



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**AGRICULTURAL MANAGEMENT PRACTICES**

**NOVEMBER 2010**

**MEMORANDUM**

**MARKS: 200**

**This memorandum consists of 14 pages.**

**SECTION A****QUESTION 1.1**

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

(10 x 2) (20)

**QUESTION 1.2**

1.2.1	A✓✓
1.2.2	D✓✓
1.2.3	E✓✓
1.2.4	O✓✓
1.2.5	J✓✓
1.2.6	K✓✓
1.2.7	F✓✓
1.2.8	M✓✓
1.2.9	C✓✓
1.2.10	H✓✓

(10 x 2) (20)

**QUESTION 1.3**

- 1.3.1 Indigenous knowledge practices / system/  
traditional knowledge practices ✓
- 1.3.2 Water capacity / Water-holding capacity ✓
- 1.3.3 Export market / Exporting / International  
marketing✓
- 1.3.4 Motivation ✓
- 1.3.5 Filtration / straining / sieving✓
- 1.3.6 Market plan / Marketing✓
- 1.3.7 Contour✓
- 1.3.8 Correctional actions / Remedial actions /  
replanning / disciplinary action✓
- 1.3.9 Vision / Vision statement✓
- 1.3.10 Petty cash ✓

(10 x 1) (10)

**TOTAL SECTION A: 50**

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

- 2.1      2.1.1      **THREE natural agricultural resources**
- Soil / land ✓
  - Vegetation / grazing / veld / trees / grasslands / forests / plantation / any form of natural vegetation ✓
  - Terrain / slope / topographic ✓
  - Climate / wind / rainfall / temperature / light(sunlight) ✓
  - Animals / insects / micro-organism ✓
  - Water / dams / rivers / lake / borehole (Any 3) (3)
- 2.1.2      **TWO methods to conserve**
- Never exceed carrying capacity (adhere to)/no overstocking / No overgrazing. ✓
  - Rotational grazing / camps / controlled grazing. ✓
  - Remove alien / invasive alien plants. ✓
  - Irrigation ✓
  - Fertilizing ✓
  - Controlled burning ✓
  - Pest and disease control/ chemical control (Any 2) (2)
- 2.2      **Description of each of the intensities of agricultural farming systems**
- Intensive system ✓ and
- Is the production of high volume of products on small pieces of land ✓
  - Animals depend mainly on feed provision. ✓
  - Production system depends mainly on technologies / mechanised. ✓
  - High capital input. ✓
  - High labour input. ✓ (Any 1)
- Semi – intensive system ✓ and
- Animals depend partially on feed provision and partially on natural resources and crops ✓
  - Depends partly on technologies and partly on natural resources ✓ (Any 1)
- Extensive system ✓
- Animals and crops depend mainly on natural resources. ✓
  - Low capital input. ✓
  - Low labour input. ✓ (Any 1)

**NB: One mark for the farming system and one mark for an explanation of that particular farming system. An example will not be accepted as a description.** (6)

**2.3 Type of temporary labourer**

- Rosina – person that works in peak periods/ harvesting periods during the year.✓
- Robert – person used for specific tasks on a farm and then leaves in the farm.✓

(2)

**2.4 FOUR factors that determine the production system**

- Profitability. ✓
- Markets / competition. ✓
- Efficiency of production. ✓
- Production resources available. ✓
- Natural resources / Veld type / Climate / water. ✓
- Farm carrying capacity.
- Available capital / input costs / initial costs✓
- Size of land/farm✓
- Labour✓
- Knowledge / skills of enterprise / personal preferences✓
- Support services available / infrastructure / extension services✓
- Conflicting interests / synchronisation between enterprises✓ (Any 4)

(4)

**2.5 FIVE ways that an organic fertilising will improve soils physically**

- Increase soil temperature. ✓
- Absorbs more water/better water infiltration.✓
- Improves the water holding capacity of the soil/better water capacity.✓
- Binds the soil particles together into loose crumbs/improve soil structure.✓
- Allows aeration.✓
- Separate the clay particles and prevent them from sticking together.✓
- Provide food for the micro-organisms / more micro-organisms.✓
- Increase the tillability of the soil. ✓
- Increased soil fertility. ✓

(Any 5) (5)

**2.6.1 Intensive farming system**

- Precision farming✓

(1)

**2.6.2 FOUR technological tools**

- Global positioning system (GPS) ✓
- Geographical information system (GIS) ✓
- Remote sensing data ✓
- The data into an onboard machine/computer/micro processor✓

(4)

