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SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

AGRICULTURAL MANAGEMENT PRACTICES

MAY/JUNE 2024

MARKS: 200

TIME: 3 hours

This question paper consists of 14 pages.



INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO sections.
2. Answer ALL the questions in the ANSWER BOOK.
3. Read the questions carefully and answer ONLY what has been asked.
4. Number the answers correctly according to the numbering system used in this question paper.
5. You may use a non-programmable calculator.
6. Show ALL steps in calculations.
7. Start EACH question on a NEW page.
8. Write neatly and legibly.

SECTION A**QUESTION 1**

1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1.1 to 1.1.10) in the ANSWER BOOK, e.g. 1.1.11 D.

- 1.1.1 Type of veld found in areas with sandy soils and high rainfall:
- A Sweetveld
 - B Mixed veld
 - C Sourveld
 - D Cultivated veld
- 1.1.2 Planting depth will progressively increase in the following soils:
- A Sand; loam; clay
 - B Loam; sand; clay
 - C Loam; clay; sand
 - D Clay; loam; sand
- 1.1.3 Remote sensing is possible because plants that experience stressful conditions ... light wavelengths differently than healthy plants.
- A reflect
 - B transmit
 - C absorb
 - D mix
- 1.1.4 A ... is an example of a secondary implement used in soil preparation.
- A ripper
 - B mould board plough
 - C disc plough
 - D rotavator
- 1.1.5 A characteristic of an entrepreneur that demonstrates the ability to make decisions:
- A The ability to work with others
 - B The ability to meet deadlines at all times
 - C Whether to replace or repair an old tractor
 - D The ability to talk clearly to employees

- 1.1.6 A method of transportation that can handle large volumes of agricultural produce to other continents:
- A Air
 - B Railway
 - C Road
 - D Sea
- 1.1.7 ... is when the quantity of a product that consumers require is exactly equal to the quantity that producers sell.
- A Market value
 - B Market demand
 - C Market supply
 - D Market equilibrium
- 1.1.8 When a farmer issues a receipt for produce sold on a farm, a ... serves as proof that a transaction took place.
- A pro forma
 - B duplicate
 - C counterfoil
 - D agenda
- 1.1.9 An asset that increases the value of the farm:
- A Building
 - B Processing machinery
 - C Animal feed
 - D Conventional planter
- 1.1.10 ... ensures that a farm worker is provided with training to work with more sophisticated farm implements.
- A Unemployment Insurance Act, 2001 (Act 63 of 2001)
 - B Extension of Security of Tenure Act, 1997 (Act 62 of 1997)
 - C Skills Development Act, 1998 (Act 97 of 1998)
 - D Compensation for Occupational Injuries and Disease Act, 1993 (Act 130 of 1993)
- (10 x 2) (20) ...

- 1.2 Choose a description from COLUMN B that matches a term/item in COLUMN A. Write only the letter (A–L) next to the question numbers (1.2.1 to 1.2.10) in the ANSWER BOOK, e.g. 1.2.11 M. Use each description in COLUMN B only ONCE.

COLUMN A		COLUMN B	
1.2.1	Propionic acid	A	to separate a product according to set grading standards
1.2.2	Management	B	controls the sale and export of certain agricultural products and imported products
1.2.3	Sorting	C	setting of crop sprayers to apply the correct amount of herbicides
1.2.4	Transnational company	D	offers adventure activities and farming experiences to visitors
1.2.5	First-aid kit	E	a branch or expansion of the main farming enterprise and usually runs on its own
1.2.6	Calibration	F	oversees all farm activities
1.2.7	Petty cash	G	shows all assets and liabilities within the enterprise
1.2.8	Micro-enterprise	H	organisation that operates in more than one country
1.2.9	Agritourism	I	customer information
1.2.10	Agricultural Product Standards Act, 1990 (Act 119 of 1990)	J	chemical preservative used in food
		K	money for smaller business expenses
		L	must be available when conducting safety inspections

