage**

- Damage by insect pests
- Damage by rodent pests
- Spoilage due to moisture
- Contamination by chemicals or foreign substances
- Deterioration due to extreme heat
- Cracking/drying out due to extended storage (Any 3) (3)

**4.4 4.4.1 THREE reasons for the grading of agricultural produce such as meat**

- Enables a standardised pricing structure
- Consumers know what they are getting
- Provides feedback to producers
- Legal requirement for selling meat
- Used to indicate market trends (Any 3) (3)

**4.4.2 FIVE characteristics on which the grading of beef carcasses is based**

- Age
- Fatness
- Conformation
- Sex
- Damage (5)

**4.4.3 Importance of the cold chain in the handling and storage of fresh meat, and how it is achieved**

- Prevent spoilage by microorganisms
- Meat must be chilled from slaughter, during processing and in storage
- Meat must be transported in refrigerated containers and kept cold in the retail outlet
- Consumers must keep meat cold to prevent spoilage (Any 2) (3)

- 4.5 4.5.1 **FIVE requirements for suitable packing material for meat**
- Non-toxic
  - Impermeable to gasses or odours
  - Easily cleanable
  - Easily disposable
  - Low cost
  - Lightweight
  - Transparent
  - Can withstand moisture
  - Does not harbour bacteria
  - Water tight
- (Any 5) (5)
- 4.5.2 **Evaluation of suitability of packing materials for fresh meat, with reference to the requirements**
- (a) **Cardboard**  
Not suitable – does not withstand moisture, not easy to clean
- (Any 1) (2)
- (b) **Polystyrene**  
Suitable – can be cleaned, does not absorb odours, low cost, lightweight
- (Any 1) (2)
- (c) **Wood**  
Not suitable – not easy to clean, not lightweight, not easily disposable
- (Any 1) (2)
- 4.6 **Method of preservation used in the production of the following products**
- 4.6.1 **Jam**  
Application of sugar
- (1)
- 4.6.2 **Biltong**  
Salting and drying
- (1)
- 4.6.3 **Raisins**  
Drying
- (1)
- [50]**

|                  |
|------------------|
| <b>150 marks</b> |
|------------------|

**Total: 200 marks**