



education

Department:
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REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

AGRICULTURAL MANAGEMENT PRACTICES

EXEMPLAR 2008

MARKS: 200

TIME: 2½ hours

This question paper consists of 67 pages.

INSTRUCTIONS AND INFORMATION

1. Answer any FOUR questions in this question paper. Answer ONE crop production and THREE animal production enterprises OR TWO animal and TWO crop production enterprises OR ONE animal and THREE crop production enterprises.
2. Start EACH production enterprise on a NEW page in the answer book.
3. Number your answers correctly according to the numbering system used in this question paper.
4. Write neatly and legibly.
5. Study the questions carefully and make sure you answer what is required.

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QUESTION 1: PIG PRODUCTION

- 1.1 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A - U) next to the question number (1.1.1 – 1.1.10) in the ANSWER BOOK, for example 1.1.11 D. An answer from COLUMN B can only be used ONCE.

COLUMN A		COLUMN B	
1.1.1	The correct mass of baconers at the marketing stage	A	knives
1.1.2	An apparatus used in the mechanisation of a bacon plant	B	controlling
1.1.3	The aspect of management linked to payment of a performance bonus to a worker	C	draw up a budget
1.1.4	The first step in making a financial decision in an agricultural enterprise	D	fresh meat
1.1.5	A processed product in pork production.	E	20 – 30 kg
1.1.6	The type of market that is determined by supply and demand	F	controlled market
1.1.7	Certain people do not eat pork even if they are hungry	G	computers
1.1.8	A plan that indicates all aspects of the farming unit as well as the possibility of expansion	H	farm plan
1.1.9	Which pig grouping will have the lowest feed cost/sow as percentage of the variable costs	I	80 – 90 kg
1.1.10	The increased production achieved by changing the feed of a pig production unit from milled product to pelleting	J	religious conviction
		K	a positive cash flow
		L	weaners
		M	motivation
		N	polony
		O	economical
		P	free market
		Q	business plan
		R	profit margin
		S	globalization
		T	replacement animals
		U	growth rate

(10 x 1)

(10)

- 1.2 'Extension officers in an enterprise can assist a farmer in the production and marketing of pork'. What information can extension officers relay to pig farmers to assist them with the more effective production and marketing of their products? (5)
- 1.3 'Precision farming may be used to improve farm management from several perspectives'. Discuss this statement by referring to these perspectives. (4)
- 1.4 Indicate any FOUR items reflected in a typical marketing record sheet when a farmer produces baconers for a processing company. (4)
- 1.5 Name TWO types of labourers that can be used on a pig farm. (2)
- 1.6 It is sometimes necessary to take disciplinary action against labourers. List FIVE important criteria when action is taken against labourers. (5)
- 1.7 The following table summarises the classification of pork.

% MEAT	mm	CLASS
≥70	≤ 12	P
68 – 69	13 – 17	O
66 – 67	18 – 22	R
64 – 65	23 – 27	C
62 – 63	28 – 22	U
≤ 60	> 22	S
CONFORMATION	CLASS	
Very fat	1	
Fat	2	
Medium	3	
Round	4	
Very round	5	
DAMAGE	CLASS	
Slight	1	
Moderate	2	
Severe	3	
Sex	M/F	

- 1.7.1 The abattoir slaughters a sow and the carcass measurements are as follows:

19 mm meat
medium amount of fat
Slight damage to the meat on the right leg

Name the markings that the abattoir will place on the carcass and also where these markings will be placed on the carcass.

(4)

- 1.7.2 The butchery receives a carcass from the abattoir. The following markings were printed on the carcass of the pig.

U3 on each side
2M once on carcass

Explain the meaning of each of these markings.

(4)

- 1.8 The following photographs represent the activities in an abattoir. Various by-products are produced during this process.



- 1.8.1 Name FOUR by-products derived from slaughtering pigs.

(4)

- 1.8.2 Name THREE processed products that are produced from these by-products.

(3)

- 1.9 A farmer operates a pig unit with 300 sows. The farmer must be aware of all the important aspects to make a success of his farming enterprise. Name any FIVE management aspects that he must keep in mind when operating his farming enterprise.

(5)
[50]

QUESTION 2: BEEF PRODUCTION

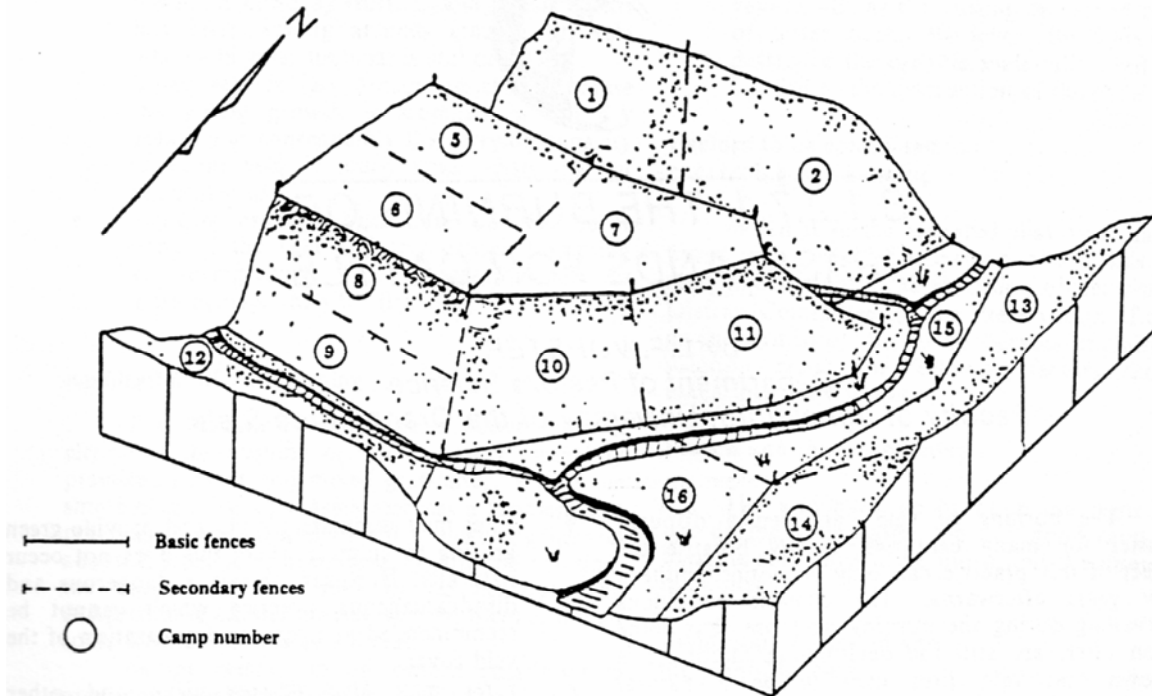
- 2.1 Choose an item from COLUMN B to match a description in COLUMN A. Write only the letter (A - L) next to the question number (2.1.1 - 2.1.10) in the ANSWER BOOK, for example 2.1 E. An answer from COLUMN B can only be used.

COLUMN A		COLUMN B	
2.1.1	Income–expenditure statements	A	an individual with the creative ability to initiate a business venture
2.1.2	Biological farming	B	operating receipts, capital sales, operating expenses, capital expenditure and money borrowed
2.1.3	Fat in beef	C	to determine profit
2.1.4	Marketability	D	accepting/offering a bribe on a farm
2.1.5	Diversity	E	farming system that excludes the use of synthetically manufactured farm inputs such as pesticides, growth regulators, et cetera
2.1.6	T-bone steak	F	a sense of dissatisfaction or feeling of injustice which develops in the relationship between the employee and employer
2.1.7	Very serious offence	G	the fatness and health of the carcass
2.1.8	Cash flow	H	determines juiciness/succulence
2.1.9	Legislation about grievances and labour relations	I	expensive cut
2.1.10	Entrepreneur	J	the way of life as broader communities with differences in religion, culture, gender, age, et cetera
		K	the activity of increasing the economic value of agricultural products/services
		L	to determine the practicability of a decision.

(10 x 1)

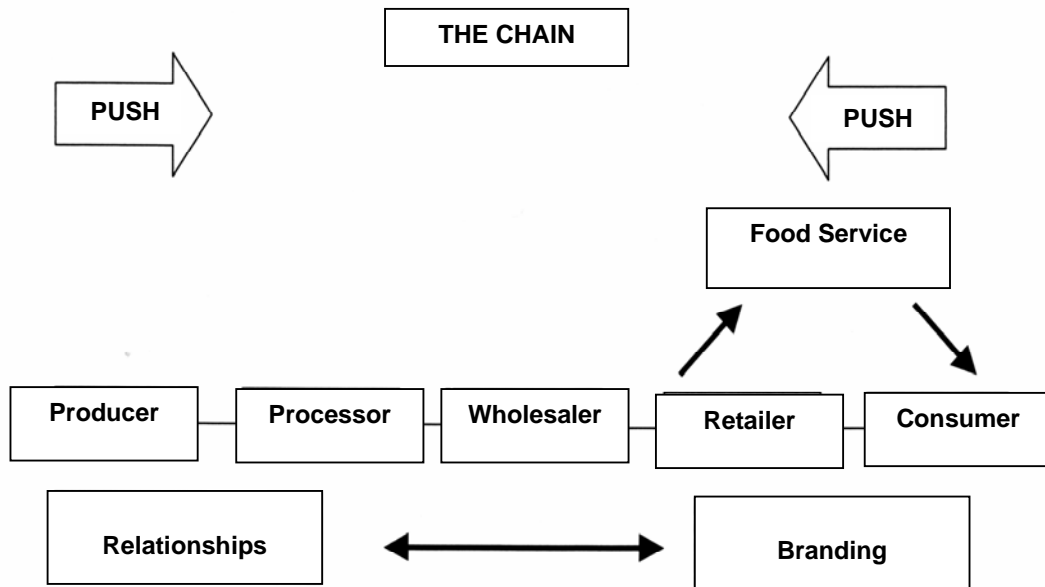
(10)

- 2.2 Grading of meat in some form or the other is virtually a world-wide practice. What is the objective of grading meat? (2)
- 2.3 A small emerging farmer in your area does not grade his/her meat before selling. How would you advise him/her on the importance of grading meat? (3)
- 2.4 The function of vacuum packaging is to maintain the meat in a perfect state, by excluding air. Briefly highlight the importance of excluding air from meat products. (4)
- 2.5 Study the diagram below and answer the questions that follow.



- 2.5.1 An emerging farmer bought a piece of land in the summer rainfall area for beef farming. He/She understands that physical planning of the veld involves the subdivision of the veld into camps. He/She wants to know the importance of subdividing the veld into camps. How would you advise him/her? (4)
- 2.5.2 'Effectiveness of rainfall affects the palatability of pastures in any given veld'.
How would the use of contours contribute to the effectiveness of rainfall especially in camps such as 8, 9, 10 and 11? (2)
- 2.5.3 Which possible health problems might arise in camps 15 and 16 during the summer? (2)

- 2.5.4 Explain the important aspects to consider with regard to soil conservation when erecting fences around camps 8 – 11. (3)
- 2.6 Resource utilisation, such as soil utilisation, is important in beef production. Explain how managing soil as a resource is beneficial to a beef farmer. (3)
- 2.7 Record keeping in the beef industry is of paramount importance because it assists the farmer to maximize profit. Explain why it is important for a beef farmer to keep records of his beef production unit. (4)
- 2.8 There are many marketing options for beef animals. Name any TWO channels a farmer can choose from in order to sell his/her beef animals. (2)
- 2.9 Successful downstream marketing businesses go through a common cycle of development. Starting with relationship building at the front end and progressing to brand recognition for their products once they have established themselves commercially. Study the beef-marketing chain below and answer the questions that follow.



What is the role of the following role players in the beef-marketing chain:

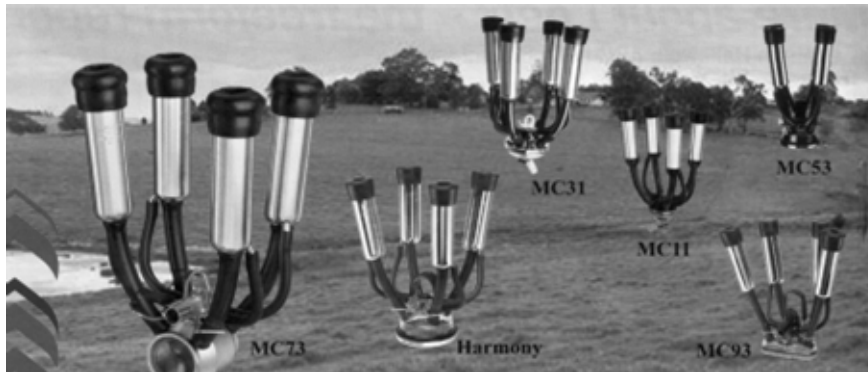
- (a) Producer (1)
- (b) Processor (1)
- (c) Wholesaler (1)
- (d) Retailer (1)

- 2.10 Business planning is about results. Too many people think of business plans as something you do to start a company, to apply for a loan or to find investors. Preparing a business plan is an organised, logical way to look at all of the important aspects of a business.
A certain farmer in your area wants to start a beef enterprise and he/she wants advice on the general key components of a standard business plan. The format and outline of a business plan vary from business to business. Give him/her some ideas of topics that must be included in a business plan. (5)
- 2.11 Name possible tasks that a labourer on a beef farm has to execute. (2)

[50]**QUESTION 3: DAIRY PRODUCTION**

- 3.1 Study the following illustrations related to dairy production.

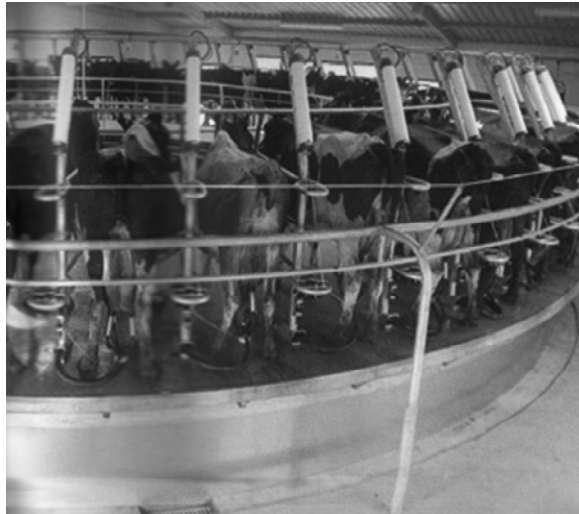
- 3.1.1 Identify this part of the milking machine.



