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NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2024

AGRICULTURAL MANAGEMENT PRACTICES

MARKING GUIDELINES

Time: 3 hours 200 marks

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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 B

1.1.5 A

1.1.6 D

1.1.7 C

1.1.8 D

1.1.9 A

1.1.10 C

1.2 MATCHING ITEM / COLUMN

1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6	1.2.7	1.2.8	1.2.9	1.2.10
D	K	G	L	N	J	B	C	F	A

1.3 AGRICULTURAL TERMS

1.3.1 Subsistence farming

1.3.2 Topography

1.3.3 Crop rotation

1.3.4 Contour lines

1.3.5 Argillaceous soil / clay soil

1.3.6 Soil / land

1.3.7 Global Positioning System (GPS)

1.3.8 Breeding records / Production records / Fertility records / Pedigree records

1.3.9 Planning/ Farm planning

1.3.10 Receipt

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1.4 UNDERLINED WORD(S)

1.4.1 Compensation for Occupational Injuries and Diseases Act / COIDA

1.4.2 Humidity / Water vapour

1.4.3 Credit / Loan / Loaning

1.4.4 Business plan

1.4.5 Integrated management / approach / integrated pest control / evaluation

1.4.6 Geographic Information System (GIS)

1.4.7 Niche market

1.4.8 Minimum wage

1.4.9 Permanent / Full time

1.4.10 Electronic funds transfer (EFT)

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SECTION B

QUESTION 2 RESOURCE UTILISATION, LAND USE AND FARMING SYSTEMS

2.1 ARTICLE

2.1.1 **Name TWO methods that the farmer (producer) used to improve soil productivity.**

- Planted cover crops
- High-pressure grazing

2.1.2 **Soil status can be determined by using various methods. Provide a method to determine ...**

(a) **soil texture in the veld.**

Hand-texturing method is a measure of the behaviour of a small handful of soil when it is moisturised and kneaded to a ball that is slightly bigger than the size of a golf ball (NSW Agriculture, 1988) or bolus and squeezed to form between the thumb and index finger.

OR

The veld method of determining soil texture is to take a moist soil sample and roll it in a worm or a ball.

(b) **chemical properties of a soil sample that is sent away.**

Soil laboratory analyses/Soil analyses

2.1.3 **Efficient soil depth gives an indication of the volume of soil that plants can use.**

Name TWO natural phenomena that can reduce efficient soil depth.

- Waterlogged layers
- Rocky layers
- Acid subsoil
- Compacted layers
- Soil erosion

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2.1.4 **Distinguish between the following terms:**

(a) **Physical and chemical soil properties**

(Must indicate differences)

Physical soil properties: are the texture, structure, mass density, porosity, consistency, temperature, colour and resistance.

Chemical properties: are the levels and availability of nutritional mineral elements for the plants and the chemical parameters of soil regarding their restoration or availability.

(b) **Human resources and natural resources**

Human resources: are the division of a business that is responsible for finding, recruiting, screening and training job applicants. HR divisions also handle employees' remuneration, benefits and terminations / workers.

Natural resources: are materials or substances occurring naturally. These substances are in a raw, natural form and are valuable to humans in this way, for example, air, water, soil, animals, forests, minerals and fossil fuels.

2.1.5 **Discuss soil conservation in terms of planted cover crops and organic material in the soil.**

Soil conservation means that the fertility of the soil is maintained by protecting the soil from erosion, loss of nutrients, pollution and degradation.

Planted cover crops play an important role in soil conservation by binding the soil and limiting / preventing erosion. Cover crops can also decrease the difference between day and night temperatures more than average temperatures, resulting in less temperature variability.

Organic material is important in soil conservation because increased organic material = reduced erosion. Organic matter increases the water-holding capacity of the soil. It also contributes to the dark colour of the soil. These two soil properties increase its absorption of heat, thereby increasing the soil temperature.

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2.1.6 STATEMENT

'Bignell divided the planted pastures into camps to be able to apply high-pressure grazing.'