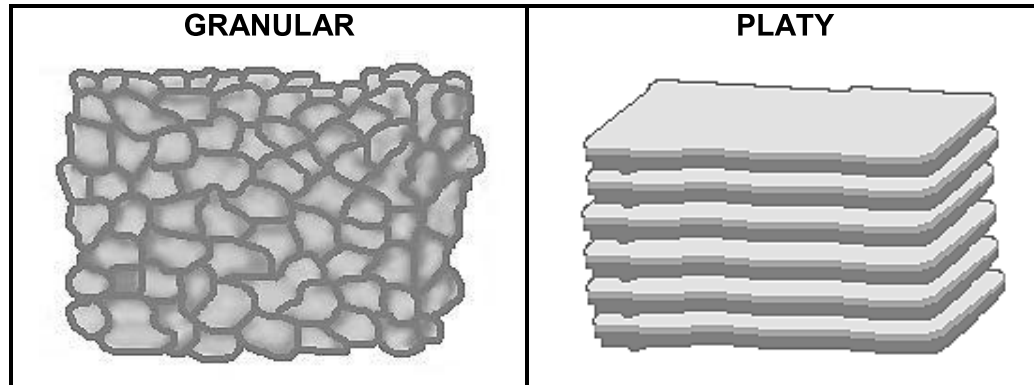
(10 x 2) (20)

- 1.3 Give the CORRECT agricultural term for each of the following descriptions. Write only the term next to the question numbers (1.3.1 to 1.3.5) in the ANSWER BOOK, e.g. 1.3.6 Recording.
- 1.3.1 A summary of financial projections of all production units on the farm
- 1.3.2 The quantity of an agricultural product that a producer delivers to the market that influences the price
- 1.3.3 The cultivation of different crops on the same field, one season after another
- 1.3.4 The consecutive steps that a product follows from the farm to the consumer
- 1.3.5 A method of packaging that removes air from the package prior to sealing (5 x 1) (5)
- 1.4 Change the UNDERLINED WORD(S) to make the following statements CORRECT. Write the answer next to the question numbers (1.4.1 to 1.4.5) in the ANSWER BOOK, e.g. 1.4.6 Fixed capital.
- 1.4.1 Daily transactions and sales are recorded in the labour record books.
- 1.4.2 Dolomitic lime is applied to lower the soil pH level.
- 1.4.3 Battery system is when crops are produced using a nutrient medium rather than soil.
- 1.4.4 Degrading refers to meeting the needs of the present generation without depriving future generations from meeting their own needs.
- 1.4.5 Extensive farming allows livestock to graze on the veld and be kept in a sheltered environment to receive extra feed. (5 x 1) (5)

TOTAL SECTION A: 50

SECTION B**QUESTION 2: PHYSICAL FARM PLANNING****Start this question on a NEW page.**

- 2.1 Name FOUR factors that contribute to shallow soils. (4)
- 2.2 Study the two sketches on granular and platy soil structures below.



- 2.2.1 Briefly discuss the influence of granular structure and platy structure on the following processes: (2)
- (a) Water infiltration (2)
 - (b) Root development (2)
- 2.2.2 Give a reason for your answer to QUESTION 2.2.1(a) for a platy structure. (1)
- 2.3 Suggest measures to prevent soil degradation. (4)
- 2.4 The effects of temperature on crop growth in a greenhouse.
- 2.4.1 Give the effects of different temperatures on crop growth in a greenhouse with reference to the following: (1)
- (a) Minimum temperature (1)
 - (b) Optimum temperature (1)
 - (c) Maximum temperature (1)
- 2.4.2 Name different ways of controlling high temperatures in a greenhouse. (3)

- 2.5 Indicate how the levels of relative humidity (RH) affect the processes named in the table below. Write your answers next to the letters (a) to (d).

PROCESSES	HIGH RELATIVE HUMIDITY	LOW RELATIVE HUMIDITY
e.g. Growth of fungal diseases	high	low
Evaporation	(a)	(b)
Wilting	(c)	(d)

(4 x 1) (4)

- 2.6 The table below shows the records of two farmers on the grazing systems they use.

