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**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

AGRICULTURAL MANAGEMENT PRACTICES

FEBRUARY/MARCH 2011

MARKS: 200

TIME: 2½ hours

This question paper consists of 17 pages and 1 answer sheet.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. SECTION A (QUESTION 1) must be answered on the attached ANSWER SHEET.
3. Place the ANSWER SHEET for SECTION A (QUESTION 1) inside the front cover of the ANSWER BOOK.
4. SECTION B (QUESTIONS 2 to 4) must be answered in the ANSWER BOOK.
5. Start EACH question in SECTION B on a NEW page.
6. Read the questions carefully and align your responses accordingly.
7. Number the answers correctly according to the numbering system used in this question paper.
8. Non-programmable calculators may be used.
9. ALL calculations must be rounded off to TWO decimals, unless stated otherwise.
10. 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 make a cross (X) in the block (A – D) next to the question number (1.1.1 – 1.1.10) on the attached ANSWER SHEET.



EXAMPLE:

1.1.11	X	A	B	C	D
--------	---	---	---	---	---

- 1.1.1 An area can only be used as a pasture field if it has the following property:
- A Soils with a low organic-matter content
 - B Well-drained soils
 - C Well-aerated soils
 - D Shallow, rocky soils
- 1.1.2 Which ONE of the following is used as the most important criterium to prevent overgrazing?
- A Carrying capacity
 - B Farm size
 - C Type of veld
 - D Type of animal
- 1.1.3 The environmental conditions that are the most difficult to control in an intensive production unit situated in a tropical region of the country are the following:
- i High temperatures
 - ii Wind
 - iii High humidity
 - iv Low humidity
- A i and iv
 - B ii and iv
 - C i and iii
 - D Only ii
- 1.1.4 During the harvesting process it is important for a farmer to know the expected size of the yield. This knowledge will enable the farmer to ...
- A accurately predict the price of the product for the next season.
 - B calculate the productivity of the labour.
 - C plan a mechanisation strategy.
 - D reconcile the possible income with budget control purposes.

- 1.1.5 The preferred document used to show the profitability of an enterprise:
- A Balance sheet
 - B Income statement
 - C Inventory
 - D Cheque account statement
- 1.1.6 A farmer sells products directly from his farm to a group of vendors. Choose ONE of the following types of marketing that is NOT in line with this statement:
- A Direct marketing
 - B Farm-gate marketing
 - C Farm-stalls marketing
 - D Cooperative marketing
- 1.1.7 To improve the productivity and motivation of farm workers, one must ensure that ...
- A there is a clock-in system.
 - B the workers work overtime.
 - C working conditions improve.
 - D more workers are employed.
- 1.1.8 The type of technology that a farmer will buy, depends directly on the following factors:
- i Income potential of the farming enterprise
 - ii Nature of the farming system
 - iii The price of the product at the market
- A i
 - B i and ii
 - C ii and iii
 - D i, ii and iii

- 1.1.9 The diagram below represents a cheque used for purchases by a farmer.

	SA BANK	Non-negotiable Nie-onderhandelbaar	998-123
CENTRAL PRETORIA		<u>13 January 2010</u>	
PAY	BETAAL <u>Foodco</u>		or bearer of toonder
the sum of	<u>die bedrag van Two thousand four hundred rand</u> <u>and no cents</u>		R2 400,00
			 IS KHOSA
0125 2537835689 299			

The cheque has been ... to ensure the safety of the payment.

- A crossed
B made non-transferable
C made non-negotiable
D cancelled
- 1.1.10 To preserve and store fresh produce, it is recommended that these products be ... for a longer shelf life.

- A cooled
B boiled
C denatured
D aerated

(10 x 2) (20)

- 1.2 Choose a description from COLUMN B that matches an item/phrase in COLUMN A. Write only the letter (A – M) next to the question number (1.2.1 – 1.2.10) on the attached ANSWER SHEET, for example 1.2.11 N. Each description in COLUMN B may be used only ONCE.

