



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2019

AGRICULTURAL MANAGEMENT PRACTICES
MARKING GUIDELINES

Time: 3 hours

200 marks

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.

SECTION A**QUESTION 1**

- 1.1 1.1.1 C
1.1.2 C
1.1.3 A
1.1.4 B
1.1.5 D
1.1.6 D
1.1.7 D
1.1.8 C
1.1.9 A
1.1.10 B
- 1.2 1.2.1 H
1.2.2 I
1.2.3 D
1.2.4 F
1.2.5 J
1.2.6 G
1.2.7 E
1.2.8 C
1.2.9 K
1.2.10 B
- 1.3 1.3.1 Sweetveld
1.3.2 Calibration
1.3.3 VRA/Variable-rate application technology
1.3.4 Planning
1.3.5 Soil texture
1.3.6 Marketing chain
1.3.7 Diversity
1.3.8 Integrated pest control system
1.3.9 Crop rotation
1.3.10 Soil

SECTION B**QUESTION 2 RESOURCE UTILISATION, LAND USE AND FARMING SYSTEMS****2.1 2.1.1 Explain****(a) Effect of clayey soil on water infiltration**

The higher the percentage clay (fine texture), the less macropore space there is in the soil, which decreases the water infiltration.

OR

The less the clay (coarser texture), the more macropore space there is in the soil, which increases the water infiltration.

(b) Effect of single-grain structure on tillability

A single-grain structure possibly suggests sandy soil, which is known as light soil because it is less clingy and therefore easily tillable.

(c) Effect of shallow soil on aeration

Shallow soil suggests impenetrable layers with little macropore space near the surface and therefore it will be poorly aerated.

(d) Effect of low soil temperature on the absorption of water and nutrients

Low soil temperatures reduce the absorption rate of water and nutrients because all processes are slowed down with too-low temperatures.

2.1.2 Discuss**(a) Mineral content and drainage of red soil**

Soil with a red colour suggests the presence of iron as well as good drainage, little moisture with a lot of oxygen.

(b) Growth rate and microbe population of soil with a pH of 4

Most plants grow and microbes function optimally at a pH of 5,5 to 7,0. Therefore a pH of 4 (acid) will impede plant growth and also inhibit certain microbe populations.

2.2 Case study**2.2.1 Examples of capital****(a) Fixed**

Land/farm, borehole, reservoir (Any 2)

(b) Movable

Animals, irrigation, orchards, perennial pastures (Any 2)

(c) Operating

seed, wages, contract work (Any 2)

2.2.2 Problems associated with capital

- Capital is scarce
- Capital is expensive because of interest rates
- Capital is subject to risk
- Overcapitalisation
- Undercapitalisation
- Additional expense for capital redemption
- Sufficient collateral/security for loan may not be enough

(Any 3)

2.2.3 Methods to improve productivity of farmland

- Improved irrigation methods/water management
- Precision farming/scientific farming methods
- Mechanisation
- Modern farming methods, e.g. no-till production, mulch processing
- Develop/use disease-resistant cultivars and breeds
- Sensible use of fertiliser and pesticides
- Improved labour management and training
- Proper daily/monthly planning
- Consolidation of possible uneconomic units

(Any 3)

2.2.4 Explain**(a) Mixed farming**

Farming consisting of both crops and animals.

(b) Organic farming

Organic farming prohibits chemical inputs.

2.2.5 Discuss intensive stock farming**(a) Population density**

High population density/many animals on a limited/small area.

(b) Feed

Animals get a balanced ration at fixed times.

(c) Labour costs

The labour costs are high because a lot of labour is required (labour intensive).

2.2.6 Proof of being commercial farmer

"markets his fruit and meat in the local shopping centres as 'organic'."

2.2.7 Advantages of camp system

- Various herds of a kind can be kept.
- Different types of animals can be kept.
- Facilitates handling/treatment/gathering, etc.
- Pasture rotation can be applied.
- Prevents damage to vegetation.
- Field types with the same palatability and potential can be grouped into camps.
- Animals are kept safe and protected.
- Erosion areas and water paths can be fenced off separately.
- Facilitates controlled burning of veld.
- Facilitates stocking rate according to carrying capacity.

(Any 3)

2.2.8 Types of temporary labour

- Casual labour, e.g. contractor who built reservoir.
- Seasonal labourers, e.g. contract work/local community harvesting fruit.

2.2.9 Increase in productivity of labourers

- Labourers live on farm – better conditions of living.
- Labourers share in profits – better conditions of service/motivation.
- Labourers get training – better skills.

(Any 2)

2.2.10 Labour law

The Basic Conditions of Employment Act OR Act 75 of 1997

2.3 Photograph of pasture**2.3.1 Overgrazing****2.3.2 Reasons for resting pastures**

- To form seed – for re-establishment
- To enhance root growth
- To restore – formation of growth above the ground/restoration of biomass

(Any 2)

2.3.3 Define carrying capacity

The number of hectares of grazing required to maintain one large stock unit (LSU) and her calve for a year.