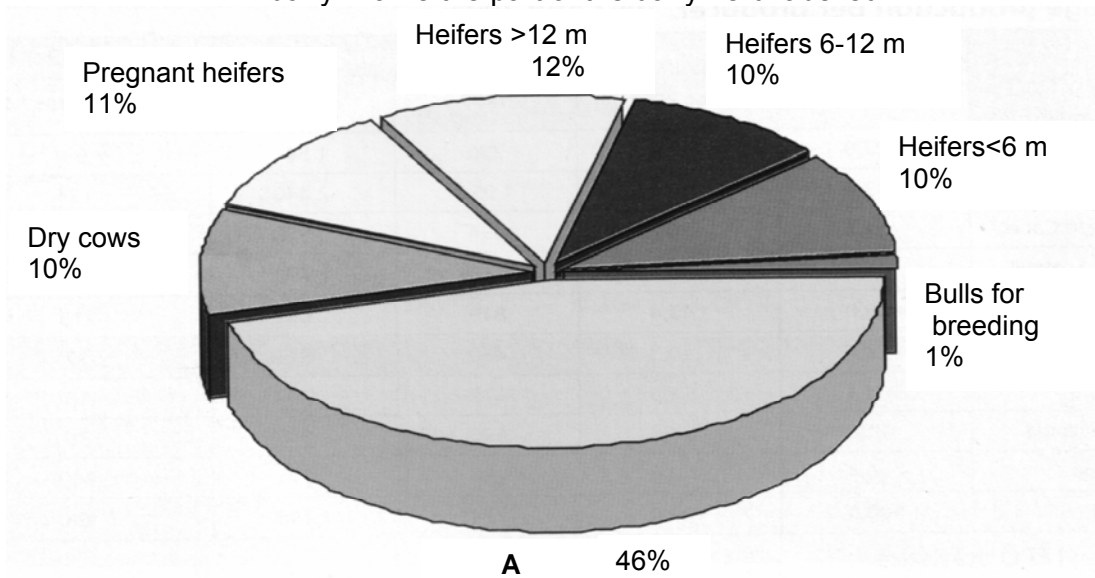
- 3.1.2 The two workers in the photograph below are bottling milk. Which ONE of the two is dressed better to prevent the possible spread of TB? (Write only LEFT or RIGHT.)



3.1.3 What is the type of milking system in the photograph below called?



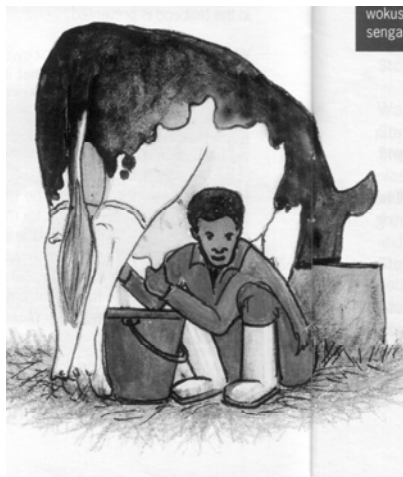
3.1.4 The following pie chart represents the composition of a typical dairy. Name the part of the dairy herd labelled A.



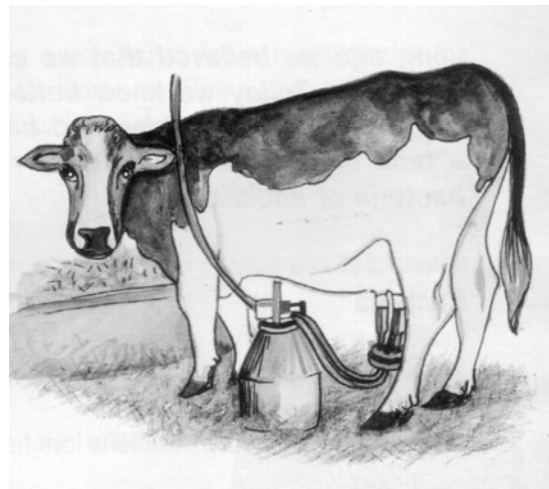
3.1.5 Name the change that occurred in the protein of the milk during the making of the product represented in this photograph below.



3.1.6 Identify the most effective way to withdraw milk from a cow (A or B?).



A



B

The following represents the steps to wash a milking machine. QUESTIONS 3.1.7 – 3.1.10 are based on this washing procedure.

1
Rinse with cold water.
Spoel met koue water uit.
Tsokotsa ka metsi a batang.
Pula ngamanzi abandayo.
Yakaza ngamanzi abandayo.

2
6-10 MINUTES
°C
45 15 30
Wash with warm water and soap.
Was met warm water en seep.
Hlatswa ka metsi a futhumetseng le sesepa.
Hlamba ngamanzi afudumeleyo nesepa.
Geza ngamanzi afudumele nensipho.
(Acid step: 1-2 times a week)
(Suurstap: 1-2 keer per week)
(ka makgetlo a 1-2 ka beke)
(ka-1 naka-2 ngeveki)
(1-2 izikhathi ngeviki)

3
3 MINUTES
45 15 30
A
Rinse with sanitiser (±3 minutes).
Spoel met ontsmettingsmiddel.
Tsokotsa ka sebolaya dikokwanahloko.
Yosula ngesibulali-ntsholongwane.

5
C
Acid step. Use cold water and acid.
Suurstap. Gebruik koue water en suur.
Mohato wa asete. Sebedisa metsi a batang le asete.
Inyathelo leasidi. Sebenzisa amanzi abandayo neasidi.
Isinyathelo se-esidi. Sebenzisa amanzi abandayo ne-esidi.

- 3.1.7 What is the substance in container A called?
- 3.1.8 Identify the chemical substance represented by B.
- 3.1.9 What is the substance in container C called?
- 3.1.10 What is the required water temperature in Step 2? (10 x 1) (10)
- 3.2 Labour is a crucial component of a dairy production unit. Name any FOUR responsibilities of management with regard to labour. (4)
- 3.3 Identify the difference between margarine and butter with reference to their origin. List the steps to make butter in a logical order. (9)


3.4 Milk buyers take samples of the milk on a farm. These samples are kept refrigerated and are analysed.

Name THREE components for which milk is analysed. (3)

3.5 Dairy organisations can fulfil a wide range of functions which include price formation, marketing, research, technical assistance, et cetera.

Compare the THREE main dairy organisations in South Africa in a table form, by giving the name of the organisation and the role they play in dairy farming. (6)

3.6 The following table was taken from the *Dairy Mail* October 2003. Study the information and answer the questions that follow.



- 3.6.1 During the period April – June 2003 producers with more milk were advantaged.
Give a reason for this statement. (1)
- 3.6.2 Calculate the average feed cost per province in rand per cow per day. Indicate the province with the highest feed cost.
Show ALL calculations. (4)
- 3.6.3 Calculate the margin above feed cost in rand/cow/day for ALL THREE groups of cows in KwaZulu-Natal. (3)
- 3.7 Draw a table to differentiate between the advantages, disadvantages and descriptions of the following terms related to milk processing:
 - Pasteurisation
 - Homogenisation
 - Sterilisation and UHT treatment(9)
- 3.8 What does the net value of a business reflect? (1)
- [50]**

QUESTION 4: SHEEP PRODUCTION (MUTTON)

4.1 Various possible options are provided as answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (4.1.1 – 4.1.10) in the ANSWER BOOK, for example

4.1.11 B.

4.1.1 The responsible use of veld and other natural resources to ensure sustainable mutton production is part of ...

- A the Occupational Health and Safety Act.
- B Agri BEE.
- C the national land care programme.
- D land reform.

4.1.2 To keep records of the quantity and quality of carcasses is part of ... in management.

- A decision-making
- B leadership
- C control
- D organisation

4.1.3 The process whereby the muscle becomes tense after slaughtering is called ...

- A cool crimping.
- B ripening.
- C aging.
- D rigor mortis.

4.1.4 The optimum temperature for the ripening of meat to take place:

- A 0 °C
- B 6 °C
- C 8 °C
- D 10 °C

4.1.5 The marketing of a product whereby the product can be sold to any person according to an agreed price is called ...

- A free marketing.
- B controlled marketing.
- C co-operative marketing.
- D governmental marketing.

- 4.1.6 The first cut into a sheep carcass is to ...
- A divide the ribs.
 - B divide it in the length.
 - C cut out the loin.
 - D cut out the leg.
- 4.1.7 The size of the packaging material will be influenced by ...
- A the price of mutton.
 - B the number of buyers.
 - C selling bulk or small units.
 - D the number of producers.
- 4.1.8 Which one is NOT necessary when marketing a carcass?
- A Clean
 - B Marked
 - C Divided into the different cuts
 - D Graded
- 4.1.9 Which ONE of the following statements is NOT related to a business plan?
- A To show your knowledge of an enterprise
 - B Define objectives
 - C Define agreements between partners
 - D Evaluate the product line
- 4.1.10 When processing fresh meat for human consumption it is important to ...
- A use previously handled knives.
 - B wear a hair protector.
 - C wash the carcass.
 - D mark every bone.
- (10 x 1) (10)
- 4.2 Thomas buys a sheep to slaughter with a mass of 70 kg for R15/kg (living mass) at an auction.
- 4.2.1 Calculate the price that Thomas has paid for the sheep. (1)
- 4.2.2 The butcher-off percentage is 55%. What will the slaughter mass of this carcass be? (2)
- 4.2.3 Calculate the price of meat/kg of this particular carcass after slaughtering. (4)
- 4.2.4 Which factors will have an influence on the price of the carcass? (3)

- 4.3 Evaluate the importance of the ripening of meat with reference to the following aspects:
- 4.3.1 Briefly explain changes occurring in the muscles of the carcass when meat is ripened. (2)
- 4.3.2 How is the ripening of meat done? (2)
- 4.3.3 Briefly explain any FOUR consequences of the ripening process. (4)

- 4.4 Study the table below on the marketing of whole carcasses and answer the questions that follow.

	SHEEP 1	SHEEP 2	SHEEP 3
Living mass	40	60	70
Butcher-off percentage	55	52	50
Price/kg slaughtered	R30	R27	R27
Feed cost/kg	R5	R6	R8

- 4.4.1 Explain how this table can help a farmer in the marketing of his animals. (3)
- 4.4.2 What living mass value will yield the highest income? Verify your answer by completing the following income–expenses statement of the data.

	SHEEP 1	SHEEP 2	SHEEP 3
	40 kg	60 kg	70 kg
Butcher-off percentage	55	52	50
Slaughtered mass	22		
Income			
Feed cost	R200		
Profit			

- 4.5 The use of labour is essential in sheep farming. Name TWO aspects relating to the conditions of employment that must be included in a labour contract. (2)
- 4.6 Explain how erecting an abattoir for sheep may contribute to the easing of poverty. (4)
- 4.7 A business plan can be drawn up for a new enterprise or for an existing enterprise. Give THREE reasons to indicate the necessity of drawing up a business plan for an existing enterprise. (3)

[50]

QUESTION 5: BROILERS PRODUCTION

- 5.1 Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (5.1.1 – 5.1.10) in the ANSWER BOOK.
- 5.1.1 Depending upon size, the chicken is split in half, lengthwise or quartered and placed skin side down in a shallow pan and fried.
- 5.1.2 This factor determines the size and tenderness of the meat of broilers
- 5.1.3 Adult male chickens older than one year of which the meat is extremely tough and only good for soup
- 5.1.4 Material used to cover chilled and frozen poultry to ensure excellent quality is preserved.
- 5.1.5 Describes a management principle when a worker receives leave for being very productive
- 5.1.6 De-feathering of the carcass before eviscerating the broiler
- 5.1.7 The net amount of feed used to produce one kilogram of meat
- 5.1.8 The number of years for which long-term planning makes provision
- 5.1.9 The process which starts with relationship building at the front end and progresses to brand recognition of their products on the other end
- 5.1.10 The data-recording system that captures the data from a pocket notebook with day-to-day activity information (10 x 1) (10)
- 5.2 Record-keeping is of great importance to a broiler farmer/enterprise and has many advantages. List THREE essential physical records that must be kept by a broiler producer. (3)
- 5.3 Labourers involved in farm work and processing of poultry products, such as meat are protected at their workplace by certain laws.
- 5.3.1 Which law or Act of parliament protects labourers against unfair dismissal and discrimination on the farm? (1)
- 5.3.2 Which law or Act of parliament protects workers against injury on a farm? (1)
- 5.3.3 A farm worker is employed for the first time at a boiler farm. Which protective clothing would you recommend for this newly appointed worker? (4)

5.4 A farmer with five broiler houses with a total floor area of 800 square metres per house, places 12 000 broilers in each house. The broilers in the five houses were placed within a week. Forty two days after the placing they were taken to the abattoir. The cleaning period for the houses was 14 days.

In one cycle the farmer delivers 55 200 broilers to the abattoir. The total slaughter mass was 102 120 kg. The total feed consumption was 201 200 kg at a cost of R1 000,00/ton. The farmer pays R8 000,00 on interest at the bank. Calculate the following: (Show ALL your calculations.)