(a) **Name an ADVANTAGE of camps in animal production.**

- They allow rotational grazing as cattle can be moved from one camp to another.
- Veld can rest and recover.
- Overgrazing can be prevented.

(b) **Give THREE principles that she should take into consideration to make camps suitable for rotational grazing.**

- Shade or protection must be provided in each camp.
- Drinking water is essential.
- Distance to water must be central.
- Size of camps.
- Type of field
- Field capacity
- Topography

(c) **For the optimal development and utilisation of the cover crops, camps must be rested for long periods. Justify this farmer's decision.**

- To allow root development after grazing.
- Plants can recover after grazing.
- Maximum production of cover crops.
- Seed formation and establishment of young plants.

2.1.7 **'Cover crops increased the number of grazing days because the planted pastures can be grazed more than once. They also increased the veld's carrying capacity.' Define the term *carrying capacity*.**

Carrying capacity refers to the combined capacity of all the feeding sources on a specific farm to feed animals for a year.

OR

Number of large stock units (LSU) / ha / year.

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2.1.8 **High-pressure grazing is effectively applied using good record-keeping.**

(a) **Identify the TWO TYPES of records that are kept.**

- Grazing records: Amount of pasture utilised, carrying capacity of veld.
- Cattle records: Cattle numbers, production, reproduction records.
- Financial records.

(Any 2)

(b) **Explain the concept of *good record-keeping*.**

The record meets the following requirements:

- Accurate / reliable / applicable to farming
- Complete
- Understandable
- Useful
- Correct information is gathered
- Correct information for a specific purpose
- Must satisfy the farming enterprise's needs
- Simple (easy) to use
- Information must be available for use all the time
- Records must be up to date

2.1.9 **Use the illustration of grass production and root growth to predict what would happen to the following if short high-pressure grazing is alternated with long rest periods.**

(The growth vigour of the veld increases, and clumps of grass become bigger, which means the grass production will increase because root recovery could take place. Carrying capacity increases.)

(a) **Size of clumps of grass**

Increases / Big / Bigger

(b) **Grass production**

Increases / More / High

(c) **Carrying capacity**

Increases / More / High

(d) **Root growth**

Increases / More / High

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2.2 PRECISION FARMING

2.2.1 **List THREE technological aids (devices) that can be used in ACTION 1 to collect data.**

- Global positioning system (GPS)
- Geographic information system (GIS)
- Yield monitors
- Remote controllers/Drone
- Random frequency identification (RFID)

2.2.2 **In the case of a commercial farming system, record-keeping is done by storing records in a database (computer). Briefly explain the advantages of a database.**

- Calculations can be done more accurately.
- More information is stored in a smaller space.
- Information is more accessible/ faster/ efficient
- Comparison of data can be done easily.
- New, tested (reliable) programs can be used for records.
- Transfer of data is easier.

2.2.3 **Explain why integrated planning should take place before ACTION 4 (implementation).**

- The implementation of decisions can take place smoothly and purposefully.
- Overlapping and wastage during implementation can be limited.
- Planning can identify potential problems, making adjustment during implementation easy.
- Implementation can take place purposefully.
- Standard of the work that has to be done can already be identified in the planning phase, which could lead to good or higher production.
- Saving money/lowering costs

2.2.4 **In ACTION 3, a farmer has to adjust or even replace the implements that are going to be used. Describe the decision-making steps that the farmer should follow to determine which implement is going to be used or replaced.**

- What are the advantages or disadvantages of buying, renting or borrowing the implement? / Saving money / Lower costs
- Are there perhaps local services that can be used?
- Can you or do you have staff that can repair the new implement or does someone have to be sent for training.
- Which type or kind of implement is required for the specific purpose?

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QUESTION 3 SUSTAINABILITY, BUSINESS PLAN, ENTREPRENEURSHIP AND MARKETING

3.1 BUSINESS IN DIFFERENT AGRICULTURAL SECTORS

3.1.1 **Identify the AGRICULTURAL SECTOR in which the following businesses operate:**

BUSINESS A: Secondary agricultural sector

BUSINESS B: Primary agricultural sector

3.1.2 **In your own words, state what is meant by the TERTIARY agricultural sector.**

The tertiary sector refers to the goods or services that the primary and secondary agricultural sectors need to produce their products.