COLUMN A		COLUMN B	
1.2.1	Agritourism	A	sorting of fruit in different sizes and colours according to certain specifications
1.2.2	Sour veld	B	marketing of produce in a pool system
1.2.3	Organisation	C	post-harvesting activity that involves a series of changes to a product to increase the market value
1.2.4	Grading	D	on Tuesday afternoon the farm owner meets with his farm manager to discuss the programme for Wednesday
1.2.5	Safety	E	addressing the needs of tourists visiting a game farm to increase the income of the farm
1.2.6	Agricultural Product Standards Act, 1990 (Act 119 of 1990)	F	legislation that controls the composition and quality of agricultural products
1.2.7	Break-even point	G	the type of pasture with a high nutrient value during summer and a very low nutrient value during winter
1.2.8	Regulated marketing	H	the management principle that is used when a farmer rearranges activities on the farm for greater efficiency
1.2.9	Daily planning	I	measures that a farmer has to apply to handle implements with the minimum risk of injury to farm labourers
1.2.10	Processing	J	legislation that addresses the health and welfare of farm workers
		K	the quantity of produce that a farmer has to produce to cover all the input costs
		L	pastures found mainly in low rainfall areas
		M	planning done before starting a new enterprise

(10 x 2)

(20)

- 1.3 Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (1.3.1 – 1.3.10) on the attached ANSWER SHEET.
- 1.3.1 The most ideal type of soil structure preferred by crop producers
- 1.3.2 The livestock farming system that is practised on a large farm with minimum input cost
- 1.3.3 A person who is capable of spotting an opportunity in the market and who reacts by producing a product to utilise this opportunity
- 1.3.4 The type of record that reflects the use of vaccination and medicine stocks on a farm
- 1.3.5 The production factor that is used to buy assets necessary for the operation of a farming unit
- 1.3.6 The total amount of money that is produced by a farming enterprise in one season
- 1.3.7 The statement that is used to indicate the present financial position of a farming enterprise
- 1.3.8 The source document that is issued with a cash transaction and that is important for recording expenditures
- 1.3.9 The term used to describe the advertising and selling of agricultural produce
- 1.3.10 A national organisation or union that represents the interests of farmers at local, provincial and national levels (10 x 1) (10)

TOTAL SECTION A: 50

SECTION B**QUESTION 2: ANIMAL AND CROP PRODUCTION**

- 2.1 Three types of farming systems/methods used in agriculture are described below.

SYSTEM/METHOD	DESCRIPTION
A	The farmer sees himself as a businessman and tries to produce products at the biggest profit.
B	The farmer uses the latest technology to optimally utilise all resources on his farm.
C	The farmer produces only enough to sustain his/her household for one season.

Identify EACH of the farming systems/methods indicated as A, B and C respectively. Write down A, B and C and next to it the farming system/method. (3)

- 2.2 Soil water management is regarded as one of the most important management aspects on an irrigation farm. The dry land (rain-fed) producers have little control over water management as they rely largely on natural rainfall. Irrigation farmers are able to manage their water inputs. Strategies such as timing, amount and method of irrigation are important to ensure optimal crop production.

2.2.1 Describe the TWO main aims of irrigation scheduling. (2)

2.2.2 A farmer uses a computer program for the scheduling of irrigation. List THREE possible inputs with regard to soil that needs to be entered as data for this program to predict and calculate the correct quantities of water needed for irrigation. (3)

2.2.3 Name an apparatus used to determine the soil-water status (quantity of water in the soil). (1)

- 2.3 A farming enterprise needs a productive labour force with a high level of performance per worker. One way to achieve this objective is to encourage the farm labourers.