5.4.1 Average slaughter mass (3)

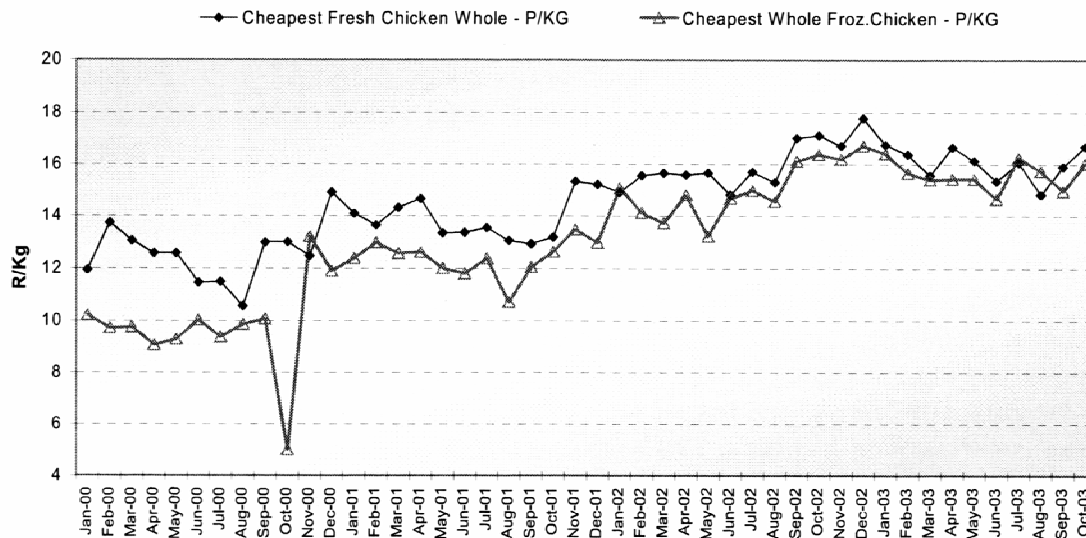
5.4.2 Yield per square meter (3)

5.4.3 Feed-conversion ratio (3)

5.5 Preparing a business plan is an organised, logical way to look at all of the important aspects of a business. A poultry farmer wants to use a business plan for his/her production. Name FIVE requirements that he/she has to consider first before finally preparing the plan. (5)

5.6 Deboning and packing of broilers can add value to the product for the farmer. Create a list to indicate the correct steps to follow for the deboning of chickens. (5)

5.7 Study the following graph on cheapest frozen and fresh chicken prices from January 2000 to October 2003 and answer the questions that follow.



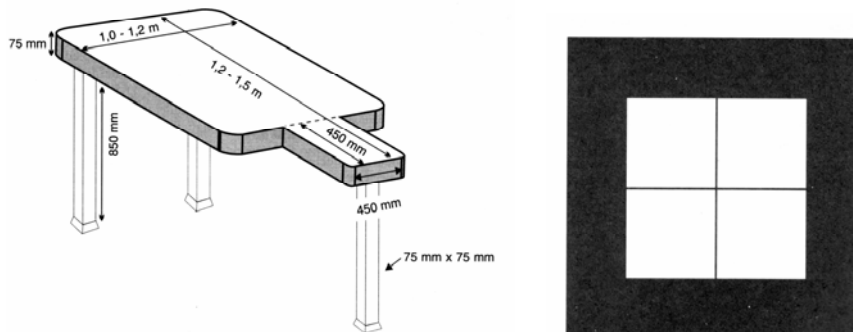
- 5.7.1 What was the price of whole fresh chickens in January 2000? (1)
- 5.7.2 In which month and year was the price of whole fresh chickens the highest? (1)
- 5.7.3 In which month and year was the price of frozen and fresh whole chickens the same? (1)
- 5.7.4 Determine the price increase for frozen chickens from October 2000 to October 2003. (1)
- 5.8 Name THREE methods a farmer can use to sell his broilers. (3)
- 5.9 Name any FIVE management records a farmer should have by the end of each cycle. (5)

[50]

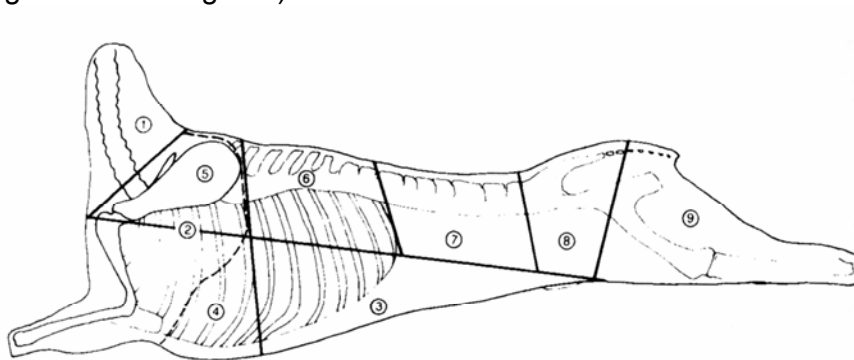
QUESTION 6: GAME FARMING

6.1 Answer the following questions.

6.1.1 Study the following illustrations of equipment. What is the equipment used for on a game farm?

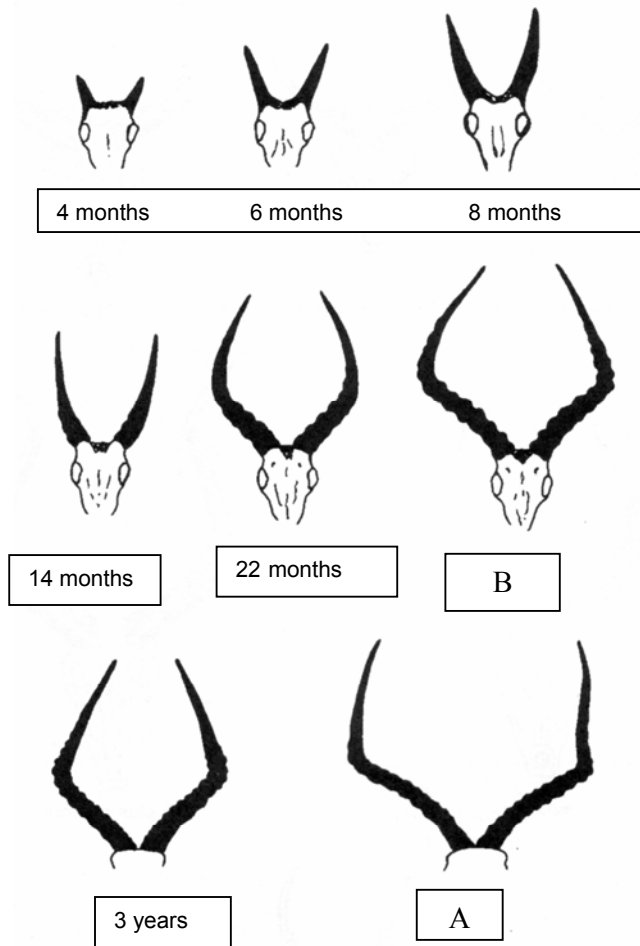


6.1.2 Identify the type of game represented by the following diagram (big game or small game).



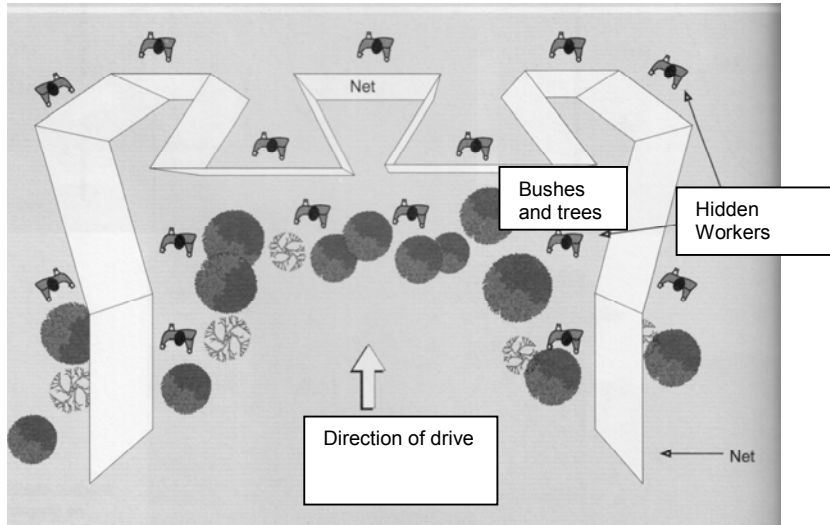
6.1.3 With reference to the diagram in QUESTION 6.1.2, give the name of the part numbered 8.

6.1.4 The following diagrams represent the horns of an impala ram at different ages. Give the age of the impala ram marked A.

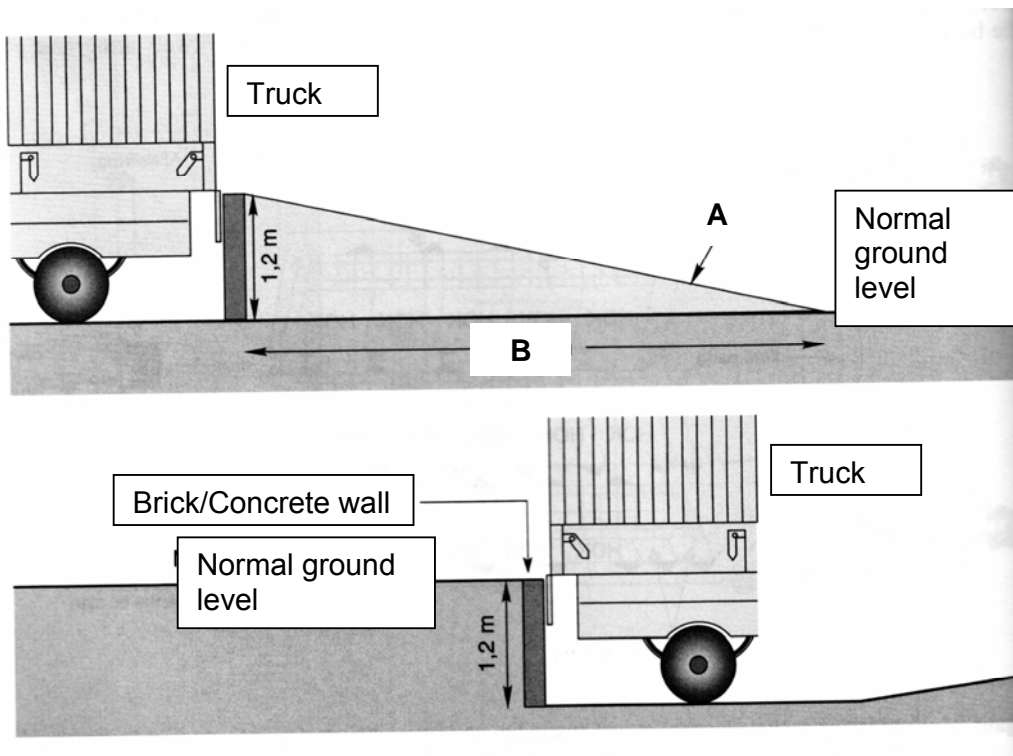


6.1.5 With reference to the diagrams in QUESTION 6.1.4, give the age of the impala ram labelled B.

6.1.6 What is the purpose of erecting the structures below on game ranches?



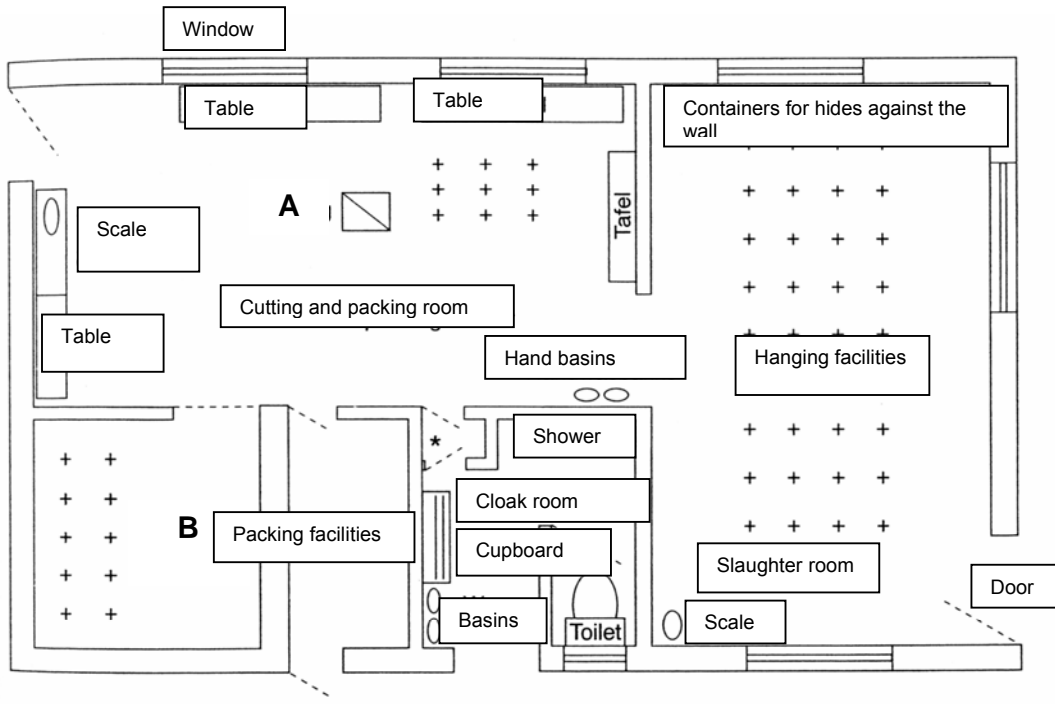
The correct handling of game is very important. In order to do it correctly, it is extremely important that the handling facilities for game are correct. The image below is one of loading facilities on a game ranch. Answer QUESTION 6.1.7 and 6.1.8 on the loading facilities.



6.1.7 What is the degree of incline for the ramp marked A supposed to be?

6.1.8 What is the distance of the area marked B?

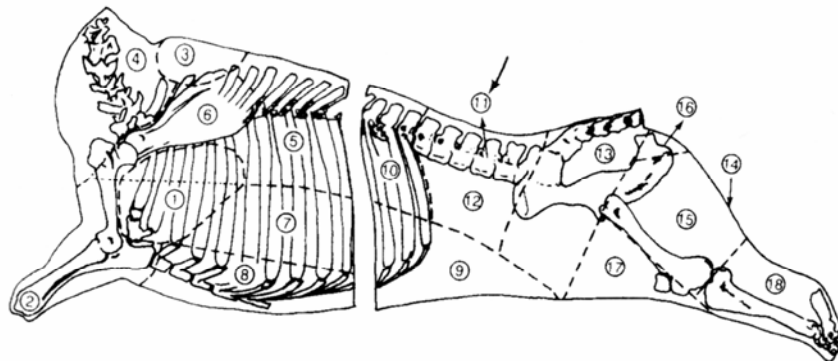
The following is a plan of working facilities on a game farm. Answer QUESTIONS 6.1.9 – 6.1.10 related to this facility.



