



**AGRICULTURAL MANAGEMENT PRACTICES**

Time: 3 hours

200 marks

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**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 13 pages and an Answer Sheet of 3 pages (i – iii). Answer ALL the questions.
  2. This question paper consists of TWO sections.
  3. Detach the Answer Sheet from the centre of the question paper and ensure that it is handed in together with the Answer Book.
  4. Section A must be answered on the attached Answer Sheet.  
  
Section B must be answered in the Answer Book, except for Question 3.6 and Question 4.2.1, which must be answered on the Answer Sheet.
  5. Read ALL the questions carefully and make sure that you answer only what is asked.
  6. Start EACH question on a NEW page.
  7. Number the answers as the questions are numbered on the question paper.
  8. Non-programmable calculators may be used.
  9. ALL calculations must be rounded off to TWO decimals unless stated otherwise.
  10. It is in your own interest to write legibly and to present your work neatly.
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**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.
- 1.1.1 A management principle used to ensure that there are no overlapping of tasks on the farm, is ...
- A planning.
  - B organising.
  - C coordination.
  - D evaluation.
- 1.1.2 One of the following land cultivation practices does NOT contribute to the optimal use of the soil:
- A crop rotation
  - B intercropping
  - C monoculture
  - D mulching
- 1.1.3 The climatic factor that has the greatest influence on biological processes in agricultural production, such as the flowering stages of crops or the reproductive cycles of livestock, is ...
- A wind.
  - B the length of the daylight period.
  - C humidity.
  - D rainfall.
- 1.1.4 A farmer has invested in a processing unit on his farm. The main aim of this processing unit is to ...
- A increase management for the farmer.
  - B increase income for this farm.
  - C adhere to consumer preferences.
  - D increase labour involvement.
- 1.1.5 To ensure food security for households in rural areas with very little resources, a headman may practise the following farming system:
- A intensive farming
  - B subsistence farming
  - C commercial farming
  - D extensive farming

- 1.1.6 The ... indicates a position where the quantity of a product that consumers require is exactly equal to the quantity that producers wish to sell.
- A market value
  - B market equilibrium
  - C market niche
  - D market penetration
- 1.1.7 The reason why a health agent inspects carcasses at an abattoir is to determine ...
- A the grade of the carcasses.
  - B the weight loss of the carcasses during ripening.
  - C the fat content of the carcasses.
  - D whether the carcasses are free of any pests or diseases.
- 1.1.8 The farming cost that remains unchanged for a specific production process, regardless of the volume of products that are produced, for example depreciation, rentals and interests:
- A fixed cost.
  - B demand cost.
  - C variable cost.
  - D supply cost.
- 1.1.9 A typical example of farm work associated with seasonal labour is ...
- A feeding animals twice a day.
  - B daily maintenance work.
  - C the harvesting of an annual fruit crop.
  - D constructing a new cattle handling facility then leaving the farm.
- 1.1.10 The Agricultural Products Standards Act, 1990 (Act 119 of 1990) controls the ...
- A grading of processed products.
  - B substances that may be added to food during processing.
  - C premises where processing will take place.
  - D labelling requirements for processed foods.

(20)

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

COLUMN A	COLUMN B
1.2.1 Calibration	A livestock is an example
1.2.2 Grading	B heating of a product during processing to remove all pathogenic micro-organisms and prolong its shelf life
1.2.3 Liability	C an artificial pasture that is planted with two types of grasses
1.2.4 Rotational grazing	D the use of different camps for the same group of animals during the year
1.2.5 Sterilization	E the partial replacement of labour by capital investment, which leads to a decrease in labour
1.2.6 Soil texture	F pricing of agricultural products was determined by the control boards
1.2.7 Controlled marketing	G the most economical source of animal feed
1.2.8 Moveable capital	H the size of soil particles
1.2.9 Natural grazing	I determining the fat content of a carcass
1.2.10 Mechanisation	J setting of sprayers to deliver the correct amount of herbicide
	K deducted from soil data and soil information
	L accounts that must be paid by the farmer at the end of the month

(20)