2.3.1 Name FIVE ways to encourage farm labourers to increase their productivity. (5)

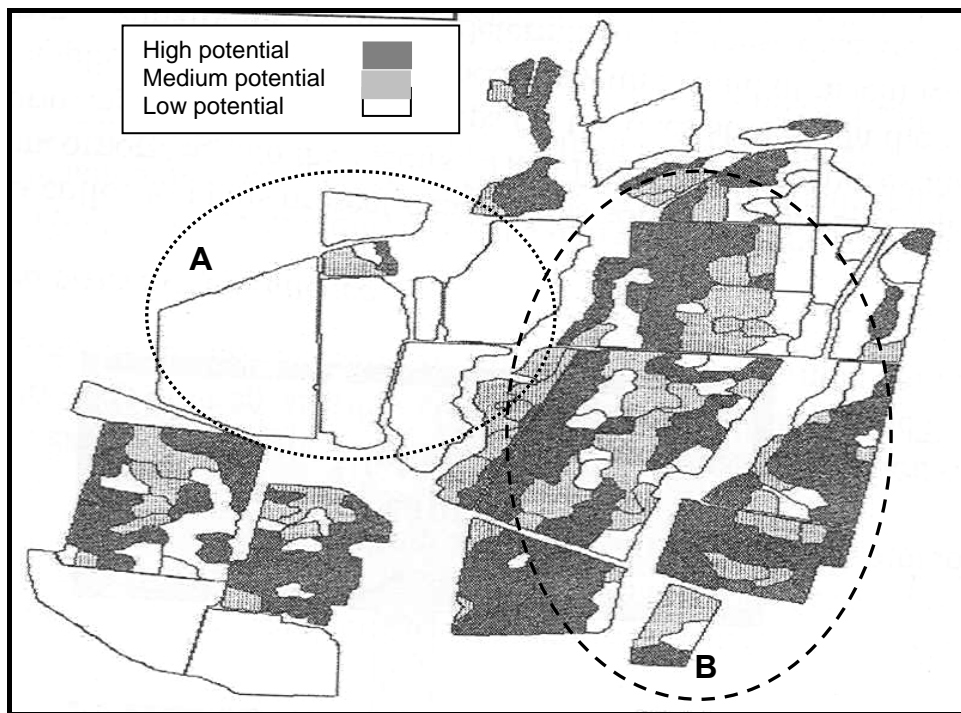
2.3.2 Analyse FOUR labour problems that are experienced by the agricultural industry. (4)

- 2.4 A commercial farmer takes soil samples of his/her farming land on a regular basis. The results of the latest soil sample indicate that a soil has 80% clay, 10% loam and 10% sand. The level of potassium in the soil is very high and the pH value is 8,7.
- 2.4.1 Name the main texture type of the soil sample taken on this farm. (1)
- 2.4.2 Name FIVE possible restrictions on crop production that this soil, represented by the soil sample, would have. (5)
- 2.4.3 Name THREE measures that can be applied to improve the production potential of this soil. (3)
- 2.5

<p>Biological control (biocontrol) can be defined as the use of a pest's natural enemy to either 'kill' or inhibit its reproductive potential. The most commonly used biocontrol agents include plants, insects or animal species. It is becoming increasingly expensive to use chemicals to combat pests, mainly because of their ability to develop resistance. In their search for alternatives, scientists found that biological pest control is the most cost-effective, environmentally friendly method available.</p> <p style="text-align: right;">[Extracted from: <i>Afgriland</i>, July/August 2008]</p>

- 2.5.1 Explain the *biological control of pests* as an agricultural alternative, as described above. (3)
- 2.5.2 Name THREE advantages of biological control in an agricultural enterprise. (3)
- 2.5.3 Recommend ONE essential precaution when using biological control measures in an agricultural environment. (1)
- 2.6 A farmer is replanning his farm. The sizes of the camps must be determined to prevent overgrazing and to ensure that there are enough camps for the different types of animals.
- 2.6.1 Give this farmer THREE criteria to consider before he rearranges the fences and camps. (3)
- 2.6.2 This farmer also considers building contour ridges on some of the cropping fields. Describe the positioning of such contour ridges. (1)

2.7 The map below represents a farm that has recently been surveyed to determine the potential of the soil in the camps and field.



