Please paste the barcoded label here	TOTAL MARKS

NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2021

AGRICULTURAL MANAGEMENT PRACTICES

EXAMINATION NUMBER													

Time: 3 hours 200 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 32 pages. Please check that your question paper is complete.
2. This question paper consists of TWO sections.
3. Answer ALL questions.
4. Answer all the questions ON the question paper and hand it in at the end of the examination. Remember to write your examination number in the space provided above.
5. Read all the questions carefully and make sure that you answer only what is being asked.
6. Non-programmable calculators may be used.
7. ALL calculations must be rounded off to TWO decimal places unless stated otherwise.
8. It is in your best interests to write legibly and to present your work neatly.
9. FOUR blank pages (pages 29–32) are included at the end of the question paper. If you run out of space for an answer, use these pages. Clearly indicate the number of your answer should you use this extra space.

Mark allocation

QUESTION 1	QUESTION 2	QUESTION 3	QUESTION 4	TOTAL

SECTION A

QUESTION 1

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write down the letter (A–D) that corresponds to your answer in the space provided at the end of the question on page 3.

1.1.1 The slope in South Africa that usually produces early harvests is the … slope.

A southern
B northern
C western
D south-eastern

1.1.2 The following are examples and/or properties of operating capital:

(i) It is involved in the production process only for a single year, e.g., feed.
(ii) It cannot be destroyed during one production process, e.g., breeding stock.
(iii) Repairs and contract work.
(iv) Seed, wages, fertiliser and fuel.

Choose the correct combination:

A (i), (ii) and (iii)
B (ii), (iii) and (iv)
C (i), (ii) and (iv)
D (i), (iii) and (iv)

1.1.3 The most economic source of animal feed is …

A established pasture.
B oats.
C natural veld.
D annual rye grass.

1.1.4 Soil erosion is NOT limited by …

A contour cultivation.
B no cultivation.
C terraces.
D clean cultivation.

1.1.5 An example of non-directly productive capital items is …

A livestock.
B orchards.
C vehicles.
D soil.

1.1.6 Which ONE of the following statements on mulch cultivation is WRONG?

A It preserves soil humidity and prevents overheating.
B It prevents weed growth and competition with crop plants.
C It improves the productivity of soil and the earthworm population.
D It increases leaching, resulting in a sweet soil.

1.1.7 The implement that is used for deep cultivation to break up limiting layers of soil or a "plough sole" without upsetting the layers of soil is a …

A ripper.
B chisel plough.
C rotavator.
D disk plough.

1.1.8 Red soil has the following characteristics:

A Little moisture, a lot of oxygen with the presence of iron.
B Waterlogged conditions with the presence of iron.
C High humus content with the presence of iron.
D Varying water tables with the presence of lime.

1.1.9 The … is a summary of the assets and liabilities of the enterprise as well as the owner's equity in the enterprise.

A cash book
B balance sheet
C cash flow statement
D trial balance

1.1.10 The term … refers to the breaking and grinding of grain to form edible products, for example, maize that is ground to form mealie meal.

A sterilisation
B pasteurisation
C aggregation
D preservation

1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.1.10

(20)

1.2 Choose a description from COLUMN B that matches a term from COLUMN A. Write down only the letter (A–K) that corresponds to your choice in the space provided at the bottom of the page.

Each description in COLUMN B may be used only ONCE.

COLUMN A	COLUMN B
1.2.1 Health Act	A The Act provides for the protection of workers from unfair discrimination.
1.2.2 Employment Equity Act	B The management function creating favourable conditions to enable workers to use their energy to the advantage of the farm/individual.
1.2.3 Soil conservation	C It indicates the aims of the farm for the future.
1.2.4 Motivation/Leadership	D The management function determining the analysis and grouping of farming activities as well as relationships between groups.
1.2.5 Control	E The Act mainly relates to unions and collective bargaining in the workplace.
1.2.6 Organising	F This is a concise summary of the purpose of the enterprise (who we are, what we are doing).
1.2.7 Sour grass	G The management function resulting in corrective action to rectify problems.
1.2.8 Preservation	H The protection of soil from erosion, pollution and degradation.
1.2.9 Vision statement	I Pasteurising products such as milk.
1.2.10 Mission statement	J The Act relates to the maintenance of hygiene and the provision of food.
	K High-rainfall areas with sandy soil.