3.1.3 **Businesses A and B are doing their annual *business survival strategy planning.***

(a) **Business A has decided *to specialise in drying peaches*. Justify the business's decision.**

- Lower expenses to buy a variety of implements / equipment
- Facilitate management
- Established markets
- Less labour training

(b) **Business B has decided *to apply diversification by starting a wine cellar*. Justify this business's decision.**

- The farmer and his/her staff are busy with various tasks throughout the year.
- Less risk because there are various sources of income.
- Less risk because various markets can be targeted.
- Byproducts can be utilised by several branches.
- Equipment, tools and implements are used better.

3.2 TYPES OF MARKETING

3.2.1 **Name the type of free-market system used in TYPE A.**

Auctioning / Selling stock at auctions.

3.2.2 **Briefly explain the advantages of TYPE A marketing.**

- Promotion is done for the farmer.
- The market is bigger than the local market.
- Small-scale farmers have access to auction sales.
- Payment by the buyer is guaranteed.

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3.2.3 **A farmer uses TYPE A marketing and send the ADVERTISEMENT via email to a target market. Identify this ADVERTISING METHOD.**

Online / electronic / digital advertisement

3.2.4 **Explain the purpose of the type of advertising method identified in QUESTION 3.2.3.**

- To inform target market about the auction.
- To persuade target market to buy cattle and sheep.
- Reach a bigger market online

3.2.5 **For a marketing plan to be successful, the farmer or marketer has to consider certain aspects of the consumer / buyer. Name TWO of these aspects.**

- Consumer's needs / wants / interests.
- What the consumer is willing to pay.
- Income of consumer.
- The distance that a consumer/buyer has to travel/location

3.2.6 **A commercial farmer has decided against TYPE B MARKETING. Defend the farmer's decision.**

- The farmer is not happy with the local price.
- The farmer's farm may not be situated well to reach customers.
- The risk of robbery is great.
- Does not want strangers on the farm.
- The volumes being sold are too small.
- Consumers may get hurt on farm

3.3 AGRITOURISM

3.3.1 **Identify the TWO types of agritourism in the advertisement.**

- Guest farm
- Product routes / Agri-routes / Adventure routes

3.3.2 **Explain the term *agritourism*.**

Agritourism is a form of commercial enterprise that links agricultural production and/or processing with tourism to attract visitors to a farm or other agricultural enterprise with the purpose of entertaining or educating the visitors while income is generated for the farm or enterprise.

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3.4 GRAPHS

3.4.1 **Provide appropriate headings for GRAPH A and GRAPH B.**

GRAPH A: Supply curve

GRAPH B: Demand curve

3.4.2 **Explain the trend that can be seen in GRAPH B.**

As the price of the product decreased, the purchase / sales / demand for the goods / products increased.

OR

As the price increased, the demand / sales / purchase of the product decreased.

3.4.3 **Distinguish between the terms 'market equilibrium' and 'oversupply'.**

Market equilibrium means the demand for, and supply of a product are the same.

Oversupply means there is an excess of a product in the market. This can be caused by many factors, such as a new, better product that the consumer buys or a product price that is too high.

3.4.4 **Name TWO factors that may affect the demand for a product.**

- Quality of the product.
- Price of the product.
- Price of competing products.
- Preferences of consumer.
- The usefulness of the product.
- The size of the family.
- The income of the consumer.
- Tradition and religious conviction of the consumer.
- Number of consumers.

3.4.5 **Discuss the effect that a lower price (S_2) may have on sales.**

When the price decreases, more products / goods are sold.

3.4.6 **Explain what could have caused the lower price (S_2) in QUESTION 3.4.5.**

Causes

- Oversupply of goods / products.
- Reasonable price compared with competing products.
- Good product / value for money.