**2.6.3 FOUR advantages of technology**

- Pin points your exact location of planting within one meter. ✓
- Shows where the soil in the field is moist ✓
- Shows where the soil is eroded ✓
- Shows factors in the soil which limits growth of crops ✓
- Shows where the budding of your new crops is thriving and areas where it is not. ✓
- Automatically regulates the application of the exact and right amount of fertilizers and pesticides where they are needed. ✓
- May reduce the input costs / more profitable / more economical / save labour. ✓
- Reduces the risk of contamination of the environment by misuse of Agri-chemicals / tracking of pests and diseases. ✓
- More accurate yield forecasts / simplifies planning / better control. ✓
- More accurate determining inputs like seed / nutrients in plants, etc. ✓
- Higher / optimum yield. ✓

(Any 4) (4)

**2.7 2.7.1 FOUR characteristics to classify natural pastures**

- Palatability / acidity of soil. ✓
- Topography / Plains / mountain. ✓
- Low lying veld. ✓
- Conditions of plant growth in relation to climate. ✓
- Rehabilitation ability. ✓
- Growth stage. ✓
- Height of grass. ✓
- Volume of pastures. ✓
- Digestibility. ✓
- Nutrient value. ✓
- Resistance to utilization. ✓
- Re-growth rate. ✓
- Type of winter and summer plants. ✓
- Botanical composition. ✓

(Any 4) (4)

**2.7.2 THREE ways to solve the problem of water logging**

- Opening waterways. ✓
- Applying pipe drainage systems. ✓
- Applying stone drainage systems. ✓
- Plant crops that can grow in waterlogged conditions. ✓
- Minimize/take away the source of the waterlogged conditions. ✓
- Correct cultivation methods ✓

(Any 3) (3)

**2.7.3 THREE reasons for the division of grazing pastures**

- For rotational grazing. ✓
- To prevent over grazing. ✓
- To allow the resting and recovering of the veld. ✓
- For good management of the farming system. ✓
- To allow the division of the livestock. ✓
- Reclaiming of eroded areas. ✓
- Exclude areas with poisonous plants. ✓
- Exclude high risk areas/parasites/vermin.
- To group homogeneous veld types

(Any 3)

(3)

2.8

2.8.1

**Tabulate the effects of temperature**

Minimum temperature	No/little growth takes place below this. ✓
Optimum temperature	Best temperature for plant growth. ✓
Maximum temperature	Too hot for most of the plants/no or little growth above this temperature. ✓

(3)

2.8.2

**From the graph**

- (a) 15 – 25 mm/day ✓
- (b) 18 °C – 22 °C ✓
- 25 °C – 28 °C ✓

(1)

(2)

2.8.3

**THREE ways to control such high temperatures**

- Mulching ✓
- Watering ✓
- Ground dressing ✓
- Covering (with plastic/organic matter or similar substance. ✓
- Misting. ✓
- Blowers/farm ✓
- Air conditioners ✓
- Painting the cover material ✓

(Any 3)

(3)

**[50]**

**QUESTION 3: RECORDING, FINANCIAL STATEMENTS AND ENTREPRENEURSHIP**

- 3.1 3.1.1 **FOUR reasons to indicate the importance to issue receipts**
- To help the farmer evaluate his farming business.✓
  - To establish the business's profitability.✓
  - To help complete the Trading account.✓
  - To help complete the Balance sheet.✓
  - To avoid or track any illegal sales and theft of produce.✓
  - For record keeping purposes. ✓
  - For taxation purposes. ✓
  - To complete outstanding accounts. ✓
  - Proof of payment / warranty / ownership. ✓
- (Any 4) (4)
- 3.1.2 **FIVE elements or data reflected on cash receipt invoice**
- Date✓
  - Name of company✓
  - Name of buyer✓
  - Quantity purchased✓
  - Description of commodity✓
  - Unit price✓
  - Amount paid✓
  - Subtotal✓
  - VAT✓
  - Total✓
  - Signature of issuer of receipt✓
  - Taxation number ✓
  - Receipt number ✓
- (Any 5) (5)
- 3.2 3.2.1 **SIX main aspects reflected in a business plan**
- Name of business✓
  - Type of business✓
  - Description / profile of business✓
  - Legal information business✓
  - Market plan✓
  - Financial plan✓
  - Description of the product(s) ✓
  - Vision/mission / strategic plan✓
- Any 6 (6)
- 3.2.2 **Necessity to have a business plan**
- Because it describes the business and its goals/ tactical planning✓
  - Instrument for marketing. ✓
  - Effective advice from all the role players. ✓
  - Financial assistance from banks / requirement for loan. ✓
  - Incorporating stock holders to your enterprise. ✓
  - Makes management / control easier. ✓
- (Any 1) (1)