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

(20)

1.3 Give the correct agricultural term for each of the following descriptions. Write down only the correct term, for example 1.3.11 Sodium.

1.3.1 The utilisation of capital in an enterprise in the expectation of making a profit.

_____

(1)

1.3.2 The property of soil that determines most qualities of the soil.

_____

(1)

1.3.3 An advantage of monoculture as well as a business survival strategy used by a producer to focus on only one commodity for the production of a high-quality product.

_____

(1)

1.3.4 The economic property of land entails that land will always have value and cannot be destroyed easily.

_____

(1)

1.3.5 The specific plant species that are found in an area and that indicate the plant succession status of the veld.

_____

(1)

1.3.6 The term refers to the characteristics of an area, such as the mountains, hills, contours and height above sea level.

_____

(1)

1.3.7 The number of hectares (ha) needed to maintain one large stock unit (LSU = 450 kg) for a year.

_____

(1)

1.3.8 The soil cultivation practice in which crop production takes place without ploughing and disturbing the ecosystem of the soil.

_____

(1)

1.3.9 This type of credit refers to money that is borrowed and repaid with interest to buy production goods that are used in one production season, for example feed and fuel.

_____

(1)

1.3.10 The type of record that should be kept to indicate the reproduction, production and health of stock, as well as the stock numbers to allow for good decision making in the enterprise.

_____

(1)

50 marks

SECTION B

QUESTION 2 RESOURCE UTILISATION, LAND USE AND FARMING SYSTEMS

2.1 Answer the following questions regarding labour resources.

2.1.1 Define labour.

_____

_____

_____

_____

(2)

2.1.2 Identify each type of farm labourer as described below according to their type of work and/or responsibilities.

(a) A labourer who works less than 24 hours per month.

_____

_____

(1)

(b) A temporary labourer who usually stays somewhere else and is, for example, employed only to build a concrete dam on the farm.

_____

_____

(1)

(c) A labourer that is employed by the farmer for the whole year, for example, the labourer who milks the cows daily.

_____

_____

(1)

2.1.3 Diseases such as TB, HIV and COVID among labourers have both a direct and an indirect effect on a farming enterprise. Briefly explain FOUR ways in which diseases among labourers can be detrimental to the productivity of an enterprise.

- _____
- _____
- _____
- _____

(4)

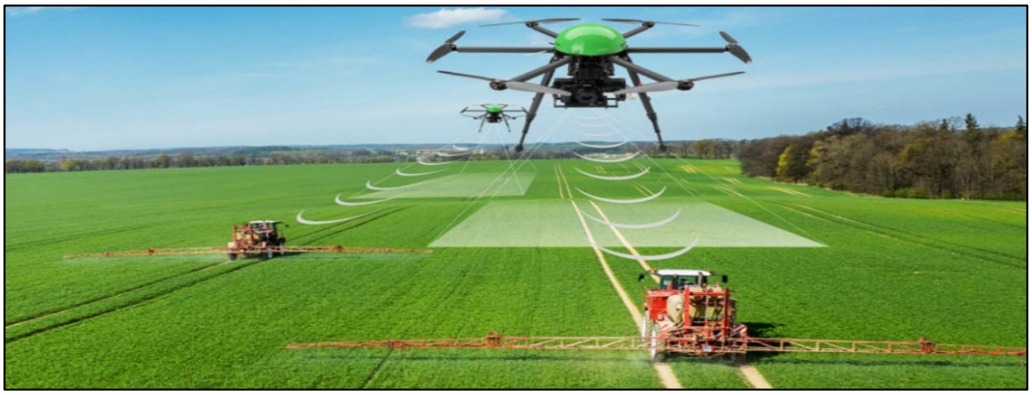
2.1.4 A productive labour force implies a high level of performance by happy, willing and satisfied labourers. List FIVE ways in which the productivity of the labourers can be maintained and improved.

- _____
- _____
- _____
- _____
- _____

(5)

2.2 Precision farming is an integrated production management system.

If you do not implement precision farming, the survival of your farm is doubtful. Most farmers realise that their sustainable survival is directly connected with their ability to employ technology in various forms on their farms.



[Source: *Die Landbouweekblad*, 22 December 2017]

Study the extract from *Die Landbouweekblad* of 22 December 2017.