2.7.1 This farmer intends to use the above data to differentiate between the cultivation strategies on the different fields on the farm.

Identify the process that was used to determine the different potential levels of the soils on this farm. (1)

2.7.2 This farm is mainly divided into part A and part B, as indicated on the map above.

Identify a section that will be utilised for EACH of the following types of agricultural production and give a reason for your answer:

- (a) Fodder production (2)
- (b) Crop production (2)

2.7.3 This farmer used a computer program to generate information about the farm. Name the computer program or system that was used to create the detailed map of the farm. (1)

2.8 The following composition of moist soil was measured on a cropping farm:

- Inorganic particles: 35%
- Water: 25%
- Air: 30%
- Organic material: 10%

2.8.1 Draw a pie graph to represent the composition of the above soil. (4)

2.8.2 The farmer wants to develop his cropping fields. The following options exist:

- Perennial crop production
- Annual crop production
- Planting of pastures

Choose ONE of the options for these cropping fields and give a reason from the data above to support your answer.

(2)
[50]

QUESTION 3: RECORDING, FINANCIAL STATEMENTS AND ENTREPRENEURSHIP

Start this question on a NEW page.

- 3.1 Many farmers in South Africa still prefer payment by cheque for farming expenses.
 - 3.1.1 List FOUR alternative methods of payment apart from the cheque payment option. (4)
 - 3.1.2 Evidence of payment is used as source documents and entered into the journal for the production enterprise. (4)

Indicate the data to be used to complete the journal that should be reflected on these source documents. (4)

- 3.2 Give SIX reasons for keeping farm records. (6)

- 3.3 Redraw the table below to tabulate the following elements of a budget. Give a brief description and an example of each element. (6)

ELEMENT OF BUDGET	DESCRIPTION	EXAMPLE
Resources		
Inputs		
Parameters		

- 3.4 The cash flow of an agricultural production enterprise was calculated over a full season.
 - 3.4.1 Explain *cash flow*. (2)
 - 3.4.2 Describe the TWO main factors that could be responsible for a negative cash flow situation in a farming enterprise. (2)

- 3.5 A livestock farmer provides the Balance Sheet below for the period ended 30 September 2010.

Balance Sheet 30 September 2010

ASSETS	VALUE
Fixed assets	R620 000
Current assets	R75 000
Medium-term assets	R98 000
TOTAL ASSETS	R...
LIABILITIES	VALUE
Fixed liabilities	R500 000
Current liabilities	R40 000
Medium-term liabilities	R80 000
TOTAL LIABILITIES	R...
NET WORTH	R...

- 3.5.1 Give an example of a fixed asset item. (1)
- 3.5.2 Briefly describe the main aim of the financial statement on the previous page. (2)
- 3.5.3 Formulate a definition for the *net worth* of a farming enterprise. (2)
- 3.5.4 Calculate the net worth of this farming enterprise from the data in the table on the previous page. (3)
- 3.5.5 Describe a *current asset* and give an example of such an asset. (2)
- 3.6 A commercial farmer received R38 600 for the sale of produce on 28 December 2009, R69 450 on 10 February 2010 and R61 500 for the last stock on 10 May 2010. The production cost over this period was R87 000 and another R2 500 was spent on marketing.

Draw up a complete Income and Expenditure Statement for this farmer. (8)
- 3.7

A young farmer visited a friend in Europe and was exposed to a herbal tea that has wonderful health advantages. Back in South Africa this farmer planted some of the herbs used in the production of this health tea. This farmer soon had an operation that produced large volumes of herbal health tea. This unique venture was a huge success.

Identify THREE characteristics of an entrepreneur that are evident in the scenario above. (3)
- 3.8 To apply for a loan, a young farmer needs to present a business plan for a farming enterprise to the financial institution. Briefly describe the following aspects of a business plan:
- 3.8.1 The different contact details required (2)
- 3.8.2 Type of enterprise (legal entity) (1)
- 3.8.3 The financial plan of the enterprise (2)
- [50]**

QUESTION 4: HARVESTING, VALUE-ADDING, MARKETING, AGRITOURISM AND INDUSTRY

Start this question on a NEW page.