6.1.9 What is the name of the equipment marked A?

6.1.10 What is the name of the room labelled B? (10 x 1) (10)

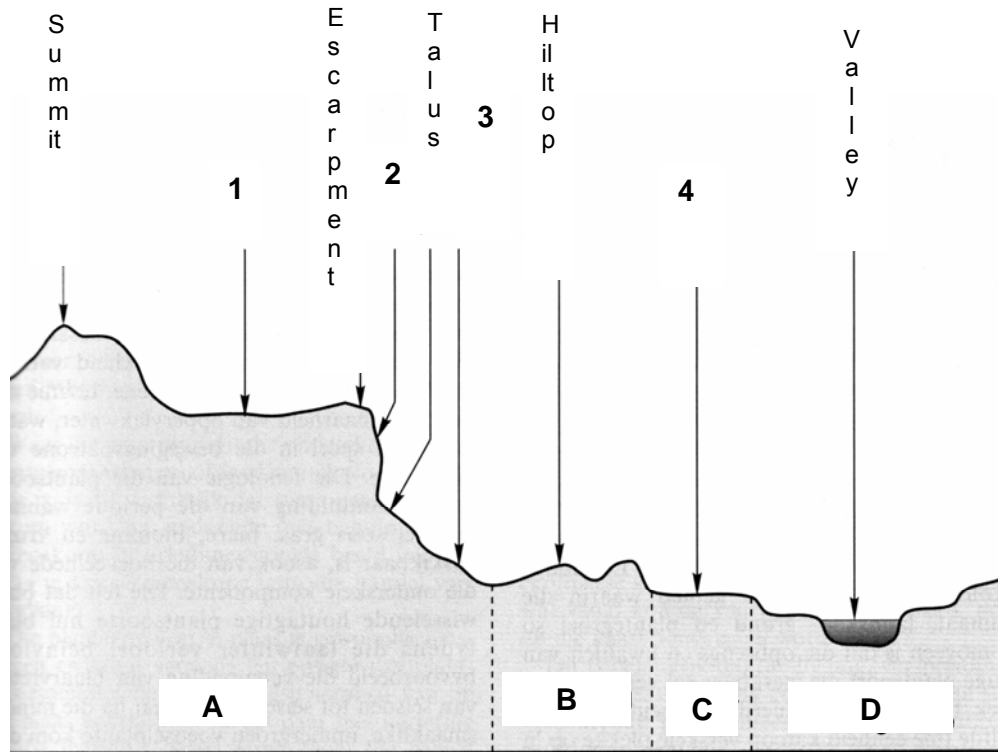
6.2 The diagram below represents the carcass of an antelope.



6.2.1 Name the parts that will form the forequarter of this antelope. (5)

6.2.2 Compile a list of parts to indicate the sequence to remove the different cuts of the hindquarter. (5)

6.3 The presentation below is of land forms on a game ranch.



6.3.1 Name the numbered landscape parts indicated by 1 – 4. (4)

6.3.2 Name the veld types found at A – D. (4)

6.4 Cash flow budgets are a healthy base for obtaining credit as well as financial control of the cash position of an enterprise. Compile a list to indicate the features of such a cash flow budget. (6)

6.5 Many game farmers do their own marketing of hunting expeditions. You, as an experienced game farmer, wish to explain to other farmers the content of such a brochure. Compile a list of important information needed in a brochure to advertise these hunting expeditions. (6)

6.6 The planning phase to develop an effective game farm is a matter of utmost importance. Support this statement by compiling planning guidelines that will ensure success with your game farm. (6)

6.7 The minister of environmental affairs and tourism gives guidelines on the forbidden hunting of protected game in terms of section 97 of the National Environmental Management and Biodiversity Act, 2004 (Act 10 of 2004). Name any FOUR unlawful hunting methods of protected game. (4)

[50]

QUESTION 7: LAYING HEN PRODUCTION

7.1 Change the underlined word in each of the following sentence to make the statements TRUE:

- 7.1.1 Free-range layers lay their eggs in poultry houses.
- 7.1.2 Long-term planning extends over five years.
- 7.1.3 Communication is a very important part of motivation.
- 7.1.4 The Occupational Labour and Safety Act is Act 85 of 1993.
- 7.1.5 Extra large eggs refer to eggs weighing at least 50 g each.
- 7.1.6 Statistics captured by SAPA refer to poultry-meat exports.
- 7.1.7 The Agricultural Product Hygiene Act is Act 119 of 1990.
- 7.1.8 Humans with Aids should be fired on a poultry farm, because of health reasons.
- 7.1.9 The last step in the planning process is to be sure that there is enough capital for your plan.
- 7.1.10 Very high temperatures are not a disadvantage for layers because they are kept in lay batteries. (10 x 1) (10)

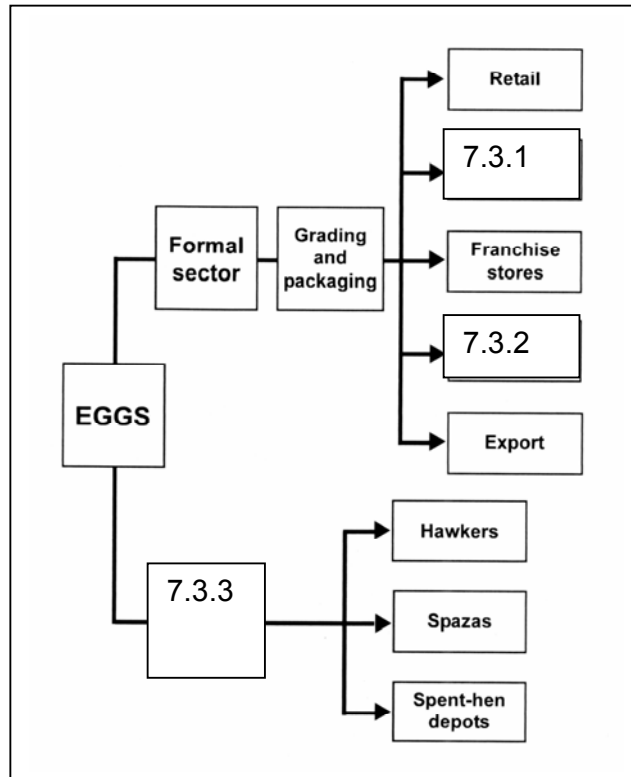
7.2 Redraw the following table and fill in the missing information indicated by 7.2.1 – 7.2.5.

SA grading system for chicken eggs

	Grade A	Grade B	Grade C
Shell	Clean, sound	7.2.1	Cracked, 1/3 stained, no dirt
Air-cell size	7.2.2	9,6 mm	No limit
Yolk	Outline distinct, round, reasonably well centred	Outline visible, moderately oblong	7.2.3
Break-out appearance	7.2.4	Yolk slightly flattened and enlarged	Yolk enlarged or flattened, thin albumen
Weight		At least 49 g per egg	7.2.5

(5)

The following schematic representation indicates the distribution channels in the egg industry.



7.3 Answer the following questions:

7.3.1 Label the blocks indicated by 7.3.1 – 7.3.3. (3)

7.3.2 Name any THREE retail stores where eggs will be available. (3)

7.4 The deputy minister of agriculture, acting on behalf of the minister of agriculture has, under section 15 of the Agricultural Product Standards Act, 1990 (Act 119 of 1990) made certain regulations regarding the grading, packaging and marketing of eggs destined for sale in South Africa.

Compile a list of the regulations for a new packaging firm with regard to marking particulars for the containers of eggs. (5)

7.5 The following TWO farmers are both in the laying-hen industry. Study their financial data and answer the following questions.

Mr Dube

COSTS	Rand	BENEFITS	Rand	PROFIT
Cost price of layers	13 440,00	Eggs	24 418,37	
Feed	8 500,00	Sales of layers	4 560,00	
Electricity/ Water		Manure	3 500,00	
Gas for heating	342,00			
Egg trays	1 554,16			
Veterinary care				
Maintenance				
Total				

Mkhoma poultry project

COSTS	Rand	BENEFITS	Rand	PROFIT
Cost price layers	13 440,00	Eggs	24 418,37	
Feed	10 500,00	Sales of layers	4 560,00	
Electricity/ water		Manure		
Gas for heating	342,00			
Egg trays	1 554,16			
Veterinary care	1 230,00			
Maintenance				
Total				

7.5.1 Calculate the net profit of the two farmers. Show ALL the calculations. (6)

7.5.2 Which ONE of the two farmers were the most successful? (1)

7.5.3 Give THREE reasons, from the data in the table, why the farmer mentioned in QUESTION 7.5.2 was more successful. (3)

7.6 Sometimes disciplinary actions have to be taken against labourers.

Name any FIVE requirements of disciplinary actions. (5)

7.7 Formulate guidelines for labourers to follow when collecting eggs. (7)

7.8 Name any TWO production records in connection with layers. (2)

[50]

QUESTION 8: SHEEP PRODUCTION (WOOL)

8.1 Various possible options are provided as answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (8.1.1 – 8.1.10) in the ANSWER BOOK, for example

8.1.11 B.

8.1.1 The aim of land reform in wool production is part of ...

- A the Occupational Health and Safety Act.
- B Agri BEE.
- C the national land care program.
- D land reform.

8.1.2 To keep records of the quantity and quality of the wool produced per sheep can assist a farmer in ...

- A deciding to cull an ewe.
- B Determining when to market the wool.
- C controlling the shearing process.
- D organising the labour.

8.1.3 One of the problems with wool is that it ...

- A can shrink in water.
- B is warm.
- C does not burn easily.
- D can be weaved.

8.1.4 A breed of sheep where primarily the pelt is used in the industry is the ...

- A merino.
- B dormer.
- C karakul.
- D Van Rooy.

8.1.5 The marketing of produce whereby the price is determined by a contract is called ...

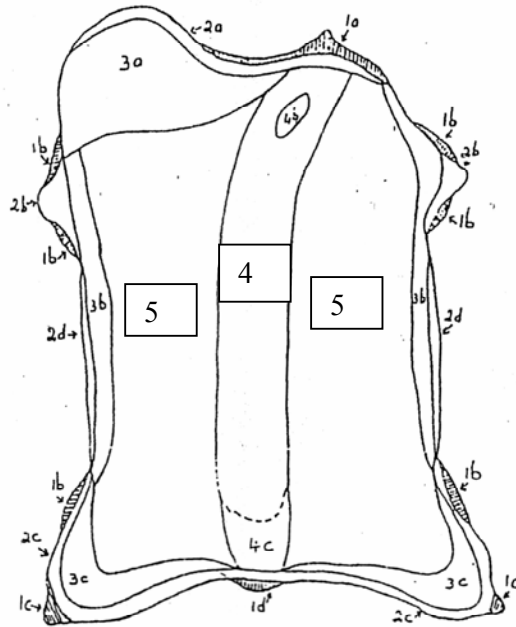
- A free marketing.
- B controlled marketing.
- C co-operative marketing.
- D governmental marketing.

8.1.6 The best quality wool in all respects can be classified as ...

- A washable wool.
- B colourable wool.
- C clean wool.
- D merino wool.

- 8.1.7 When fleece is exported it is packed in ...
- A plastic containers.
 - B bales.
 - C small containers.
 - D large containers.
- 8.1.8 Certain types of wool can be coloured more easily than others. Name the type that is coloured the easiest:
- A Logs
 - B Belly wool
 - C Fleece
 - D Leg wool
- 8.1.9 One of the following is NOT part of a business plan:
- A Indication of your knowledge of your business
 - B Definition of objectives
 - C Definition of agreements between partners
 - D Evaluation of the product line
- 8.1.10 When labourers work with shearing scissors it is important to comply with the
- A Occupational Health and Safety Act.
 - B Fencing Act.
 - C Agricultural Product Standards Act.
 - D Conservation of Agricultural Resources Act. (10 x 1) (10)
- 8.2 Veld management is important to a sheep farmer for a sustainable practice. Each farmer should study the plant growth on his farm to ascertain what the climax plant growth is.
- 8.2.1 Briefly explain the importance of a climax/stage in plant vegetation. (2)
- 8.2.2 How would you achieve the aims of optimum veld management? (3)

8.3 The diagram below represents the fleece of a merino sheep.



8.3.1 Identify the following areas marked on the above diagram:

- (a) 4
- (b) 5

(2)

8.3.2 The photograph below shows a worker shearing a sheep. Compile a list of the sequence of events that take place when shearing sheep.

(8)



- 8.4 When classifying fleece there are certain characteristics that determine the class of the wool.

Name the characteristics of wool that is used in its classification.



(4)

- 8.5 Apart from woven fabrics, name other fabrics that are made from wool.

(3)

- 8.6 Average clean wool price movements for good quality long (75 – 95 mm) merino wool spinners and good top makers styles) were as follows:

19 microns gained 25,8% to R52,61/kg
 20 microns were 22,4% higher at R49,57/kg
 21 microns rose 23,6% to R47,51/kg
 22 microns increased 18,8% at R44,79/kg
 23 microns were 21,8% dearer at R44,58/kg
 24 microns gained 21,5% at R43,64/kg
 There was no demand for 25 microns.

- 8.6.1 Draw a graph to indicate the relationship between microns (x-axis) and price (y-axis) of wool.

(3)

- 8.6.2 Give FOUR reasons why the 19 micron wool fetched the highest price.

(4)

- 8.6.3 How will this graph affect the decision on the type of sheep breed to keep on a farm in order to obtain the highest possible price for your produce?

(2)

- 8.6.4 Why do you think there was no demand for 25 micron wool?

(2)

8.7 Study the following information on wool fibre marketing and answer the questions that follow.

The BKB is the product of the merger into one organisation of a large number of wool and mohair brokers over the past 150 years.