- 1.3 Give the correct agricultural term for each of the following descriptions. Write only the term next to the question number (1.3.1 – 1.3.10) on the attached Answer Sheet. For example, 1.3.11 Filtration.
- 1.3.1 The quantity of an agricultural product that a producer delivers on the market at a specific price
- 1.3.2 A form of capital that the farm manager would utilise to buy seeds before the planting season.
- 1.3.3 Grass banks strategically placed on sloped arable fields to prevent soil erosion
- 1.3.4 The capability of soil to retain moisture for plants to grow
- 1.3.5 The livestock farming system that is practised on a large farm with minimum input cost
- 1.3.6 The total amount of money that is generated by a farming enterprise in one season
- 1.3.7 The marketing of local produce on markets to countries such as England and Zimbabwe
- 1.3.8 The change in value of a tractor over time due to wear and tear
- 1.3.9 A comprehensive plan developed for a farming enterprise that can be used to acquire a loan from a commercial bank
- 1.3.10 Changing a farming enterprise to accommodate people visiting the farm regularly to expose them to agricultural activities

(10)

<b>50 marks</b>
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**SECTION B**

**QUESTION 2 FARM PLANNING**

**Start this question on a NEW page.**

2.1 Discuss THREE factors that would determine the type of technology that a farmer will require for a farm. (3)

2.2

**FARMER A**  
Farmer A is a crop farmer who is one of 42 farmers in South Africa who produce Fair Trade Certified Products. The products are destined for the European export market. Production on the farm depends partially on irrigation.

**FARMER B**  
Farmer B is a young, livestock farmer who produces good quality livestock. The farmer provides products only for the household. The livestock on the farm are kept on natural pastures and are given minimal additional feed.

Distinguish between the types of farmers and the farming systems represented by the two scenarios, by redrawing and completing the table below in your Answer Book. (8)

	<b>FARMER A</b>	<b>FARMER B</b>
<b>Purpose of farming enterprise</b>		
Reason		
<b>Level of intensity of farming system</b>		
Reason		

2.3 Soil is the farmer's basic resource since it supports the production of plants and animals. Adding organic material to the soil is one of the ways to conserve and improve soils.

Name FOUR ways in which organic fertilizers can contribute to the physical improvement of the soil. (4)

2.4 A farmer plans to introduce an additional farming enterprise onto the farm, and is trying to determine which enterprise will increase the profitability of the farm.

Formulate FIVE questions that the farmer should consider when determining the most suitable enterprise. (5)

2.5

Cindy is a farm worker on the Petersen's farm. She is not a full-time labourer, but she has been hired to assist in peak periods, which occur on the farm at the same time each year. Her husband Patrick is only hired to fix the damaged assets on the farm as they occur.

Interpret the above scenario and describe the type of temporary labour represented by Cindy and Patrick respectively. (2)

2.6 Look at the photographs and the scenario below, which refer to the production aspects of a large-scale crop enterprise.



Michael is the farm manager responsible for 800 ha of crop lands, which are currently being harvested. During the growing season he used the global positioning system (GPS) installed on the tractor to pinpoint the exact location of planting to within one meter. The tractor was also equipped with a geographical information system (GIS), which showed the areas in the field where the soil was moist and where there were factors that limited crop growth. The remote sensing data was uploaded to show where the germination of new crops was already occurring successfully and areas where growth was stunted. Michael sent this information directly from the remote sensing device to the on-board computer, which automatically updated and regulated the application of fertilizers and pesticides so that just the right amounts were applied to the field in the exact areas where they were required.

[Adapted from: Earth observatory. [www.earthobservatory.nasa.gov/study/PrecisionFarming](http://www.earthobservatory.nasa.gov/study/PrecisionFarming)]