HIGH-TECHNOLOGY FARMING PRINCIPLES (HTF) PROJECT

"I DO NOT SAVE ON PRECISION FARMING" – GERHARD BRUWER

High-technology farming principles increased the yield of Genade Farm at Douglas by approximately 10%, but also reduced production costs by approximately 10%.

It starts with irrigation scheduling. Then we look at the fertiliser we apply and the cultivars we plant on certain fields. We use satellite images to look at the chlorophyll in the plant to identify the good and bad spots in the fields. We also look at the NDM index (moisture index).

We do not fertilise just for the sake of fertilising, but study root development and layers of thickening using profile holes. We also use the mass of thousand granules in wheat to determine how many we should plant to harvest a specific number of stalks. Then we determine the soil status, make adjustments and work out a specific fertilisation programme per farm or pivot point. "This is spoon feeding, because you give the plant exactly what it needs."

This also applies to irrigation, and the Bruwers nowadays make their calculations according to rand per millimetre water administered. This made them realise it is more profitable to plant more peanuts and less wheat and maize. Peanuts use 30% less water and R/mm they, therefore, perform better than maize or wheat. In this way they manage to maintain the same turnover despite a 15% limit on their irrigation water.

Crucial for the success of HTF is a fast reaction time – shortages are rectified immediately. It costs approximately R140/ha to take part in the precision project. Small change, says Gerhard. We cannot afford to play around; we must know exactly what is going on.

[*Die Landbouweekblad*, 22 December 2017]

2.2.1 Explain in detail what is meant by **"precision farming is an integrated production system"**.

(4)

2.2.2 Briefly explain what the purpose of precision farming is with regard to:

(a) input cost

(1)

(b) yield production

(1)

2.2.3 In the reading on page 9 there are examples of the use of technology, e.g., satellite images and irrigation scheduling. List THREE main technological tools that are used in precision farming for crop cultivation.

-
-
-

(3)

2.2.4 List THREE disadvantages of precision farming.

- _____
- _____
- _____

(3)

2.2.5 In the picture on page 9 two types of capital are depicted. Name the TWO types of capital, identify an example of each type of capital in the picture and state the conversion term in each case.

- _____
- _____

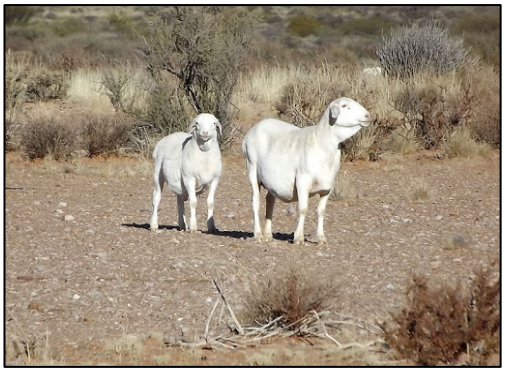
(6)

2.3 Study the pictures of farming methods below. One of the pictures portrays an extensive farming method and the other picture an intensive farming method.

A

[Source: <www.agriorbit.com>]

B



[Source: <www.vanrooysa.co.za>]

Study the statements regarding farming methods below. Associate each statement with one of the pictures above. Write only A or B to indicate which picture you associate with each statement.

2.3.1 Diseases are less common with this method.

_____

(1)

2.3.2 This method requires high labour inputs with resultant high labour costs.

_____

(1)

2.3.3 This method sometimes requires that a mineral lick and supplementary feed be given.

_____

(1)

2.3.4 This method requires a high capital outlay per hectare.

_____

(1)

2.3.5 High agricultural productivity is achieved with this method.

_____

(1)

2.3.6 The nomadic herding of cattle is an example of this method.

_____

(1)

2.4 Loss of soil or soil degradation is a worldwide problem.

2.4.1 List FOUR causes of damage to the soil that causes soil degradation.

- _____
- _____
- _____
- _____

(4)

2.4.2 List FOUR consequences of soil degradation.

- _____
- _____
- _____
- _____

(4)

2.4.3 The drought of 2019 in the Western Cape again emphasised that soil degradation and desertification should be prevented, and that conservation farming is of the utmost importance. List FOUR advantages of dividing pastures into camps.