The BKB markets more than 70% of the South African wool clip and more than 25% of the mohair production. Centralised sales of wool and mohair are offered during the sales season at scheduled auctions in Port Elizabeth.

The warehouse infrastructure includes a total of five warehouses. Two are situated in Port Elizabeth, one in Cape Town and two in Durban. These warehouses are fitted with equipment to take wool and mohair samples for objective measuring by the South African Wool Testing Bureau (SAWTB). Wool and mohair are also pressed to a high density for shipment. Sophisticated computer systems ensure a quality service to producers and buyers for the handling of wool and mohair from the point of receipt up to delivery.

By means of the FIBRE CARE clip protection programme, the BKB strives for contamination-free wool and mohair from the shearing shed to the processor.

The BKB endorses the South African National Woolgrowers Association's wool-class standards and also applies ISO 9002 standards.

8.7.1 Explain the role of the BKB in South Africa. (5)

8.7.2 Briefly explain the main aim of registration with the ISO 9002 standards. (2)

[50]

QUESTION 9: LUCERNE PRODUCTION

- 9.1 Indicate whether the following statements are TRUE or FALSE. Write only 'true' or 'false' next to the question number (9.1.1 – 9.1.10) in the ANSWER BOOK.
- 9.1.1 If the moisture content of the silage is more than 65%, chemical preservatives must be added to assist with fermentation.
- 9.1.2 Formic acid and propionic acid is not used to control fermentation of ensilaged/preserved fodder.
- 9.1.3 Labour costs is one of the physical records of a farm enterprise.
- 9.1.4 A business plan is an important document to a lucerne farmer.
- 9.1.5 Sisal bale wire is not the safest material to use in making lucerne bales.
- 9.1.6 Machinery and tractor costs make up more than 1/3 of the total cost of the hay-making process.
- 9.1.7 OHS Act stands for Occupation, Health and Self Act.
- 9.1.8 Tuberculosis (TB) will always hinder maximum production especially in the workplace where silage is made therefore infected labourers must not be discriminated against.
- 9.1.9 Lucerne harvesting is done at 50% flowering to achieve a good quality product.
- 9.1.10 Farm cash flow control plays an important role in lucerne marketing. (10 x 1) (10)
- 9.2 The main objective of a budget is to determine the capital needs of a lucerne-production unit in order to exercise control over spending. Name FOUR basic elements of a budget. (4)
- 9.3 A farmer is concerned about the profitability of lucerne. After going through his records he realises that he must be able to calculate the break-even point. The formula to calculate the break-even point (BEP) is:
- $$\text{BEP} = \frac{\text{Total fixed costs}}{\text{Price/unit} - \text{Variable costs/unit}}$$
- The following information is given:
- Market price of lucerne = R17,50/25 kg
 Variable costs = R3,50/25 kg
 Fixed costs = R2 000,00/ton
- Calculate the BEP for lucerne production using the above information. (4)

- 9.4 Quality losses may be the result of late raking. The hay is then too dry and the small leaves drop from the dried stems and remain in the field.
- 9.4.1 What is the correct stage to harvest lucerne for hay purposes? (2)
- 9.4.2 The ensiling of lucerne has many advantages over making hay. Name FOUR advantages of ensiling lucerne with reference to quality. (4)
- 9.5 Storage and preservation of ensilaged lucerne is important after harvesting to reduce the bacterial and enzyme reactions in the stored lucerne. When silage is exposed to air for too long, it loses available carbohydrates which prevent the formation of sufficient lactic acid.
- Explain the negative consequences of air in silage. (4)
- 9.6 Planning is a dynamic process which should be repeated after every change from the previous situation. The agricultural production process is therefore a dynamic process. One of the reasons for planning and re-planning is the change in the patterns of resources.
- Comment on this statement by referring to planning and re-planning. (3)
- 9.7 Seed production regions are characterised by warm, sunny summers with little or no summer rain. For marketing good quality lucerne the seeds must be of good quality. State the factors which influence successful lucerne-seed production. (3)
- 9.8 In an article, 'Economics of Lucerne', in the magazine *With Lucerne* (2004), it is indicated that the profitability of crop rotation increased the yield by 63%. The average crop gross margin decreased from R1 970/ha to R1 930/ha. This was due to the lower gross margins of the lupine crop and the lower yield of the intercropped barley.
- 9.8.1 Determine the average percentage decrease in the crop gross margin in the year 2004. (4)
- 9.8.2 Lucerne is used in a crop-rotation programme. Using the data above, determine the profitability of the farming unit. (2)
- 9.9 About 40% of the cost of manufacturing hay is linked to the cost of equipment and machinery for the hay-making process.
- 9.9.1 Name an implement that can be used to cut lucerne. State a precaution when using this implement. (2)
- 9.9.2 After cutting lucerne certain procedures have to be followed before the bales are ready to be stacked. Describe the making of lucerne bales. (4)

- 9.10 A farm worker has a problem with excessive drinking. He has become an unreliable worker. The farmer verbally warns him and after a third incidence he fires him without any further warning or consultation with his union. Can he be re-instated or dismissed by the CCMA? Support your answer.

(4)
[50]

QUESTION 10: CITRUS PRODUCTION

- 10.1 Various possible options are provided as answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (10.1.1 – 10.1.10) in the ANSWER BOOK, for example 10.1.11 A.

- 10.1.1 Citrus production requires ... years of investment before trees yield substantial amounts of fruit to start rendering income to the citrus grower.
- A 2 – 3
 - B 4 – 5
 - C 6 – 8
 - D 1 – 2
- 10.1.2 The yearly gross income of the citrus grower depends on the ...
- A price and volume.
 - B yield.
 - C price.
 - D quality of his fruit.
- 10.1.3 When a new citrus grower wants to establish a new citrus orchard he must plan for ... before he can start.
- A cultivar and rootstock choice, tree density and orchard layout
 - B site preparation and orchard layout
 - C cultivar choice
 - D enough capital
- 10.1.4 The best soil pH for citrus is ...
- A < 4,5.
 - B 4,5 – 6,5.
 - C 6,5 – 7,5.
 - D > 7,5.

- 10.1.5 An example of an item included in the production record of a citrus farm is Which ONE does NOT fit?
- A insects.
 - B diesel costs.
 - C number of labourers.
 - D yield.
- 10.1.6 When fruit samples are taken it should represent a uniform block of the same ...
- A orchard.
 - B cultivar and rootstock.
 - C age, cultivar and rootstock.
 - D rootstock and age.
- 10.1.7 The reason for waxing citrus fruit is to ...
- A let it ripen.
 - B improve the quality.
 - C keep insects away.
 - D delay the loss in juiciness.
- 10.1.8 The minimum size for export oranges is ...
- A 53 mm.
 - B 65 mm.
 - C 25 mm.
 - D 60 mm.
- 10.1.9 Citrus trees reach peak production after ... years.
- A 3
 - B 10
 - C 10 – 20
 - D 5
- 10.1.10 The price of citrus depends on the ...
- A export market and quality of fruit.
 - B cultivar.
 - C cultivar, type of market and the export market.
 - D type of market. (10 x 1) (10)
- 10.2 World-wide there are five major groups of citrus. Name these FIVE groups. (5)
- 10.3 By making fruit juice the citrus farmer will add value to citrus. Regulation 286 of 1980, clause 13.2, stipulates certain requirements regarding fresh citrus juice. Name these requirements. (5)

- 10.4 Read the following article on intelligent spraying equipment and answer the questions that follow.



Intelligent spraying equipment can now use GPS to detect and locate different soil conditions in large fields, and is a by-product of the guidance and probing systems developed for the space programme. Now look at sonar and laser technology being applied to sprayers to detect the targets and direct the spray specifically at the plants and trees that have to be treated, rather than just blowing a continuous cloud of spray into the air: it comes from military targeting systems developed over the years and fully proven in the recent Gulf War.

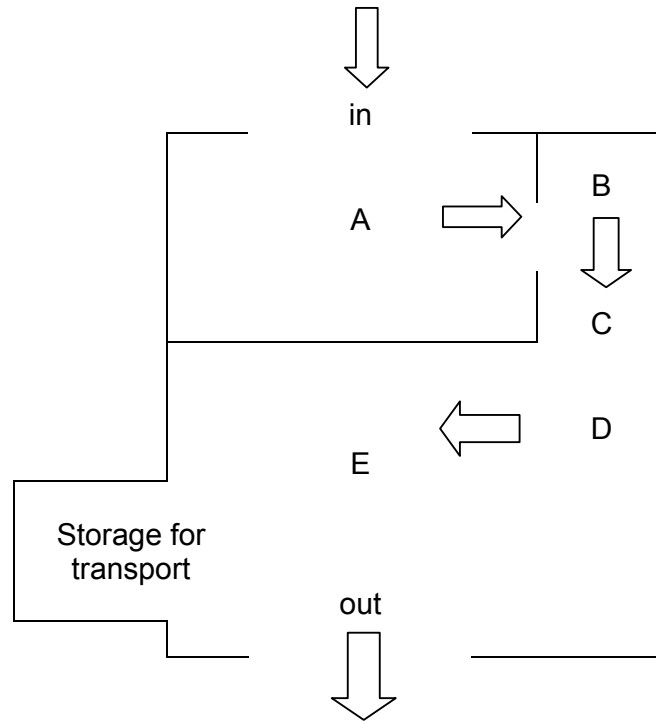
Yes, there are sprayers on the market and presently in use by progressive growers that actually look at the plant and turn on the nozzles according to the shape and position of that plant. They are even so smart that you can program them to open a little before and close a little later to compensate for wind conditions! Get used to names like Smart-Spray, Tree-See and Tree-Sense. They are all presently available and can be even retro-fitted to most of the existing air-blast machines.

- 10.4.1 Name any THREE advantages of these types of spraying equipment. (3)
- 10.4.2 What does *GPS* mean? (2)
- 10.4.3 Name the type of farming which can utilise GPS fully. (1)


10.5 The diagram below represents a packing line on a citrus farm. Redraw the diagram in your answer book and complete the labels marked A – E by using the following words:

- Sorting
- Washing
- Degreening room
- Packing and loading
- Waxing/Drying

(5)



10.6 The following data represents some features of the air blast sprayer.

	
<p>MAIN FEATURES OF AIR BLAST SPRAYER</p>	
<p>Tank capacity:</p>	<p>2 000 litres</p>
<p>Pump capacity (flow rate) (pressure):</p>	<p>300 litres/minute and pressure 35 kg/cm² (35 bar)</p>
<p>Nozzles (number, flow rate and pressure):</p>	<p>44 and 0,40 litres/minute and 3 bar</p>
<p>Fan air speed:</p>	<p>850 (km/h)</p>
<p>Fan air volume:</p>	<p>1 032 (m³/minute) or almost 62 000 m³/hour</p>
<p>Power output:</p>	<p>50,5 HP</p>

10.6.1 This sprayer is used to apply spray to trees which are 4 metres high, 3,5 metres wide and spaced 6 x 3 metres from each other. How many trees can it serve during a minute? (3)

10.6.2 How many times will you need to fill the air blast sprayer if you have to spray 5 hectares with 555 trees/ha? You want to apply the spray at a rate of 15 ℓ/tree. (3)

10.7 Planning is a dynamic process which makes provision for adaptation due to changing conditions. Agricultural production is therefore a dynamic process. Explain the reasons for re-planning on a citrus farm. (8)

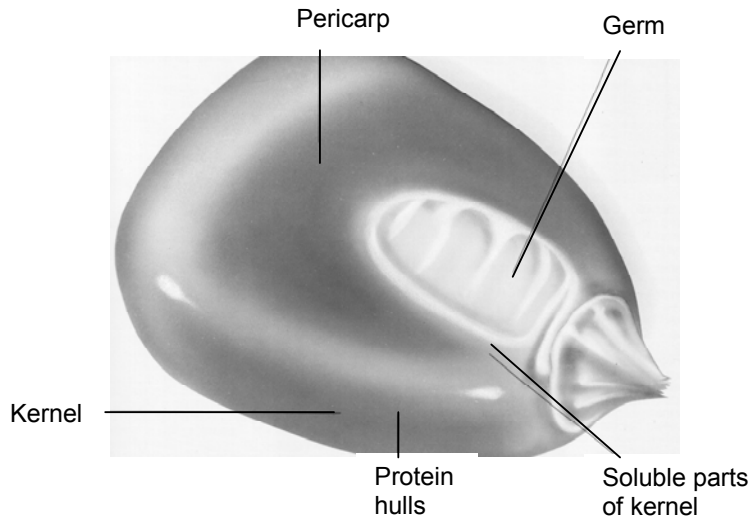
10.8 During the harvesting of citrus fruit the crew foreman has to supervise the harvesting process. Name THREE duties the crew foreman has to perform during harvesting. (3)

10.9 The quality of SA citrus export is controlled by a quality control board. Give the name of this quality control board. (2)
[50]

QUESTION 11: MAIZE PRODUCTION

- 11.1 Give ONE word for each of the following items. Write only the word next to the question number (11.1.1 – 11.1.10) in your ANSWER BOOK, for example 11.1.11 Management.
- 11.1.1 The name of the process used to classify soils and determine its production potential.
- 11.1.2 Give the name of the strip on your field that is higher than the rest of the cultivated part, covered with grass and which contributes to the prevention of soil erosion.
- 11.1.3 The process in management that uses a clock card to determine the labourers' time on duty.
- 11.1.4 The type of data used to determine the profit or loss of an agri-business.
- 11.1.5 The season of the year in which dry maize is harvested.
- 11.1.6 The main qualities of maize that can be corrected by the use of a dryer.
- 11.1.7 The unit used for the price of maize.
- 11.1.8 The value-adding process that will produce maize grits and maize meal.
- 11.1.9 The plan used to obtain a loan from a commercial bank to set up a milling plant on the farm.
- 11.1.10 The use of these chemicals to control pests can cause allergies to humans and pollute fresh standing water on a farm. (10 x 1) (10)
- 11.2 Briefly explain the wet milling method according to the following headings:
- 11.2.1 Briefly explain the meaning of the term *wet milling process*. (3)
- 11.2.2 Name the THREE main results obtained from the wet milling process. (3)

- 11.3 Study the drawing of the maize kernel below and answer the questions that follow.