Symbol (X) = grazing

FARMER A		FARMER B			
MONTH	CAMP A	MONTH	CAMP A	CAMP B	CAMP C
January	X	January	X		
February	X	February		X	
March	X	March			X
April	X	April	X		
May	X	May		X	
June	X	June			X

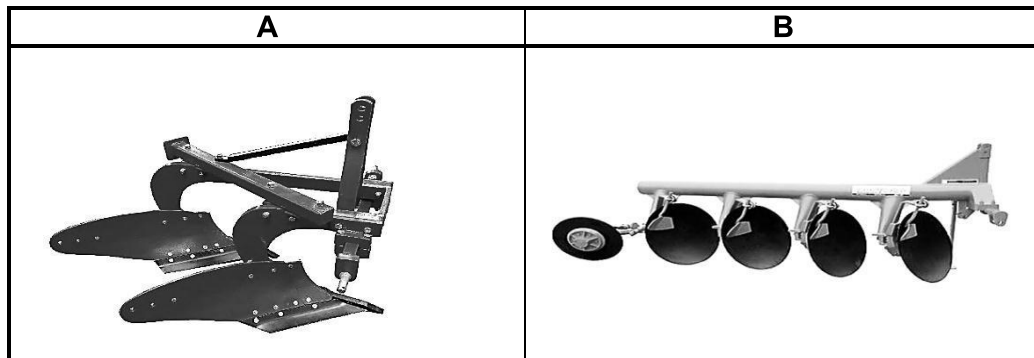
- 2.6.1 Describe the implications if FARMER A does not change the grazing system. (3)
- 2.6.2 Give the principles to ensure the successful implementation of the grazing system used by FARMER B. (3)
- 2.6.3 State the benefits of using the grazing system of FARMER B. (4)
- 2.7 Name FOUR main aspects that influence the application of precision farming. (4)
- 2.8 The list below shows different technologies used in precision farming.

harvester's grain tank flow sensor; tensiometer; harvester monitor; drone

Match EACH description below with a type of technology given in the list above:

- 2.8.1 Shows yield areas during harvesting (1)
- 2.8.2 Measures the flow rate of grain into the harvester storage tank (1)
- 2.8.3 Determines water-stressed areas in the field (1)
- 2.8.4 Locate trees with diseases in a big orchard (1)

- 2.9 The pictures below show different implements that are used on the farm during the cultivation of soil.



- 2.9.1 Name the type of capital represented by implements **A** and **B**. Justify your answer. (2)
- 2.9.2 Give TWO reasons why a farmer would use implement **B** rather than implement **A** during primary cultivation. (2)
- 2.9.3 Give the disadvantages of using animal traction. (3)
- 2.10 Give reasons why agritourism entrepreneurs should have insurance when they offer risky experiences to visitors. (2)
- [50]**

QUESTION 3: BUSINESS PLANNING, ENTREPRENEURSHIP, MARKETING, PRICE DETERMINATION AND THE MANAGEMENT PROCESS**Start this question on a NEW page.**

3.1 Name and describe THREE factors that contribute to the determination of the price of products. (6)

3.2 The marketing element consists of variables, which make up the marketing strategy for a farming enterprise. Briefly describe the variables below.

3.2.1 Product (2)

3.2.2 Promotion (2)

3.3 Match the principles of management below with the activities in QUESTIONS 3.3.1 to 3.3.4.

Principles of management:

- Coordinating
- Organising
- Planning
- Controlling

3.3.1 Set out each worker's tasks for the day (1)

3.3.2 Make sure each worker is completing their daily work according to the set standards (1)

3.3.3 Set the estimated yield to achieve harvesting targets (1)

3.3.4 Ensure that worker A first checks the drip irrigation before helping worker B with planting (1)

3.4 Distinguish between the strengths and weaknesses in a farming enterprise in respect of the following by copying and completing the table below in the ANSWER BOOK.