4.1 Packaging of agricultural products is done for various reasons. Outline FIVE reasons for the packaging of an agricultural product. (5)

4.2 Large grain storage facilities are sometimes fitted with fans that blow air into the stored products inside. The air blown into these storage facilities assists in preserving the good quality of the harvested agricultural product.

4.2.1 Briefly explain TWO negative effects of a high temperature on a stored agricultural product. (2)

4.2.2 The running costs of a storage facility can be very high. Explain the main reason why a producer should carry these expenses in order to increase the income from this stored agricultural product. (2)

4.2.3 Give an example of a large storage facility for an agricultural product. (1)

4.3 Compare labour-intensive harvesting methods with highly mechanised harvesting methods. Redraw the table below in your ANSWER BOOK and use the following indicators:

- High
- Low
- Long
- Short

FEATURES	LABOUR-INTENSIVE METHODS	MECHANISED OR HIGH-TECH METHODS
Time spent on task		
Initial cost		
Running costs		
Quality of harvested produce		
Volume/Quantity of product harvested per day		

(10)

4.4 The processing of an agricultural product can be schematically represented as follows:

Raw agricultural product → series of activities → final product

4.4.1 Name the TWO main advantages that the processing of an agricultural product can have for the agricultural entrepreneur. (2)

4.4.2 Indicate TWO possible facilities or pieces of equipment that will be necessary when drying a fresh agricultural product. (2)

4.4.3 Describe a possible method used to preserve a processed agricultural product. (1)

4.5 In the past most agricultural products were marketed as part of a regulated marketing system. For each agricultural product there was a marketing board that was responsible for the marketing and price determination of those agricultural commodities. With the introduction of the free marketing approach to agriculture, many of these boards were converted into producer organisations that serve the interests of a specific group of farmers.

State THREE main advantages for a farmer who belongs to such a producer organisation. (3)

4.6

A farmer faces a challenge of waste management on the farm. The farmer has a processing plant on the farm and supplies packaged goods to a large number of retailers nationwide. The farmer plans to generate electricity from all the organic waste products on the farm.
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4.6.1 Write a short report on the farming operation above to indicate the following: (3)

- Biggest challenge
- Solution to the problem
- Benefits of this solution

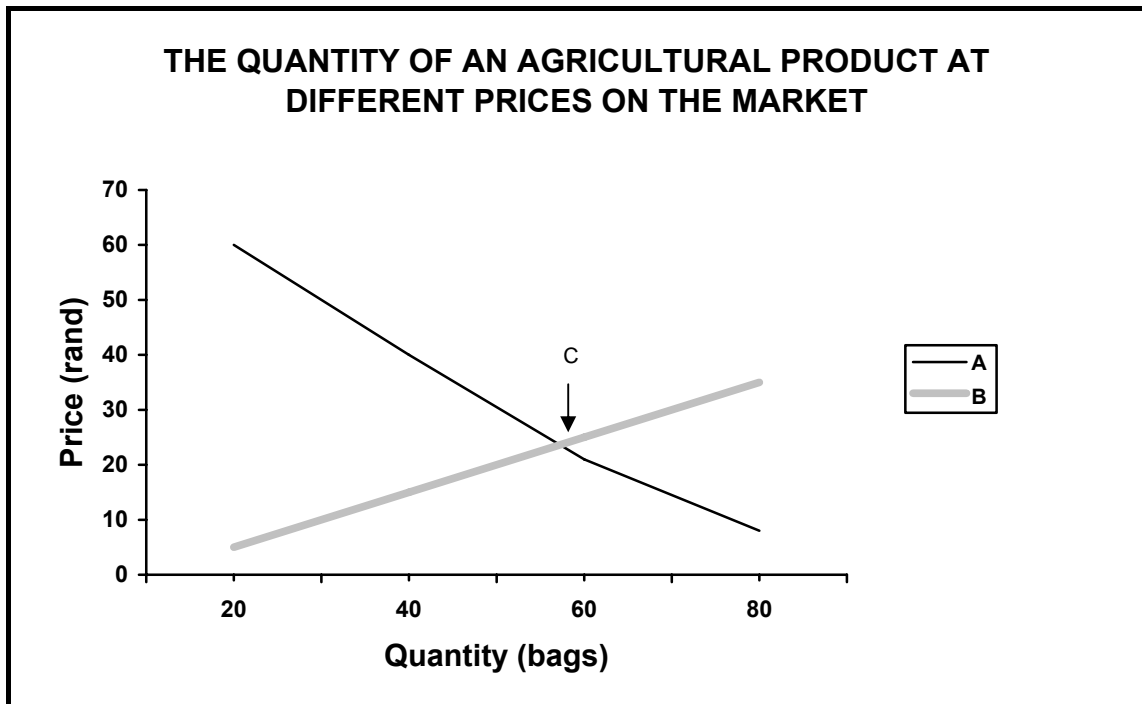
4.6.2 Name the effect of the new waste-management strategy of this farm on the carbon footprint. (1)