- 11.3.1 From which nutrient component of the kernel is dextrose produced? (1)
- 11.3.2 Name TWO products that are made from the germ oil. (2)
- 11.3.3 Name the main use of the soluble parts of the kernel. (1)
- 11.3.4 Maize gluten meal is a product of the protein hulls of the maize kernel. Name the purpose for which maize gluten meal is used. (2)
- 11.4 Bt is not a cultivar. The Bt gene is transferred to existing and new maize cultivars. In future more and more cultivars with such genes will become available. Monsanto already produces Roundup-resistant seed commercially which offers environmental and management benefits to maize growers.
- 11.4.1 Explain how the use of these seeds can benefit management processes on a maize farm. (5)
- 11.4.2 The use of this seed has some advantages for the environment. Name some of these advantages. (5)

- 11.5 The following table represents expenses, fixed cost and variable cost in a maize production enterprise.

COST ITEMS	FIXED COST	VARIABLE COST ON A BAG OF MAIZE (100 kg) THAT IS SELLING AT R100
Salary	R71 500	0,35
Taxes and licenses	R5 000	
Insurance	R6 000	
Depreciation	R20 000	
Rent and leases	R7 000	
Advertising	R5 000	
Office expenses	R2 000	
Utilities	R3 000	
Maintenance and repair	R8 500	0,85
Supplies		0,40
Other	R2 000	0,40
Interest expense	R15 000	
Cost of goods sold		75,00
TOTAL	R145 000	77,00

11.5.1 Explain the difference between fixed cost and variable cost. (4)

11.5.2 Calculate the break-even point (BEP) if a unit sells for R100. Make use of the following formulas:

Cash turnover = selling price – variable costs.

Break-even point = $\frac{\text{fixed costs}}{\text{cash turnover}}$ (4)

- 11.6 John plans to plant maize in the next season. He therefore keeps record of the marketing of maize on the Johannesburg Stock Exchange. The following table was set up to assist him in his decision.

PRICE/TON	QUANTITY OF MAIZE PRODUCED IN MILLION TONS (SUPPLY)	SALES IN MILLION TONS (DEMAND)
500	5	10
700	6	9,5
900	7	9
1100	8	8
1300	9	6,5

- 11.6.1 Plot the supply and demand graphs for maize. (4)
- 11.6.2 Determine the ideal point where the supply of maize to the market will meet the demand for maize in the market. Explain why this is called the ideal point. (3)
- 11.6.3 What is the ideal point referred to in QUESTION 11.6.2 called? (1)
- 11.7 A business plan will assist a maize farmer in achieving set goals.
Motivate the use of a business plan by referring to reasons why it is used. (2)
- [50]**

QUESTION 12: WHEAT PRODUCTION

- 12.1 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A – L) next to the question number (12.1.1 – 12.1.10) in your ANSWER BOOK, for example 12.1.11 D. An item in COLUMN B can only be used ONCE.

COLUMN A		COLUMN B	
12.1.1	A process used to choose between alternatives for the purpose of achieving a desired result	A	diversification
		B	consumer legislation
12.1.2	It is a way to reach a vast group of potential customers through the communication media	C	gluten
		D	supply
12.1.3	The marketing instruments used to reduce risk	E	cash flow
		F	demand
12.1.4	Legal documents used by the department of agriculture to protect consumers	G	advertisement
		H	sickle
12.1.5	The type of wheat flour protein that acts like bubble gum when chewed	I	scythe
12.1.6	An estimate of all cash income and expenses as they occur	J	indigenous knowledge
		K	decision making
12.1.7	The quantity of wheat offered at the market at a given moment at a given price	L	labour
12.1.8	In the past wheat was cut by hand using this tool		
12.1.9	These costs are the highest costs in any enterprise		
12.1.10	Knowledge typical of a specific region or country		

(10 x 1)

(10)

12.2 An emerging farmer wants to start a wheat production unit. Using the information given below, draw up a business plan that this farmer can use. Choose the correct heading for the categories indicated below:

Nature of business	Management	Customer profile
Assumptions	Price risk	Audited income statement for the last three years
Definitions and notes	Production risk/Output risk	Facility plans
Vision	Financial risk	Employment
Mission	Market segment	Personnel plan
Employment	Growth potential	Administrative plan

A Business Plan contains:

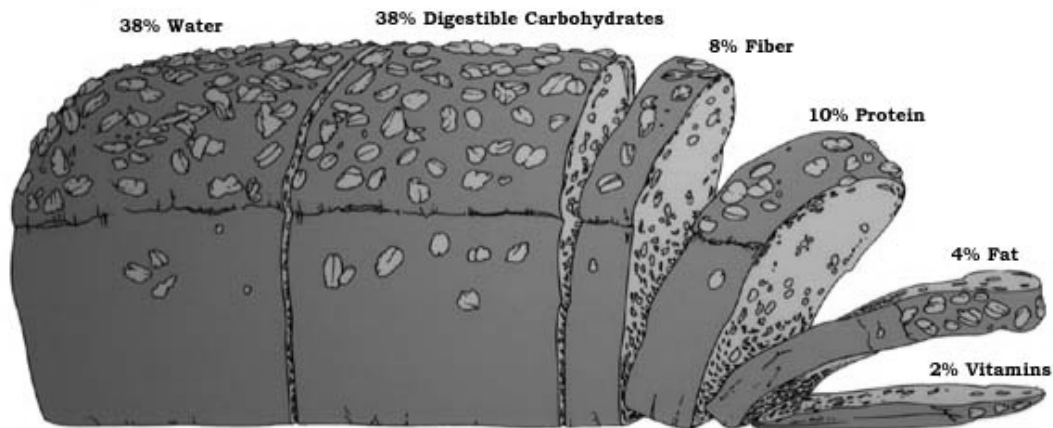
- A Business Description
- B Market Research and Assumptions
- C Operational Plan
- D Risk Analysis
- E Financial Plans

Redraw the table and fill in the correct terms from the list above.

1	BUSINESS DESCRIPTION
12.2.1	
2	MARKET RESEARCH AND ASSUMPTIONS
12.2.2	
3	OPERATIONAL PLAN
12.2.3	
4	RISK ANALYSIS
12.2.4	
5	FINANCIAL PLANS
12.2.5	

(5)

12.3 The following is an illustration of the nutritional value of whole-wheat bread:



The Nutritional Value of 100% Whole Wheat Bread

Bread prices continued to rise in 2005. White sliced (700 g) bread increased by 4,55%, while brown sliced bread (700 g) increased by 2,04% for the period January 2005 to April 2005. Flour prices in the same period decreased by 1,18%.

12.3.1 Why is whole-wheat bread important in the human diet? (2)

12.3.2 White sliced bread cost R4,50 before the above increase. What will this bread cost after the price increase? (2)

12.3.3 Calculate the percentage increase in the profit of the bakery because of this increase in white bread prices. (2)

12.4 The following photograph shows a machine used in wheat production.



- 12.4.1 Identify the machinery in the picture above. (1)
- 12.4.2 Briefly explain the operation of this machine in wheat harvesting. (3)
- 12.4.3 Depreciation can be defined as a loss in value of an asset such as machinery. A farmer wants to keep his/her financial records up to date. Use the information below (a straight-line method) to calculate the annual depreciation of the machine shown.
Formula to calculate depreciation (D):

$$D = \frac{CP - S}{L}$$

A farmer bought a combine harvester at a cost price (CP) of R1 000 000. The estimated salvage value (S) is R100 000 and an estimated useful life (L) is given as 10 years. (4)

- 12.5 Milling of wheat is the process of grinding the wheat into flour or semolina (which comes from the processing of durum) which is amber in colour. Wheat processing involves milling and other processes at the mill. Explain how the wheat is processed from raw wheat up to the end-product (flour). (5)
- 12.6 Biotechnology is important to maximise profit. Impact analysis is necessary to get all stakeholders involved. List the different parties involved when a Genetically Modified Organism (GMOs) used for food production is introduced into the market. (4)
- 12.7 Agricultural cooperatives have changed to become a unique part of the South African free enterprise system. Most are organised as business cooperatives with the sole purpose of serving the needs of their user members rather than making a profit. What are the basic functions of cooperatives as an agricultural organisation in modern farming? (5)
- 12.8 The following extract refers to the impact of human diseases on business enterprises.

HIV/Aids statistics are still staggering at 3,1 million deaths worldwide (2005), 5 million infections in 2005 and 40 million living with HIV/Aids. Two-thirds of those affected are living in Sub-Saharan Africa.

In addition to obvious issues of workplace productivity and morale, some people assume that business is not doing enough to curb this pandemic disease. Many firms are weighing the question of internal programme development and implementation versus reliance on public health programmes of their host countries.

[Extracted from a report: *A Closer Look at Business Education: HIV/Aids* based on research programmes of Aspen Institute, December 2006]

Name THREE restraints that HIV/Aids have on a business. (3)

- 12.9 Cash flow budgets can be prepared on a short-, medium- or long-term basis. What is the importance of a cash flow budget? (4)
[50]

QUESTION 13: SUNFLOWER PRODUCTION

- 13.1 Indicate whether the following statements are TRUE or FALSE. Write only 'true' or 'false' next to the question number (13.1.1 – 13.1.10) in the ANSWER BOOK.
- 13.1.1 For many firms, HIV/Aids in the business realm is slowly changing from a philanthropic issue to one of risk management.
- 13.1.2 Pre-harvest losses are not estimated by making counts of seeds on the ground.
- 13.1.3 To prevent rancidity in stored oils the producer must use clean dry containers for packaging.
- 13.1.4 Sunflower seeds with a high oil content are striped.
- 13.1.5 Never produce sunflowers without assessing and assuring its market demand for that year.
- 13.1.6 Use improved post-harvest technology and processing techniques to avoid post-harvest losses.
- 13.1.7 One of the products made from sunflower oil is butter.
- 13.1.8 Delegating is not the cascading of authority down the hierarchy.
- 13.1.9 Gross margin is the profit of a farming enterprise.
- 13.1.10 Vaccination is a variable cost. (10 x 1) (10)
- 13.2 For the farmer it is always a concern to choose between several factors/considerations in a feasibility study in order to maximise profit. Explain each of the following factors briefly:
- 13.2.1 Technical factors (1)
- 13.2.2 Commercial factors (2)
- 13.2.3 Financial considerations (1)
- 13.2.4 Organisational and management considerations (1)
- 13.2.5 Social and environmental considerations (2)

- 13.3 Marketing legislation is essential for the effective functioning of marketing systems. What is the role of economic regulations in the marketing of sunflowers? (3)
- 13.4 A budget is an important component in any enterprise. What is the importance of a budget in sunflower production? How is the expected profit determined from the budget plan (4)
- 13.5 Sunflower oil and margarine are important products for domestic use. The graphs below represent the price of cooking oil compared to that of margarine.

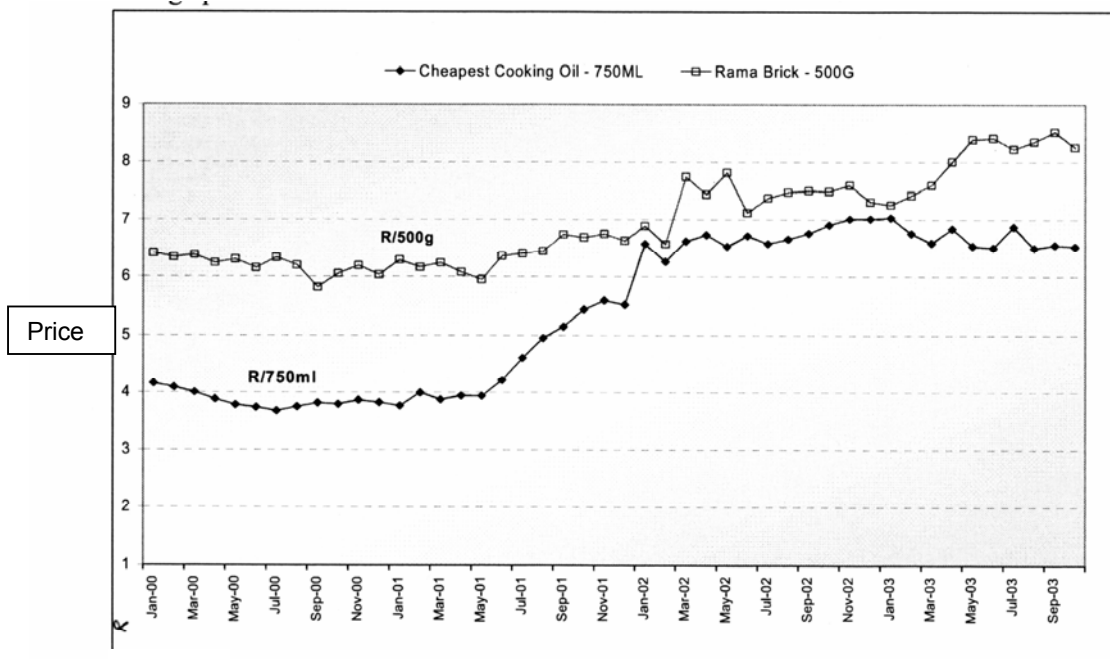


Figure 3.6: National average prices for 750 ml cooking oil and 500g margarine brick: Jan 2000 to Oct 2003

- 13.5.1 What was the price increase of 750 ml cooking oil between March 2000 to Jan 2003? (2)
- 13.5.2 Name TWO months in which the price of cooking oil was the same as the price of margarine. (2)
- 13.5.3 In which period was the price of margarine stable between R6 – R7 per 500 g brick? (2)

13.6

Agri-tourism is a selective form of tourism. It takes place on the farm and represents a specific form of business. Agri-tourism impacts on the socio-economic situation in rural areas. According to Huylenbroeck et. al. (2006) the link between agriculture and tourism is twofold. On the one hand farming and farming activities may contribute to the attractiveness of rural areas. Therefore it influences the demand for rural tourism in a certain area. On the other hand, farmers may also profit by increasing rural tourism through farm diversification. This occurs either directly by providing accommodation to tourists or indirectly through the higher demands for farm or regional food products. In these ways rural tourism may contribute to diversification and strengthening of the income base of farm activities in rural areas.