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3.5 VARIOUS AGRICULTURAL LAWS

3.5.1 **In paragraph 3, reference is made to a specific regulation of the Foodstuffs, Cosmetics and Disinfectants Act. Name the regulation.**

Labelling regulation / legislation (law)

3.5.2 **'... there are also laws to protect those helping to make the product, …'. Which legislation is referred to here?**

Labour Relations Act / Labour Law

3.5.3 **The information that must be on the label of a product is regulated by law. List FOUR aspects that should be on the label.**

- Product name
- Composition
- Ingredients
- Name and address of manufacturer
- Nutritional information
- Presentation of product
- Expiry date
- Weight/Volume
- Depending on the nature of the product, safety warnings and symbols may be required.
- Origin of product
- Genetically manipulated organisms (GMO) in product

3.5.4 **Briefly explain the purpose of the following Acts:**

(a) **Marketing of Agricultural Products Act (Act 47 of 1996).**

- To increase market access for all participants.
- To promote the viability of the agricultural sector.

(b) **Employment Equity Act (Act 55 of 1998).**

- To promote shared equity in the workplace.
- To prevent unfair practices such as discrimination.
- Each person has the right to fair labour practices.
- Each employee has the right to join a union.
- Employer has the right to establish an employer's organisation.

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QUESTION 4 FARM MANAGEMENT, FINANCIAL PLANNING AND ADDING VALUE TO HARVESTS

4.1 THE STRUCTURE OF A MIXED COMMERCIAL FARMING ENTERPRISE

4.1.1 **Identify the type of diagram that was used in the representation above to illustrate the business structure of the farming enterprise.**

Organogram.

4.1.2 **In which TWO of the management tasks (motivation / control / coordinating and evaluation / planning / organising) would the above diagram be used most? Substantiate your answer.**

- Planning phase
- Motivation: To see how many staff can / should be hired, qualifications
- Organising
- Motivation: To make staff function effectively
- Control
- Motivation: Measuring productivity
- Coordinating and evaluation
- Motivation: Getting staff to work together and thereby increasing productivity
- Motivation
- Motivation: To motivate staff to be productive.
- Overall motivation: To understand the structure of the farming / business and to have management take place effectively.

4.2 MECHANICAL HARVESTING / MANUAL HARVESTING

4.2.1 **List THREE disadvantages of mechanical harvesting.**

- Mechanical harvesting could reduce labour costs by up to 80% per hectare compared with manual harvesting.
- Requires maintenance.
- Expensive / capital intensive.
- Specialised / Specialised workers.
- May damage product.
- Need trained / specialised labour.

4.2.2 **Give THREE factors that should be taken into consideration in harvest planning.**

- Time of harvesting.
- Amount of labour.
- Harvesting method / Way of harvesting.
- Availability of harvesting equipment / Transport.
- Protective clothing for the harvesting process.
- Amount of harvesting equipment.
- Storage facilities.
- Finances / Money.

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4.2.3 **Compare manual harvesting and mechanical harvesting in terms of productivity and initial cost during the harvesting process.**

Manual harvesting
Productivity: Slower / takes longer / lower productivity.
Initial cost: Cheaper than mechanical harvesting.

Mechanical harvesting
Productivity: Faster / Higher productivity.
Initial cost: The initial cost is higher than for manual harvesting.

4.2.4 **A farm's labour cost could very easily become the biggest expense. Name TWO ways in which this expense may be reduced.**

- Mechanise / mechanisation.
- Plant crops that are less labour-intensive.
- Hiring seasonal labour.

4.3 QUALITY CONTROL, GRADING AND HANDLING FRESH PRODUCE

4.3.1 **Pre-harvest assessment is carried out to limit contamination of products.**

Name TWO pre-harvest assessments that a farmer should carry out in each of the following sections:

- **Harvest containers**
  The containers must be available.
  The containers must be clean.
  The containers must be placed well.
  The containers must be safeguarded before and after harvesting.

- **Harvesting equipment**
  Must be available if it has to be bought.
  Must be in a good condition / serviced.
  The correct equipment must be available.