QUESTION 3 AGRITOURISM AND MARKETING**3.1 Article: alpacas****3.1.1 Uses of alpacas**

- Breeding purposes/breeding material
- Fibre products
- Shepherds
- Pets

(Any 3)

3.1.2 Definition of niche market

A niche market is the supply/marketing of a unique product/service to a specific group of customers/target group.

3.1.3 Reasons why niche markets are more common

- International recognition of regions in the future, leading to a regional premium – region-related niche market.
- Economic survival – does not want the large debt to expand – supplies unique product with own target market – speciality niche market.
- Technological development may lead to wider variety of products on a smaller area – greater opportunity for niche products.
- Smaller farms are often more efficient, making better profits than megafarms.
- Emotional connections with customers and their needs – creates emotional niche market.
- Increased demand for quality products – quality niche market.
- Demand for traceability of products – niche markets.

(Any 3)

3.1.4 Why the warning that alpacas are a niche market

- Market for alpaca-fibre processing is still small – "fibre-processing branch of alpaca production does not suit everybody".
- Prices of alpaca fibre still vary considerably, therefore prospective producers must be careful before they enter the market.
- Price of pregnant animals may require a large capital outlay in a market that is a bit unsure.
- Price of male alpacas not yet proven as fertile is low and does not ensure a good investment.

(Any 3)

3.2 Business plan**3.2.1 Reasons for compiling business plan**

- It tests feasibility and viability of the business idea.
- It assists in determining financial needs.
- Part of presentation to obtain capital from a financial institution.
- It determines the daily activities.
- It provides knowledge of marketing matters.
- It indicates the position of the enterprise at present and in the future.
- It indicates management team, resources, etc.

(Any 4)

3.2.2 SWOT analysis

S – Strengths

W – Weaknesses

O – Opportunities

T – Threats

3.2.3 Principles of production objectives

Objectives must comply with SMART, i.e.

S – Specific

M – Measurable

A – Attainable

R – Realistic

T – Time frame

(Any 2)

3.3 Agritourist**3.3.1 Definition of agritourist**

Someone who leaves his home/travels away from his home and visits agricultural activities/buildings with an agricultural function to the advantage of that rural area/without harming it.

3.3.2 Identify the types of agritourism

(a) educational tourists

(b) product-route tourists

3.3.3 Ways in which agritourism benefits local community

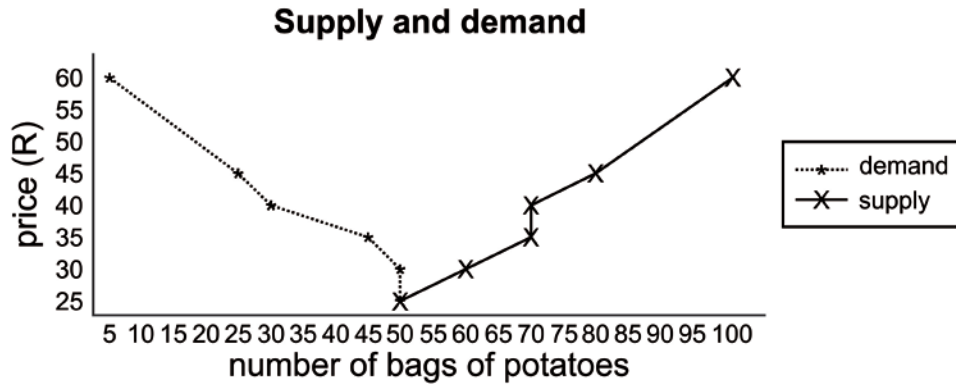
- Financial income for community.
Cash-flow benefits.
- Contributes to improvement of the infrastructure of the community, e.g. roads, schools, housing of local residents.
- Creating jobs in the community.
Counters the depopulation of rural areas.
- Educational value for community.
Training opportunities.
- Socio-economic wealth.
- Marketing opportunities for an area with its resources and products.
- Increase in land values of area.
- Better utilisation of marginal land in community.

(Any 3)

3.4 Supply and demand

3.4.1 Line graph

Line graph to show relationship between price, supply and demand of bags of potatoes.



Mark allocation:

Full heading

Correctly labelled and correct calibration of x-axis.

Correctly labelled and correct calibration of y-axis.

Correct units for x-axis and y-axis.

Line graph.

Correct as a whole.

3.4.2 Effect of price on supply and demand

The higher the price the higher the supply the lower the demand

OR

The lower the price the lower the supply the higher the demand

3.4.3 Factors influencing demand for potatoes

- Consumers' income/consumer spending.
- Number of consumers.
- Social factors/age of consumers/educational level of consumers.
- Legislation.
- Advertising/promotion of potatoes.
- Research on, for example, advantages/disadvantages of potatoes.
- Consumers' preferences change.
- Price of competing/complementary products.

(Any 3)

3.4.4 Concept of market equilibrium

The quantity supplied equals the quantity demanded.