[Extract from the *Proceedings from the first International Conference on Agriculture and Rural Development*, Topusko, Croatia, 23 - 25 November 2006]

13.6.1 With reference to the text above, explain briefly what you understand by the term *Agri-tourism*. (2)

13.6.2 Indicate any THREE advantages or benefits of agri-tourism for rural farms or areas. (3)

13.7 Budgeting is an important component in agri-business.

List THREE forms of fixed costs that may be included in a budget. (3)

13.8 Record keeping is one of the prerequisites of sunflower production. Study the table given below and answer the questions that follow.

ASSETS		LIABILITIES	
Current assets	<u>95 000</u>	Current liabilities	<u>33 600</u>
Medium-term assets	<u>58 500</u>	Medium-term liabilities	<u>15 000</u>
Long-term assets	<u>338 000</u>	Long-term liabilities	<u>48 500</u>
Total assets	<u>187 300</u>	Total debt	<u>97 100</u>
		Net worth	<u>13.8.2.9</u>
		Total liabilities	<u>13.8.10</u>

13.8.1 Identify the type of financial statement above. What is the main purpose of this type of financial statement? (2)

13.8.2 What is the meaning of the term *net value*? (2)

13.8.3 Calculate the net value from the data in the table above. (2)

13.8.4 Distinguish between medium-term assets and short-term assets and give an example of each. (6)

[50]

QUESTION 14: VEGETABLE PRODUCTION

14.1 Various possible options are provided as answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (14.1.1 – 14.1.10) in the ANSWER BOOK, for example 14.1.11 B

- 14.1.1 During farm planning for vegetable growing it is important to ...
- A use waste water as irrigation water.
 - B increase the organic content of the soils.
 - C change the crumbly structure to a structureless one.
 - D reduce the water capacity of soils.
- 14.1.2 Which one of the following is NOT important in precision farming?
- A Record keeping of temperature changes
 - B Optimal calibration of the sprayer
 - C Fertilising plants without soil analysis
 - D Use of drip irrigation instead of flood irrigation
- 14.1.3 One of the highest costs in a vegetable budget is ...
- A seed.
 - B water.
 - C fuel.
 - D labour.
- 14.1.4 Labourers employed to harvest the crop is an example of ...
- A permanent labourers.
 - B seasonal labourers.
 - C occasional labourers.
 - D daily labourers.
- 14.1.5 Which one of the following is NOT TRUE of a farmer spraying vegetables with pesticides?
- A Keep record of the active ingredient of the pesticide
 - B Keep record of the amount of spray used
 - C Keep record of the date of spraying
 - D Keep record of the tractor used for spraying
- 14.1.6 Vegetables at an agricultural market are sold on ...
- A the basis of supply and demand.
 - B a contract base.
 - C agreement with the minister of agriculture.
 - D agreement with the market manager.

- 14.1.7 When vegetables are selected for processing it must be ...
- A of lower quality.
 - B infested with insects.
 - C clean and healthy.
 - D contaminated with organic material.
- 14.1.8 Before one can sell carrots it must be ...
- A marked.
 - B classified.
 - C washed.
 - D packed.
- 14.1.9 The biggest processing market for vegetables is ...
- A fresh produce.
 - B frozen vegetables.
 - C canned vegetables.
 - D exported vegetables.
- 14.1.10 Which one of the following is the biggest contributor to the entrepreneurial market of vegetables?
- A Agricultural markets
 - B Hawkers
 - C Chain stores
 - D Processing enterprises
- (10 x 1) (10)
- 14.2 Nkubani bought 2 ha of land and decided to grow vegetables on the land. The land can be divided into ½ ha clay soils, 1 ha loam soils and ½ ha sandy soils. Assist him in the planning of the soils to cultivate vegetables. (5)
- 14.3 The control of the cost of mechanisation on a farm is part of the management aspect of a farming enterprise. (5)
- Which factors will have an influence on the cost of owning and using farm equipment?
- 14.4 Blanching is very important in vegetable processing.
- 14.4.1 Why must vegetables be blanched? (3)
- 14.4.2 Briefly describe the process of blanching. (8)

14.5 Explain the important aspects in the storing of the following vegetables:

14.5.1 Green vegetables (1)

14.5.2 Tubers and bulbs (1)

14.5.3 Ripe tomatoes (1)

14.5.4 Dried vegetables (1)

14.6 Managing an entrepreneurship like a vegetable farm is one of the most important aspects for success. (5)

Define the term *management*.

14.7 Study the following table on carrot production and answer the questions that follow:

	MARCH	APRIL	MAY	JUNE	JULY	AUGUST
Plant	4 g seed	8 g seed	5,3 g seed	6,6 g seed		8 g seed
Harvest			Harvest Feb. planting	Harvest Mar. planting	Harvest ½ of Apr. planting	Harvest ½ of Apr. planting

14.7.1 Which type of record keeping is reflected in the above table? (1)

14.7.2 Explain why there is no planting done during July. (1)

14.7.3 Give a reason why there are no carrots to harvest during March and April. (2)

14.8 A farmer wants to buy an extra tractor, instead of hiring a contractor to do the work. The following table is a partial budget to determine the viability of this decision.

COSTS PER ANNUM FOR BUYING	VALUE	COSTS PER ANNUM FOR CONTRACTOR	VALUE
Depreciation	7 000	52 weeks x 1 day x 500	26 000
Interest	7 275	10 x 1000	10 000
Insurance	1 000		
Subtotal	15 275	Subtotal	36 000
Diesel and maintenance	10 000		
Tractor operator	10 000		
Total		Total	

- 14.8.1 Calculate the total cost of each of the following:
- (a) Hiring a contractor
 - (b) Buying a tractor
- (2)
- 14.8.2 What is the difference in savings, as a percentage, made by buying a tractor instead of using a contractor? (2)
- 14.8.3 Will it be cost effective to buy a tractor? Justify your answer. (2)
- [50]**

QUESTION 15: PEACH PRODUCTION

- 15.1 Various possible options are provided as answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (15.1.1 – 15.1.10) in the ANSWER BOOK, for example 15.1.11 B.
- 15.1.1 What is the minimum number of peach halves that must be included in a tin container of 400 – 500 ml?
- A 3
 - B 5
 - C 7
 - D 10
- 15.1.2 What is the minimum length of sliced peaches if it is marketed as choice grade?
- A 45 mm
 - B 40 mm
 - C 35 mm
 - D 25 mm
- 15.1.3 The best time for a farmer to do repairs on his spraying equipment is during the ...
- A peak harvesting season.
 - B spring when trees are in full blossom.
 - C winter when the work volume on the farm is low.
 - D summer when the peach trees are in peak growing season.
- 15.1.4 Depreciation can be defined as ...
- A wear and tear.
 - B being out of fashion (obsolete).
 - C deterioration.
 - D All the above-mentioned

- 15.1.5 Peaches are mechanically brushed after being picked to ...
- A remove pesticide residue.
 - B remove any pests on the peaches.
 - C remove the fuzz on the surface.
 - D increase the sugar content of the peaches.
- 15.1.6 The best time to harvest peaches for the export market is in the...
- A mature-hard stage.
 - B mature-soft stage.
 - C immature-hard stage.
 - D immature-soft stage.
- 15.1.7 When selecting canned peaches it is more healthy to find peaches with a label that states ...
- A 'Packed in artificial juice.'
 - B 'Packed in its own juice with added sugar.'
 - C 'Packed in its own juice and no sugar added.'
 - D 'Packed in artificial juice and no sugar added.'
- 15.1.8 Which clingstone peaches will be used to make sweet spreads?
- A Slightly unripe peaches
 - B Firm ripe peaches
 - C Fully ripe peaches
 - D Very ripe peaches
- 15.1.9 The cash flow of an enterprise can easily be obtained from the ...
- A income statement.
 - B daily balance sheet.
 - C budget sheet.
 - D yearly balance sheet.
- 15.1.10 Which ONE of the following is an example of an external factor in a business plan?
- A Donors
 - B New IT system
 - C Development of a new product
 - D Refurbishing a factory
- (10 x 1) (10)
- 15.2 Answer the following questions on the ripening of peaches.
- 15.2.1 When does ripening occur? (1)
- 15.2.2 How is it possible to slow down the ripening process? (2)

15.2.3 How long can peaches be stored at the conditions mentioned in QUESTION 15.2.2? (1)

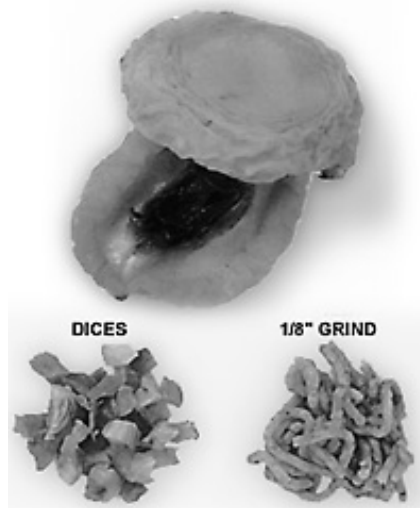
15.3 In the photograph below a worker is harvesting peaches by hand. Explain how a farmer will know when the peaches are ready to harvest.



(7)

15.4 Explain the process of packaging peaches. (7)

15.5 Dried peaches are one of the easiest ways to process peaches and to add value to it.



15.5.1 Name any TWO characteristics that make peaches suitable for drying purposes. (2)

15.5.2 When peaches are dried they must undergo certain processes. Name these processes. (3)

15.5.3 Indicate any FOUR physical characteristics of peaches that are marketed as dried peaches. (4)

15.6 Precision farming may be used to improve field and farm management from several perspectives. Name these perspectives. (4)

15.7 A labourer is not doing her work and therefore disciplinary action has to be taken against her. Name the important aspects when taking disciplinary action. (5)

15.8 The following is an extract of a budget for the production of mature peaches based on a period of one year for 141 trees on $\frac{1}{2}$ hectare of land.

ITEMS	COSTS
Variable costs	10 739,47
Fixed costs	1 205,05
TOTAL SPECIFIC COSTS	11 944,52

15.8.1 Name TWO of the initial resource requirements to set up this budget. (2)

15.8.2 This farmer receives R20/box for his peaches. How many boxes must he sell just to break even according to this table? (2)

[50]

QUESTION 16: HYDROPONICS

- 16.1 Choose an item from COLUMN B that matches the description in COLUMN A. Write only the letter (A – R) next to the question number (16.1.1 – 16.1.10) in the ANSWER BOOK, for example 16.1.11 D. An answer from COLUMN B can only be used ONCE.

COLUMN A		COLUMN B
16.1.1	Motivation of labourers	A good quality
16.1.2	A basic management task which is essential to the decision-making process	B 7,5
		C big
		D 16
16.1.3	The number of fresh produce markets in South Africa.	E incentives
		F 22
16.1.4	The % levy which is payable to market agents	G planning
		H co-ordination
16.1.5	Fresh produce markets require this type of produce.	I interest rates
		J litres of pesticide used
16.1.6	Financial data	K packing of produce by the farmer
16.1.7	Production record	L yield
16.1.8	Natural resource	M water
16.1.9	An example of value adding to produce	N labour
16.1.10	The obligation of every employer who employs more than 20 people	O to produce good produce.
		P Act on regulations on the premises
		Q Act 85 of 1992
		R food

10 x 1 (10)

- 16.2 Marketing of vegetables produced in hydroponics units requires regular and careful consideration by the grower. The markets are becoming increasingly competitive as more and more producers change from open field production to environmentally controlled production. Planning is the first step to successful marketing and should be completed in detail before planting your crop.

Support this statement by naming FIVE markets to which a farmer can sell his/her produce.

(5)

- 16.3 Produce should under no circumstances be handled roughly, as it is very susceptible to bruising and can be damaged. Verify this statement by compiling a list of ways how bruising can be minimised.

(5)

- 16.4 The emerging hydroponics farmer wants to buy a knapsack sprayer to control insects. Give this farmer some guidelines on the criteria to be considered when buying the correct knapsack sprayer.

(6)

- 16.5 The following table is an indication of costs of hydroponics in the first year.

DESCRIPTION	COSTS
Construction of greenhouse.	R106 870,00
Planting and trellising equipment	R94 127,00
Irrigation equipment	R44 125,00
Running costs for a season	R255 275,00
Total costs	R500 379,00

- 16.5.1 A farmer markets 29 231 boxes of tomatoes at an average price of R11/box over a period of seven months. Will the first year be profitable? Show ALL calculations.

(3)

- 16.5.2 How many years will it take this farmer to show a profit, if erection costs are also included? Substantiate your answer with the necessary calculations.