- _____
- _____
- _____
- _____

(4)
[50]

QUESTION 3 SUSTAINABILITY, BUSINESS PLAN, ENTREPRENEURSHIP AND MARKETING

3.1 Study the table below that indicates the characteristics of Piet and Jan, and then answer the questions that follow:

PIET	JAN
1. Is a crop farmer.	1. Works for himself.
2. Diversifies by erecting self-catering housing units next to the river flowing through his farm.	2. Is willing to take risks.
3. Provides fishing gear to catch trout and also picnic spots.	3. Is always on the lookout for new ideas and new business opportunities.
4. There are ample bird species in the mountainous forest area around the river.	4. Is compiling a business plan for a new enterprise.
5. Establishes small game in the forest area.	5. Is energetic with a lot of self-confidence.

3.1.1 Who can be regarded as an entrepreneur? Piet? /Jan? /Piet and Jan?

_____

(1)

3.1.2 From the above table, name TWO characteristics of an entrepreneur.

- _____
- _____

(2)

3.1.3 Which document that is mentioned in the table could possibly help the entrepreneur to obtain funds from a financial institution?

_____

(1)

3.1.4 Briefly explain how a SWOT analysis can assist the entrepreneur in his planning for his new enterprise.

_____

_____

_____

_____

_____

_____

(4)

3.1.5 Name the type of tourism that Piet plans to add to his crop farming.

_____

(1)

3.1.6 Although tourism could have many advantages, it could also cause problems. Briefly discuss FOUR problems that could occur or disadvantages that could develop if Piet adds tourism to his crop farming.

- _____

  _____

- _____

  _____

- _____

  _____

- _____

  _____

(4)

3.1.7 List FOUR advantages of diversification for Piet in his enterprise.

- _____

  _____

- _____

  _____

- _____

  _____

- _____

  _____

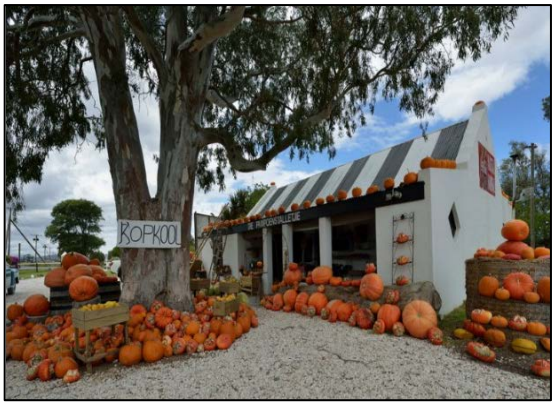
(4)

3.2 The following pictures are examples of different marketing channels. Carefully study the pictures and then answer the questions that follow.

A

[Source: <www.netwerk24.com>]]

B



[Source: <za.pinterest.com>]

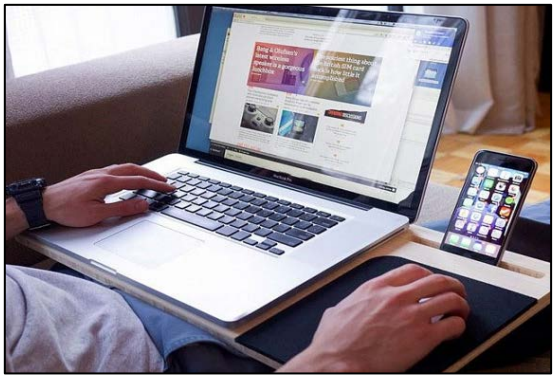
C

[Source: <www.shutterstock.com>]

D

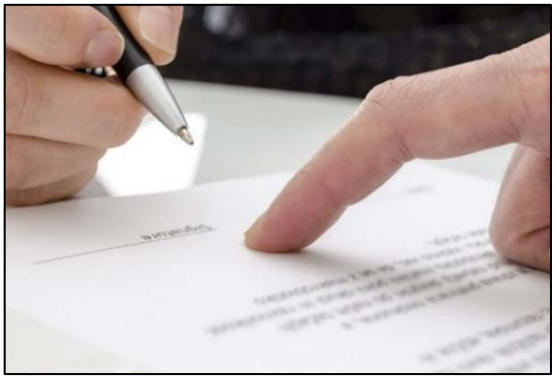
[Source: <mydoodiebox.com au>]

E



[Source: <www.suidkaapforum.com>]

F



[Source: www.istockphoto.com>]

3.2.1 Name the marketing method depicted in the pictures above.

_____

(1)

3.2.2 List THREE more marketing methods other than the method named in Question 3.2.1.

- _____
- _____
- _____

(3)

3.2.3 Identify the marketing channel depicted in each of the pictures numbered A to F above.

A _____

B _____

C _____

D _____

E _____

F _____

(6)

3.2.4 One advantage of the free market system is that it results in more competition.

Explain in detail how competition is indeed advantageous to the system.