4.3.2 **Processed farm products should comply with certain legal requirements. The Agricultural Product Standards Act (Act 119 of 1990) regulates these requirements. Name the TWO aspects that are regulated by the mentioned Act.**

Standard requirements and grading requirements

4.3.3 **According to the article, quality control is the cornerstone of the fresh produce industry. Justify this statement.**

- To support long-term existence and growth.
- To ensure food security.
- To maintain international standards to be able to be part of the international market.

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4.3.4 **'Chances are also good that the quality of the products decreases during the time they are being transported or stored.' (Paragraph 3)**

(a) **Name TWO characteristics of reliable transport.**

- Correct type of transport for the specific product / Do not damage the product
- Temperature must be controlled.
- Vehicle must be disinfected between loads.
- Odours must be avoided.
- Animal and plant products should not be transported in the same manner.

(b) **Describe TWO factors that would determine the method of storage.**

- The relative humidity (RH) of the environment during the period of storage.
- Moisture content of the product.
- Temperature.
- Volume/quantity.
- Type of packaging

(c) **Give ONE method that may be used in the fresh produce industry to store products effectively.**

- Store fruit and vegetables below 10 °C / cooling / cooling rooms.
- Buckets, bamboo, clay pots (traditional).
- Store / shade cloth / structure with good ventilation.

(d) **Identify TWO disadvantages of small-scale fresh produce storage.**

- Products are handled frequently.
- Packaging material is more expensive over a longer period of time.
- Products can be damaged more easily.
- Theft may occur.
- Pests may cause a lot of damage.
- May make marketing more difficult.

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4.3.5 **In the last sentence of the article reference is made to 'distribution channels'.**

Explain the term to clearly show the value and meaning of distribution channels.

- Distribution channel is the channel followed by the product from manufacturing (production) to consumer.
- It is essential for the channel to be the most efficient channel to ensure that the quality of the product is not lost.
- The channel must also be cost-effective for the product to reach the target market.

4.4 EXAMPLES OF DIFFERENT METHODS TO STORE GRAIN

In which storage method the moisture content is managed best? Substantiate your answer.

Method A
The silos are better insulated than in Method B / Silos' internal temperature and humidity can be regulated.

4.5 DIFFERENT TYPES OF PACKAGING MATERIALS

4.5.1 **List THREE advantages of packed fresh produce.**

- The product is protected from bruising.
- Makes handling easier.
- Protects the product from contamination / dust / insects / moisture / light / odour.
- Packaging can communicate information to the consumer.
- Brand is easily identifiable for the consumer.
- It looks more attractive / prettier to the consumer.
- It increases the value of the product.
- It extends the product's shelf life.

4.5.2 **Explain the farmer's decision to transport and market strawberries in firm packaging.**

- To protect the soft strawberries from bruising.
- Easy to put labels or information on it.
- The shape makes it attractive.
- Makes storage and transportation easier.

4.5.3 **The transportation of fresh produce and livestock has to comply with certain rules and regulations. Explain TWO requirements that vehicles have to comply with when *livestock* are transported.**

- Sidewalls must be sufficient / Sufficient ventilation / Safe transport.
- Floor should not be slippery.
- Height of the multilevel vehicle must be sufficient.
- Enough space.
- Ventilation.
- Clean / Hygienic.

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4.6 DIFFERENT PROCESSES THAT ARE USED TO EXTEND SHELF LIFE OF FARM PRODUCTS

4.6.1 **Identify a METHOD (A or B) that is used in each of the following processes:**

PRESERVATION: Method A

PROCESSING: Method B

4.6.2 **Briefly explain how METHOD A inhibits the growth of microorganisms.**

Removal of water (moisture) prevents microorganisms from growing.

4.6.3 **Distinguish between the pasteurisation and sterilisation of products.**

- Pasteurisation is a limited heat treatment (below 100 °C) that kills some organisms.
- Sterilisation is a longer heat treatment (above 100 °C) that kills all organisms.

Total: 200 marks

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