- 4.7 The following marketing channels exist in the formal and non-formal agricultural sectors for products:

MARKETING CHANNELS
Farmer as producer of agricultural products
Retailers
Cooperatives
Vendors/Hawkers
Fresh-produce markets
Farm stalls
Export markets
Spaza shops
Flea markets
Consumers

- 4.7.1 Draw a schematic representation of a marketing chain for an agricultural product, representing FOUR channels. (4)
- 4.7.2 Differentiate between *formal* and *informal marketing channels* by giving ONE example of each. (2)
- 4.8 The list below indicates some motivations for a farmer to introduce agritourism into a farming enterprise:
- A Basic farm experience
 B Unique natural beauty
 C Unique activities
 D Locality
- 4.8.1 From the above list identify the possible motivation that each of the following farmers can put forward to introduce agritourism into their enterprises:
- (a) A farm in the Karoo next to the N1 highway with small cottages (1)
- (b) A game farm in a mountainous area of the country with a large variety of plants and trees and caves that have been transformed into living units (1)
- (c) A farm close to a metropole with a dam for fishing, a 4x4 obstacle track, a restaurant, but no overnight facilities (1)
- 4.8.2 Name TWO basic facilities or infrastructures that a farmer must have or acquire to start an agritourist enterprise on the farm. (2)

4.9 The graph below represents the quantity of an agricultural product that consumers will buy at a given price from a central market.



- 4.9.1 Identify the types of marketing curves indicated as GRAPHS A and B above. (2)
- 4.9.2 Deduce, from the graph above, how much it will cost to buy 45 bags (units) of the product. (2)
- 4.9.3 Name and explain the market status indicated by the letter C on the graph. (3)

[50]

TOTAL SECTION B: 150
GRAND TOTAL: 200

CENTRE NUMBER:

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EXAMINATION NUMBER:

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SECTION A

QUESTION 1.1

1.1.1	A	B	C	D
1.1.2	A	B	C	D
1.1.3	A	B	C	D
1.1.4	A	B	C	D
1.1.5	A	B	C	D
1.1.6	A	B	C	D
1.1.7	A	B	C	D
1.1.8	A	B	C	D
1.1.9	A	B	C	D
1.1.10	A	B	C	D

(10 x 2) (20)

QUESTION 1.2

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	

(10 x 2) (20)

QUESTION 1.3

- 1.3.1
- 1.3.2
- 1.3.3
- 1.3.4
- 1.3.5
- 1.3.6.....
- 1.3.7.....
- 1.3.8.....
- 1.3.9.....
- 1.3.10.....

(10 x 1) (10)



TOTAL SECTION A: 50