_____

_____

_____

_____

_____

_____

(4)

3.3 Write down FIVE statements from the following paragraph that refer to marketing functions. Also write down the marketing function to which each statement refers.

> Many agricultural products are perishable products that must be kept cool in cold storage after they have been harvested. Some products, however, are immediately put into containers and taken from the farm to the consumer where they are offered for sale. Sometimes the original product must first be changed into a form that is more suitable for the consumer. Banks and insurance companies sometimes provide financial assistance to the producer with transactions and against risks.

- _____
- _____
- _____
- _____
- _____

(5)

3.4 Study the table below that indicates the number of bags of onions that was sold per week at different prices.

PRICE/BAG (R)	NUMBER OF BAGS OF ONIONS SOLD/WEEK	TOTAL INCOME (R)	FIXED COST (R)	VARIABLE COST (R)	PROFIT (R)
8.00	3 000	24 000	2 800	1 950	19 250
9.00	2 500	22 500	2 800	1 850	17 950
10.00	2 000	20 000	2 800	1 750	15 450
11.00	1 500	16 500	2 800	1 650	12 050
12.00	800	9 600	2 800	1 550	5 250
13.00	335	4 355	2 800	1 500	55

3.4.1 Name ONE factor according to the information above that influenced the demand for onions.

(1)

3.4.2 Explain the influence of the factor mentioned in Question 3.4.1.

(2)

3.4.3 Use the information in the table above and briefly explain how the increasing price of onions affects the profit of the enterprise.

(3)

3.4.4 Define the term **fixed cost**.

(2)

3.4.5 Give TWO examples of fixed cost for an onion farm.

- _____
- _____

(2)

3.4.6 If the selling price of onions is R3 000 per ton, the fixed cost R4 800 per hectare and the variable cost R2 050 per hectare, calculate the break-even point. Show the formula as well as all the calculations.

_____

_____

_____

_____

_____

_____

(4)
[50]

QUESTION 4 FARM MANAGEMENT, FINANCIAL PLANNING, HARVESTING AND VALUE ADDING

4.1 The items/information in the table below are needed to complete the statement of income and expenses of a fruit farm for the year ended 31 December 2020.

1.	New establishments	R320 000,00
2.	Fertiliser	R110 000,00
3.	Sales of plums – export	R520 000,00
4.	Weed and disease control	R90 000,00
5.	Marketing	R60 000,00
6.	Sales of peaches – local market	R500 000,00
7.	Packaging	R120 000,00
8.	Sales of apricots – local market	R240 000,00
9.	Peaches for canning	R280 000,00
10.	Transport/fuel	R190 000,00
11.	Dried peaches	R300 000,00
12.	Labour (wages)	R670 000,00
13.	Sales of pears – export	R490 000,00
14.	Water/electricity	R270 000,00
15.	Insurance	R70 000,00

4.1.1 Using the headings in the table below, prepare a statement of income and expenses from the items in the table above for the relevant fruit farm.

INCOME	VALUE (R)	EXPENSE	VALUE (R)
TOTAL		**TOTAL**	

(7)

4.1.2 Calculate the profit or loss of the fruit farm. (Show formula and all the calculations.)

(2)

4.1.3 It is clear that labour is this farm's biggest expense. Provide TWO suggestions/ways to possibly reduce this expense.

-
-

(2)

4.1.4 The statement of income and expenses on the previous page is only one of the many records that a farmer should keep. Keeping these records can be done using microcomputers, etc. List FOUR requirements for good and efficient record keeping.