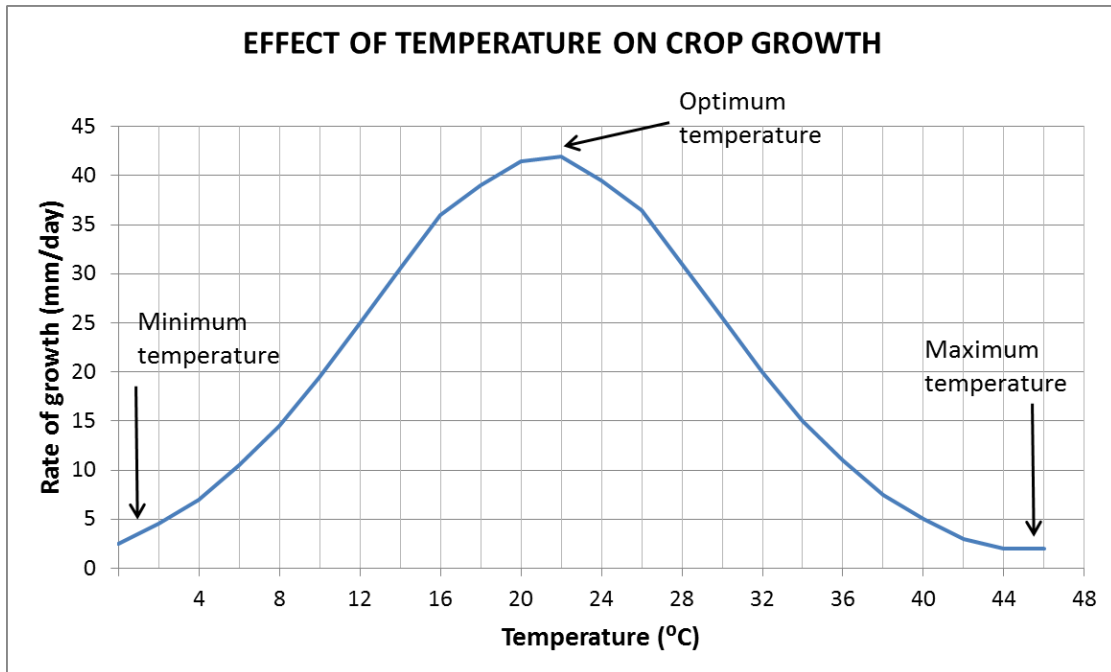
- 2.6.1 Identify the intensive farming system that is described in the above scenario. (1)
- 2.6.2 Identify FOUR technological tools used in the planting of crops according to the information from the scenario above. (4)
- 2.6.3 State FOUR advantages of using the technological tools mentioned in Question 2.6.2. (4)

2.7

A small-scale commercial farmer depends on natural rainfall for livestock and crop production. Natural grazing forms an important source of the nutrition for the animals. The farmer manages the natural pasture in such a way that it will give the highest possible yield on this mixed farming enterprise. The grazing norms are set for each pasture type and should be adhered to. One way of achieving this is by dividing the farm into camps. A further challenge for this farmer is that 30% of the crop land is waterlogged.

- 2.7.1 Name FOUR characteristics that can be used to classify natural pastures. (4)
- 2.7.2 Describe THREE reasons for the division of grazing pastures into camps. (3)
- 2.7.3 Formulate THREE ways to solve the problem of waterlogging in the crop lands. (3)

2.8 Refer to the graph below, which illustrates the effect of temperature on crop growth in a greenhouse.



2.8.1 Explain the effects of different temperatures on crop growth shown in the above graph by referring to the minimum, optimum and maximum temperatures. (3)

2.8.2 Determine the following from the graph above:

(a) Crop growth rate at a temperature of 14 °C. (1)

(b) The temperatures at which crops will grow at a rate of 40 mm/day. (2)

2.8.3 The maximum temperature indicated on the graph seems to be too high for plant growth. State THREE ways to control such high temperatures. (3)  
[50]



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

**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 using 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.

Indicate FOUR data items that are required to complete the journal that should be reflected on the source documents. (4)

3.2 Supply 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 the concept *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 provided the balance sheet below for the period ending 30 September 2014.