	STRENGTHS	WEAKNESSES
Credit		
Brand name		
Management skills		

(6 x 1) (6)

3.5 Give reasons why an entrepreneur is willing to take the risk of starting a farming enterprise. (4)

3.6 Describe FOUR aspects that must be considered when developing a plan of action for a working day on the farm. (4)

- 3.7 Describe the concept *marketing*. (5)
- 3.8 Give FOUR reasons why planning and re-planning is important in a farming enterprise. (4)
- 3.9 The disadvantage of farm gate marketing is an increased risk in biosecurity. Briefly describe how this risk can be reduced. (4)
- 3.10 Briefly explain how a farmer will use contract marketing as a marketing strategy. (2)
- 3.11 Name the roles of product organisations in agriculture. (3)
- 3.12 Give examples of printed media used for advertising a product. (4)
- [50]**

QUESTION 4: FINANCIAL PLANNING, RECORDKEEPING, HARVESTING, VALUE ADDING, AND PACKAGING**Start this question on a NEW page.**

- 4.1 Select a financial term from the list below to complete the given table. Write the correct answer next to the question numbers (4.1.1 to 4.1.5).

 net profit; total gross production value; gross farm income;
investment; miscellaneous income

FINANCIAL TRANSACTIONS	FINANCIAL TERM
Maize = R50 000 Vegetables = R4 000 Broiler chickens = R20 000 Piggery = <u>R5 000</u> Total = R79 000	4.1.1
The farmer has a tractor and storage facility that is hired by the community, generating R82 000	4.1.2
Adding amounts from: $(4.1.1) + (4.1.2) = \text{R}161\,000$	4.1.3
Gross profit minus all expenses	4.1.4
Farmer constructs a building with the intention to generate income	4.1.5

(5 x 1) (5)

- 4.2 A livestock farmer provided the Balance Sheet below for the period ending 31 March 2024.

BALANCE SHEET UNTIL 31 MARCH 2024	
ASSETS	VALUE (R)
Fixed assets	630 000
Current assets	75 000
Medium-term assets	98 000
TOTAL ASSETS:	(a)
LIABILITIES	VALUE (R)
Long-term liabilities	500 000
Current liabilities	45 000
Medium-term liabilities	85 000
TOTAL LIABILITIES:	(b)
NET WORTH: (c)	

- 4.2.1 State the aims of the Balance Sheet. (2)
- 4.2.2 Give TWO examples of fixed asset items. (2)
- 4.2.3 Calculate the TOTAL of the ASSETS (a). (1)

- 4.2.4 Calculate the TOTAL of the LIABILITIES (b). (1)
- 4.2.5 Calculate the NET WORTH (c). (3)
- 4.3 Technological advancement in agriculture:
- 4.3.1 State measures farmers can use to protect their banking information. (3)
- 4.3.2 Explain why it is better for farm administrators to use computers rather than handwritten notes. (4)
- 4.4 The table below shows an asset as recorded in the farming enterprise's inventory.

Asset	Tractor
Serial number	JBF – 45
Registration number	FMZ 9922
Cost price	R350 000
Expected lifespan	10 years
Salvage value percentage	5%

Calculate the depreciation of this tractor using the formula below.

$$\text{Depreciation} = \frac{\text{Cost price} - \text{Salvage value}}{\text{Expected lifespan}} \quad (4)$$

- 4.5 Compare hand picking and mechanical harvesting by copying and completing the table below in the ANSWER BOOK. Make use of the words listed below. Use each word only ONCE.

easy; crushing; few; difficult; bruising; many

	HAND PICKING	MECHANICAL HARVESTING
Maintenance of harvesting equipment		
Number of labourers		
Damage to produce		

(6 x 1) (6)

- 4.6 Sterilisation is the process whereby a liquid is heated to temperatures above 90 °C for a short time.
- 4.6.1 Give the aspects of the product that become affected during sterilisation. (3)

- 4.6.2 State the factors that a farmer should consider before processing an agricultural product. (3)
- 4.6.3 List the conversion processes available for use in food processing. (3)
- 4.7 Give reasons why it is important to package agricultural products. (2)
- 4.8 Classify the given examples of impurities in fresh produce using categories of hazards in the table below. Redraw and complete the table in your ANSWER BOOK.

Examples of impurities:

- Plastic
- Stones
- Lubricants
- Herbicides
- Bacteria

BIOLOGICAL HAZARDS	CHEMICAL HAZARDS	PHYSICAL HAZARDS

(5)

- 4.9 Suggest the type of storage facility or storage material that could be suitable for the products below.

- 4.9.1 Wine (1)
- 4.9.2 Grain (1)
- 4.9.3 Silage (1)
- [50]**

TOTAL SECTION B: 150
GRAND TOTAL: 200