(3)

- 16.6 The following are basic elements of a budget. Rewrite the list and give ONE example of each item included in this budget of a hydroponics farmer, for example, Inputs – labour:

Resources

External factors

Parameterisation

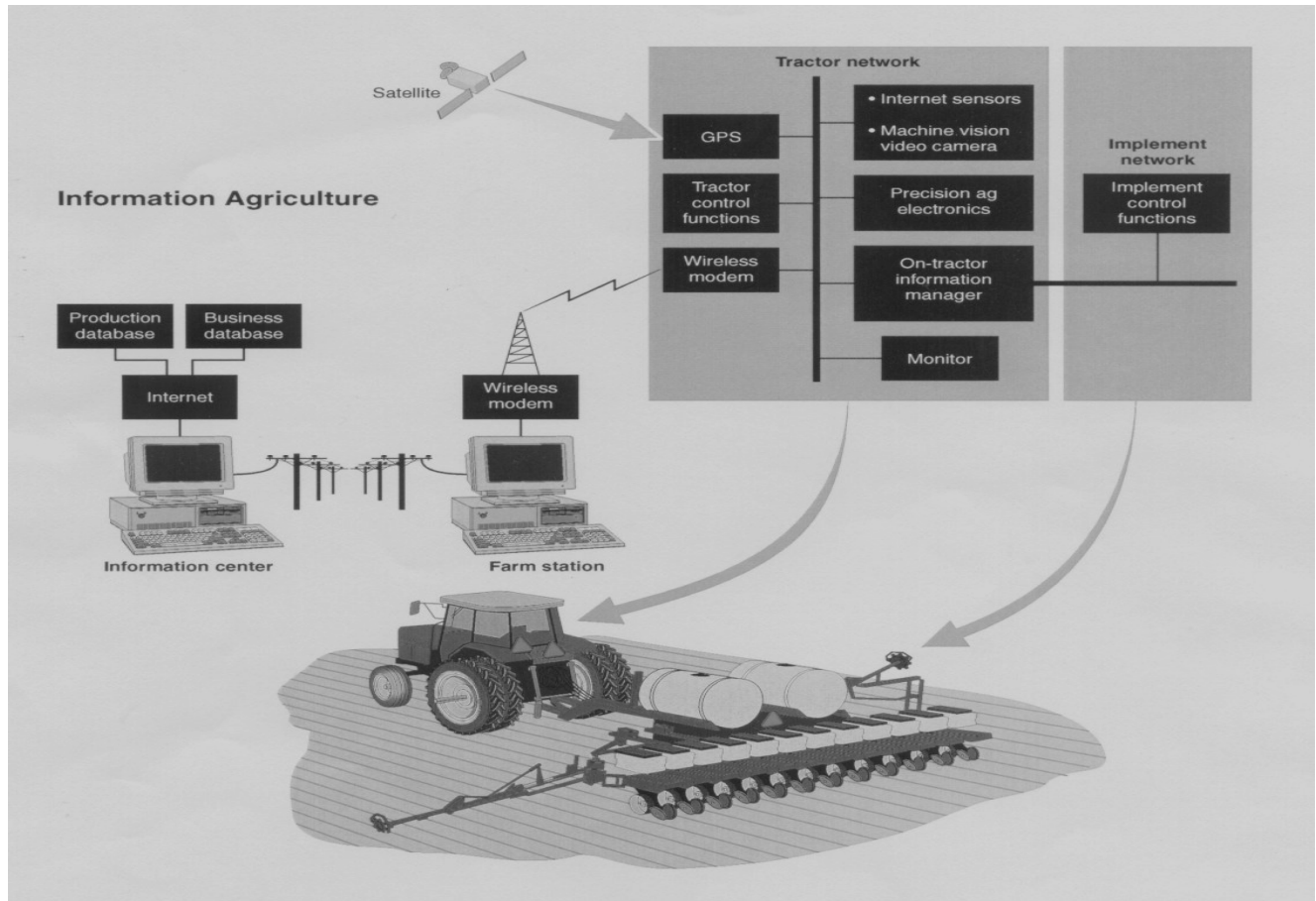
Budget horizon

Inputs

Prices

(6)

16.7 Study the diagram and answer the questions on precision farming.



- 16.7.1 Explain the term *precision farming*. (2)
- 16.7.2 Identify TWO technological components in the process. (2)
- 16.7.3 State any THREE advantages of precision farming. (3)

16.8 Name the FIVE management tasks of a farmer. (5)
[50]

QUESTION 17: VINICULTURE

- 17.1 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A – W) next to the question number (17.1.1 – 17.1.10) in the ANSWER BOOK, for example 17.1 11 D. An answer from COLUMN B can only be used ONCE.

COLUMN A		COLUMN B
17.1.1	The conversion of in grape sugar to alcohol	A GPS
17.1.2	A unit used to measure the sugar content of grape juice	B balance sheet
17.1.3	Fertile alluvial soil found in warmer river valleys	C spring
17.1.4	The season in which the nodes on the shoots begin to swell and bud	D grape juice
17.1.5	Value adding	E pH
17.1.6	Management task	F fermentation
17.1.7	Inputs in grape production	G shale
17.1.8	A farmer borrows R50 000 from the bank and the total interest is determined to be R4 000. Calculate the interest rate.	H granite
17.1.9	An accounting statement that shows the financial make-up and condition of a business at a specific time includes the list of what the business owns, what it owes, and what the owner has invested in the business	I 20
17.1.10	This aspect is critical to precision farming	J co-ordination
		K organising
		L 8
		M fertilizer
		N sales
		O GPRS
		P winter
		Q alcohol
		R income statement
		S pH
		T carbonated
		U 12
		V autumn
		W management

17.2 The picture below is that of a label for a wine bottle. Certain regulation criteria are set for these labels. Indicate the correct descriptions for the labels indicated by 17.2.1 – 17.2.4.

(4)

Information printed on the label

17.2.1 points to the brand name 'Nederburg'.

17.2.2 points to the vintage year '1996'.

17.2.3 points to the grape variety 'Paarl Cabernet Sauvignon'.

17.2.4 points to the text 'WINE OF ORIGIN PAARL'.

Origin points to the text 'WINE OF ORIGIN PAARL'.

Volume points to the text '0,75L'.

Name and Address points to the text 'NEDERBURG WINE CO. (PTY) LTD., NEDERBURG, PAARL'.

Country of Origin (not compulsory for the local market) points to the text 'PRODUCED AND BOTTLED IN THE REPUBLIC OF SOUTH AFRICA'.

17.3 Some of the wine routes in South Africa are indicated below.



- 17.3.1 What is the term used for people visiting agri-businesses? (1)
- 17.3.2 State any FOUR advantages of having the people mentioned in QUESTION 17.3.1 on your farm. (4)
- 17.4 Read the following case study on organic farming at Bon Cap Organic Winery and answer the questions that follow.
- Bon Cap Organics blazed a trail of glory for organic wines with their maiden 2002 vintage wines. A run of awards has placed this exiting new producer on the map as a proud ambassador for South African organic wines.

After a history of delivering their precious grapes to a co-operative system, Roelf was reluctant to continue to throw his top quality, organically cultivated grapes into the voluminous generic wines churned out by the co-operative producers. Considerable investment was channelled into a winery, and once the farm received organic certification, the maiden vintage of the estate's own label wines was introduced.

Organic farming is completely natural to Roelf. The farm has been cultivated according to organic principles for generations. Says he: 'It's quite simple. What you take out, you have to put back in.' He advises farmers interested in converting to organic farming, to start by throwing away their spray equipment. When he started organic farming, not only could he not get textbooks for guidance on how to farm organically, but it was also impossible to find organic sprays for the vines.
- 17.4.1 Describe the meaning of the term *organic wine farming*. (2)
- 17.4.2 How can a farmer get official approval for being an organic farming enterprise? (1)
- 17.4.3 Briefly describe the pest control practices applied by an organic farmer. (1)
- 17.4.4 In the study Roelf mentioned that 'what you take out you have to put back'. What does he mean by this statement? Give ONE example of organic farming practices. (2)
- 17.5 Compile a list of FIVE viticultural practices labourers should perform on the farm. (5)
- 17.6 It has become common to speak of 'physiological ripeness' as a critical point to harvest grapes. Name TWO methods the farmer can use to determine the physiological ripeness of his/her grapes. (2)
- 17.7 Management involves the making of decisions. The manager is obliged to make the decisions regarding the acquisition, application and managing of the production factors.
Support this statement by compiling a list of SEVEN steps when making decisions. (7)

17.8 Use the following information to draw up a balance sheet for Boschkop.

Current assets	
Cash	R24 000
Accounts receivable	R57 000
Inventory	R287 000
Fixed assets	R870 000
Current liabilities	
Accounts payable	R134 000
Notes payable	R87 000
Long-term liabilities	R115 000

(5)

17.9 Pruning in vineyards is an essential routine task. Name any THREE principles or aims of the pruning process. (3)

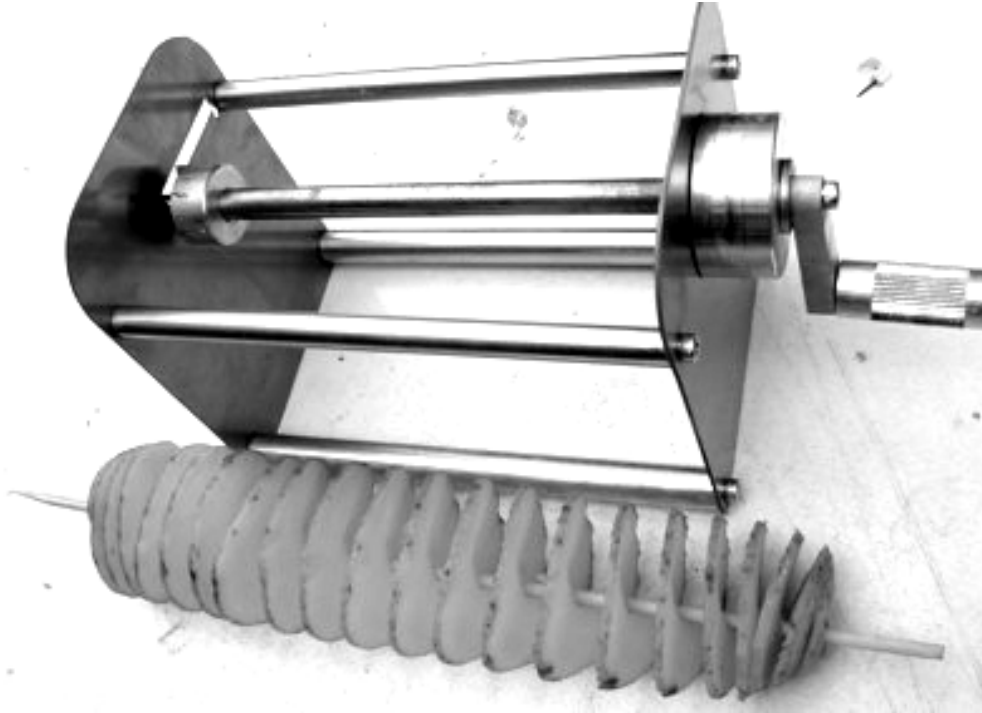
17.10 Name any THREE soil characteristics necessary for optimal growth of vineyards. (3)

[50]

QUESTION 18: POTATO PRODUCTION

- 18.1 Indicate whether the following statements are TRUE or FALSE. Write only 'true' or 'false' next to the question number (18.1.1 – 18.1.10) in the ANSWER BOOK, for example 18.1.11 True.
- 18.1.1 There is no need for contours on steep sandy soils where potatoes are produced.
- 18.1.2 A seasonal budget is an absolute necessity before planting potatoes.
- 18.1.3 The current price of potatoes will have an influence on the budget for potato production.
- 18.1.4 Because potatoes are a seasonable crop, it is difficult to maintain a positive cash flow throughout the season.
- 18.1.5 The potatoes that a farmer gives to his labourers must be reflected on the expenditure statement.
- 18.1.6 The time-lapse between planting and harvesting is not part of the production records.
- 18.1.7 Medium-sized potatoes weigh between 50 – 100 grams.
- 18.1.8 The greatest number of potatoes is sold in the chips processing sector.
- 18.1.9 Potato processing can be part of the agro-tourism industry.
- 18.1.10 The success of a decision is based on the speed and accuracy of the decision. (10 x 1) (10)
- 18.2 There are certain managerial aspects that are important to control when one harvest potatoes. Name SIX of these aspects. (6)
- 18.3 There are certain restrictions on the selling of potatoes in South Africa. Briefly explain FIVE of the regulations that potatoes have to comply with if selling it in South Africa. (5)
- 18.4 In modern farming precision farming is of utmost importance. What are the advantages of precision farming? (5)
- 18.5 Labour is part of a potato enterprise. By which means can the productivity of labourers be improved? (5)
- 18.6 To effect a sustainable enterprise, a potato producer must keep records of the different aspects of the markets. Name FOUR market aspects which you have to keep records of. (4)

- 18.7 Potatoes lend themselves to entrepreneurship like the one in the advertisement. You want to buy this equipment to start your own business and therefore have to draw up a business plan.



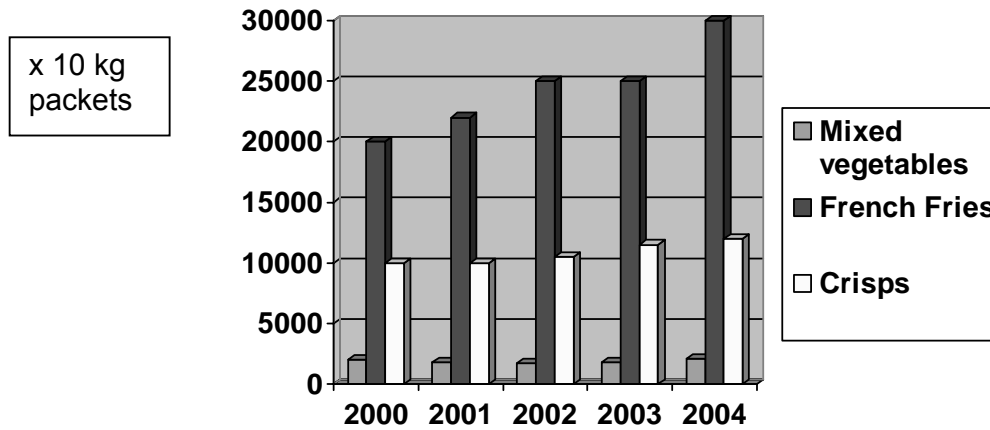
GREAT MONEY SPINNER! EASY PROFITS AT SCHOOL FETES, FLEAMARKETS ET CETERA

- STAINLESS STEEL
 - 250 x 40 m bamboo skewers included.
 - Also known as a potato twister.
 - Find the right spot and earn some serious money.
 - Or just add it to your kiddies menu.
 - Oil at 180 degrees C, 3 minutes to crispy brown unit.
 - Take costs at R1 per potato, the rest is profit.
 - Profit: 500% plus.

R950,00

- 18.7.1 Briefly explain the basic components of a business plan. (4)
- 18.7.2 Explain the elements that will make a business plan more likely to be implemented successfully. (4)

18.8 The following graph illustrates the volumes of mixed vegetables, french fries and crisps sold between 2000 – 2004:



- 18.8.1 Which market was the most stable over the last four years? (1)
- 18.8.2 Which market has shown the most growth over the past four years? (1)
- 18.8.3 For which market will you plant potatoes? Give a reason for your answer. (2)
- 18.8.4 Which factors will increase the amount of potatoes that must be delivered to the processing market? (3)

[50]

TOTAL: 200