3.4.5 Marketing method

Free marketing.

3.4.6 Other marketing methods

- Co-operative marketing
- Controlled marketing
- International marketing

3.4.7 Marketing costs during production

- Transport costs
- Storage costs
- Packaging costs
- Preserving costs
- Processing costs
- Advertising/promotional costs
- Taxation

(Any 3)

QUESTION 4 FARM MANAGEMENT, FINANCIAL PLANNING AND ADDING VALUE TO HARVESTS**4.1 Budget****4.1.1 Calculate profit or loss**

Estimated expenses = 9 300,00 + 33 345,00 + 8 800,00 + 35 500,00
 + 4 308,00 + 19 500,00 + 8 756,00 + 3 500,00
 = R123 009,00

Estimated income = 470 000,00 + 7 500
 = R477 500,00

Profit/Loss = Income – Expenses
 = R477 500,00 – R123 009,00
 = R354 491,00 profit

4.1.2 Ways to increase income

- Livestock could be sold at auctions to get a higher price, but commission must be taken into account/more markets.
- Selling the sheep wool/skins may also increase the income.
- Processing the meat – added value.
- Established pastures/natural pastures could reduce the costs of feed and thus increase the income (profit).
- Increase the number of sheep through improved fertility.
- Storage – selling during peak times when prices are high.

(Any 2)

4.1.3 Measures to be more environmentally friendly

- Could start to farm organically.
- Reduce chemical pest control.

4.1.4 Type of budget

Operational budget/Branch budget/Enterprise budget

4.1.5 Reason for type of budget in Question 4.1.4

- The budget is only for the sheep production enterprise.
- The budget is only for one branch of the farming enterprise.

(Any 1)

4.1.6 Type of budget

Partial budget

4.1.7 Define the terms

(a) **Budget**

A budget is an estimation/expectation of income and expenses over a specific period in the future.

(b) **Income statement**

A statement that is compiled to show all the income and expenses during a particular financial period.

(c) **Balance sheet**

It shows the financial position of the farming enterprise at a particular date and gives a summary of the assets and liabilities of the business.

OR

It helps the owner to indicate how the capital was obtained and used, also the assets and liabilities at a particular date.

4.2 Calculate break-even point

$$\begin{aligned} 4.2.1 \quad \text{Break-even point} &= \frac{\text{Fixed cost}}{\text{Price} - \text{Variable cost}} \\ &= \frac{R520,00}{R3,50 - R0,70} \\ &= \frac{R520,00}{R2,80} \\ &= R185,71 \end{aligned}$$

4.2.2 Management skill

Financial skill

4.2.3 Applying precision farming in beef cattle enterprise

- Monitoring feed consumption, feeding-pen movement, temperature, weight gain, paralysis, milk production, etc.
- Determining oestrus using temperature measurement – AI.
- Determining diseases using heartbeat/temperature measurement.
- Animal tagging – identification.
- Investments in care and feeding.

(Any 3)

4.3 4.3.1 Manually harvesting fresh produce and not mechanically

- Reason: No/little damage to the product because of softer/safer handling by hand.
Comparison/Substantiation: whereas mechanically there is more damage.
- Reason: Selective harvesting/products are selected by hand.
Comparison/Substantiation: whereas mechanically everything (green and ripe) is harvested.
- Reason: Cheaper by hand because of little maintenance, etc.
Comparison/Substantiation: whereas mechanical harvesting is expensive, especially on a small scale.

(Any 2 reasons with comparison/substantiation)

4.3.2 (a) Define grading

Grading is the process in which products are differentiated according to laid-down standard regulations.

OR

Grading involves the process during which the product with a good appearance is separated from the product with a poor appearance.

(b) Visible criteria for grading grain products

- Presence of foreign seed/substances.
- Presence of diseases/insects.
- Presence of broken/damaged grains.

4.3.3 Advantages of value-adding functions for the consumer

- Increase price of raw materials – higher income.
- Product is available throughout the year.
- Product has a longer shelf life.
- Create jobs.
- Create goodwill.

(Any 3)

4.3.4 Cooling**(a) Utmost importance of cooling**

It means that the cooling, which slows down the life processes of microorganisms as well as the activity of enzymes causing spoilage of the product, must take place as quickly as possible after harvesting.

(b) Types of cooling

- Cold-air cooling
- Hydrocooling
- Ice-pack cooling

4.3.5 Disadvantages of storing products in small quantities

- Products are damaged more easily.
- Cost intensive because of regular handling.
- Labour intensive.
- In the long run packaging materials are more expensive.
- Pests may cause a lot of damage.
- Theft may take place.
- Marketing is more difficult.
- Difficult to move and transport large quantities.

(Any 3)

4.3.6 Reasons for packaging products

- Protection of the product from contamination, moist, light, etc.
- Products are handled more easily.
- Easier to transport product.
- Information is communicated on packaging materials.
- Identification of the product.
- Value is added.

(Any 3)

Total: 200 marks