**Balance sheet until 30 September 2014**

<b>ASSETS</b>	<b>VALUE</b>
Fixed assets	R630 000
Current assets	R75 000
Medium-term assets	R98 000
<b>TOTAL ASSETS</b>	<b>R ...</b>
<b>LIABILITIES</b>	<b>VALUE</b>
Fixed liabilities	R500 000
Current liabilities	R45 000
Medium-term liabilities	R85 000
<b>TOTAL LIABILITIES</b>	<b>R ...</b>
<b>NET WORTH</b>	<b>R ...</b>

- 3.5.1 Briefly describe the main aim of the balance sheet. (2)
- 3.5.2 Give an example of a fixed asset item. (1)
- 3.5.3 Describe a *current asset* and give an example of such an asset. (2)
- 3.5.4 Formulate a definition for the *net worth* of a farming enterprise. (2)
- 3.5.5 Calculate the net worth of this farming enterprise from the data given in the balance sheet. (3)

3.6

A commercial farmer received R42 600 for the sale of produce on 28 December 2013, R74 450 on 10 February 2014 and R63 500 for the last stock on 10 May 2014. The production cost over this period was R97 000 and another R3 500 was spent on marketing.

Draw up a complete income and expenditure statement for this farmer, using the table on the attached ANSWER SHEET. (8)

3.7

While on holiday in South America, a young farmer visited a vanilla plantation and learnt about the process of vanilla production and processing. Back in South Africa, the farmer planted some vanilla vines and started supplying vanilla pods to a local farm stall. After a few years the vanilla operation had grown into a large enough operation to supply vanilla pods to shops in the whole province.

Identify THREE characteristics of an entrepreneur that are evident in the scenario above. (3)

3.8 In order to apply for a loan from a financial institution, a young farmer needs to present a business plan for a farming enterprise. Briefly describe the following aspects of a business plan:

3.8.1 The type of enterprise (legal entity) (1)

3.8.2 The financial plan of the enterprise (2)

3.8.3 The marketing strategy for the enterprise (2)

**[50]**

**QUESTION 4 HARVESTING, PROCESSING AND MANAGEMENT**

**Start this question on a NEW page.**

4.1 There are two methods of harvesting crops, namely hand harvesting and machine harvesting.

4.1.1 Discuss FOUR factors that would influence a farmer's decision to use hand harvesting or to use machine harvesting on the farm. (4)

4.1.2 Discuss FOUR disadvantages of hand harvesting in terms of the following: (4)

- Time utilisation
- The area covered
- Labour utilisation
- Quality of the harvesting product

4.2 The table below represents the supply and demand schedule for a crop.

Price (R/kg)	Quantity demanded per week (kg)	Quantity supplied per week (kg)	Surplus	Shortage
4	600	0		600
8	500	100		400
12	400	200		200
16	300	300		0
20	200	400	200	

4.2.1 Draw a line graph on the attached ANSWER SHEET that represents the supply and demand schedule from the values given in the table above. (5)

4.2.2 Indicate the price of the product at the point of market equilibrium. (1)

4.2.3 Briefly explain the possible reasons for the shortage of the product in the market at specific times. (2)

4.2.4 Devise two strategies that a farmer could use to deal with the problem of product shortages at certain times, as mentioned in Question 4.2.3. Explain each strategy briefly. (4)

- 4.3 Maintaining the good quality of harvested crops after harvesting is very important when marketing the product. Farmers may erect storage facilities, such as the grain silos shown in the photograph below, to preserve their crops. Produce is stored in such storage facilities where the environment is controlled to prevent moulding, rotting and damage by pests and rodents.



- 4.3.1 State THREE environmental factors that are controlled in such storage facilities. (3)
- 4.3.2 Name any TWO organisms or animals that may damage harvested crops if the crops are not kept in suitable storage facilities. (2)
- 4.4 Consumers prefer buying processed agricultural products rather than raw agricultural products.
- 4.4.1 Briefly explain THREE reasons for preserving an agricultural product. (3)
- 4.4.2 List FOUR methods of preserving agricultural products. (4)
- 4.5 Producer organisations, such as Milk Producers Organisation (MPO), Grain SA and even farmers' cooperatives, assist emerging farmers to establish and sustain their farming businesses.
- Identify FOUR ways in which these producer organisations assist farmers in South Africa. (4)
- 4.6 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 workers.
- 4.6.1 Name FIVE ways to encourage farm workers to increase their productivity. (5)
- 4.6.2 Analyse FOUR labour problems that are experienced by the agricultural industry. (4)
- 4.7 Name any FIVE essential items of information that must appear on the label of packaged agricultural produce. (5)

[50]

<b>150 marks</b>
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**Total: 200 marks**