-
-
-
-

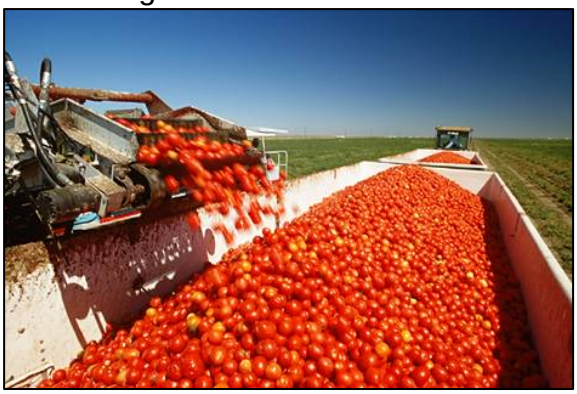
(4)

4.2 Harvesting products is a critical and very important time on the farm. Study the pictures below and then answer the questions that follow.

Harvesting method A

[Source: <www.depositphotos.com>]

Harvesting method B



[Source: <www.shuttersandflowers.com>]

Harvesting method A

[Source: <www.depositphotos.com>]

4.2.1 Identify the harvesting methods numbered A and B in the above pictures.

A _____

_____

B _____

_____

(2)

4.2.2 Which method above should preferably be used if the product is intended for the fresh-produce market?

_____

(1)

4.2.3 List FIVE externally observable properties that can be used to determine whether fresh-market produce is ready to be harvested.

- _____
- _____
- _____
- _____
- _____

(5)

4.2.4 List FOUR advantages of using harvesting method A that are not possible when harvesting method B is used.

- _____
- _____
- _____
- _____

(4)

4.2.5 Explain in detail the exact technique that should be followed when harvesting the product using harvesting method A. (Visible in the picture.)

_____

_____

_____

_____

_____

(3)

4.2.6 Which requirements should the harvesting container in harvesting method A satisfy? List FOUR requirements.

- _____

  _____
- _____

  _____
- _____

  _____
- _____

  _____

(4)

4.3 Packaging products is a specialist field within the total food processing and marketing effort.

4.3.1 Packaged agricultural products must be labelled. In terms of legislation certain information must appear on the label. Briefly discuss FOUR types of information that should be included on the label.

- _____
- _____
- _____
- _____

(4)

4.3.2 Provide the name of the Act that makes labelling compulsory.

_____

(1)

4.3.3 Which FOUR advantages are obtained by packaging food products?

- _____
- _____
- _____
- _____

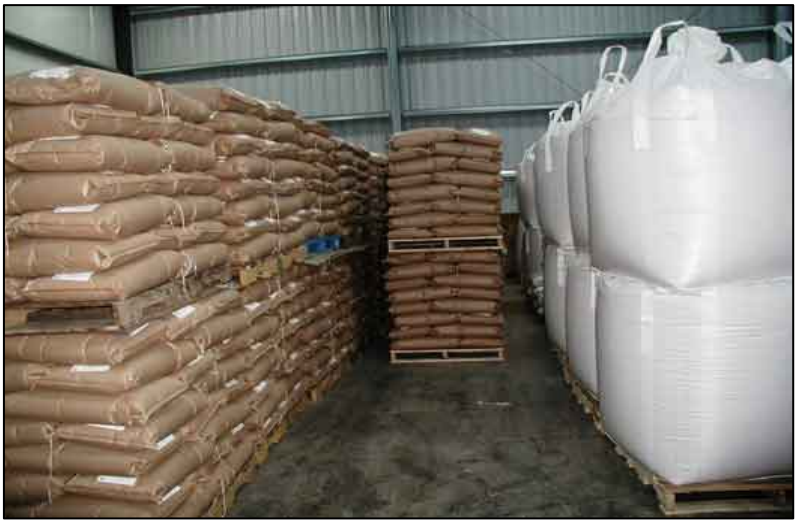
(4)

4.3.4 To which one of the three agricultural sectors does the packaging of agricultural products belong?

_____

(1)

4.4 Various methods can be used to store grain. In the picture below, one method is depicted.



[Source: <www.depositphotos.com>]

4.4.1 Which TWO factors mainly determine the method of storing grain?

- _____
- _____

(2)

4.4.2 List FOUR advantages of storing products in bags.

- _____
- _____
- _____
- _____

(4)
[50]

150 marks

Total: 200 marks

ADDITIONAL SPACE TO ANSWER QUESTIONS. REMEMBER TO CLEARLY INDICATE AT THE QUESTION THAT YOU USED THE ADDITIONAL SPACE TO ENSURE THAT ALL ANSWERS ARE MARKED.