- 3.3      3.3.1      **Calculate the quantity of feed lost**
- $(350 + 900) \text{ kg} - 550 \text{ kg} - 340 \text{ kg} \checkmark = 360 \text{ kg} \checkmark$   
or
  - $300 \text{ kg} + 60 \text{ kg} \checkmark = 360 \text{ kg} \checkmark$
- NB Only answer 2 marks** (2)
- 3.3.2      **THREE possible causes for the loss of feed**
- Over feeding, ✓
  - Bad handling, ✓
  - Bad containers, ✓
  - Theft ✓
  - Consumed by rodents ✓
  - Poor stocktaking procedures /wrong calculations / wrong counting ✓
  - Faulty measuring equipment. ✓ (Any 3) (3)
- 3.3.3      **FOUR measures that can be implemented to minimise the loss of feed**
- Train the workers on feed rationing and weighing of feed. ✓
  - Train the workers on feed handling. ✓
  - Provide good feed containers. ✓
  - Use more efficient supervision methods / disciplinary actions. ✓
  - Organize more security to stop theft. ✓
  - Maintenance / calibration of scale. ✓
  - Control / training in proper stock taking procedures. ✓
  - Close circuit cameras / locking of store rooms. ✓
  - Arrange for the double check of deliveries. ✓
  - Rodent control ✓ (Any 4) (4)



**3.4.1 Supply ONE example****(a) Fixed assets**

- Farm land he owns worth = R1 000 000.00✓
- Farm house he owns worth = R500 000.00✓ (Any 1)

**(b) Current assets**

- Cash in hand = R50 000.00✓
- Stock of seeds = R80 000.00✓
- Balance in the bank = R20 000.00✓ (Any 1)

**(c) Long-term liabilities**

- Outstanding bank loan = R250 000.00✓ (Any 1)

**(d) Current Liabilities**

- Loaned seeds from neighbour = R50 000.00✓
  - Inputs loaned from the local cooperative = R20 000.00✓
- (Any 1) (4)

**3.4.2 Calculate the total value of assets**

- $R1\ 000\ 000 + R500\ 000 + R50\ 000 + R80\ 000 + R20\ 000$ ✓
- $= R1\ 650\ 000$  ✓

**Only correct answer 2 marks****(2)****3.4.3 Explain the reason for decision to pay off loans**

- High interest rates. ✓
  - Higher Net income. ✓
  - Loaned / borrowed capital is expensive. ✓
  - Credibility ✓
  - **Explaining of one of the reasons learner gets 2 marks.**
- Only mentioning of the reasons 1 mark. Combining of two or more in explanation 2 marks.**

**(2)**

3.5      3.51      **Calculate the depreciation**

- Resale value =  $R1000\,000 \left(1 - \frac{20}{100}\right)^5$  ✓  
= R327 680 ✓
- Depreciation =  $\frac{R1000\,000 - R327\,680}{5}$  ✓  
= R134 464 ✓

**NB Second part of calculation must be marked according to the answer of the first part of calculation.**

(5)

3.5.2      **TWO possible reasons for the depreciation**

- Aging. ✓
- Wear and tear. ✓
- Hours worked. ✓
- Condition. ✓
- New models / modern technology ✓

(Any 2)      (2)

3.6      3.6.1      **Annual income**

- R177 500 – R98 000 = R79 500 ✓ ✓

(2)

3.6.2      **Additional annual production cost**

- R109 000 – R61 500 = R47 500 ✓ ✓

(2)

3.6.3      **Change on Net Income**

- R79 500 – R47 500 ✓ = R32 000 ✓  
Or

- R68 500 – R36 500 ✓ = R32 000 ✓

**Two marks for only correct answer.**

(2)

3.6.4      **Suggest a recommendation**

- The irrigation scheme generates more income in a year ✓
- Irrigation distributes income throughout the year. ✓

(Any 1)      (1)

3.6.5      **THREE reasons for this rise in annual production cost**

- Maintenance of irrigation equipment ✓
- Labour ✓
- Inputs (fertilizers, seeds) ✓
- Water levy ✓
- Fuel / electricity costs. ✓

(Any 3)      (3)

**[50]**

**QUESTION 4: HARVESTING, VALUE-ADDING, MARKETING, AGRI-TOURISM AND INDUSTRY****4.1 THREE characteristics of each method of harvesting**

HARVESTING METHOD	CHARACTERISTICS
<b>Machine harvesting</b>	<ul style="list-style-type: none"> <li>• Fast✓</li> <li>• Efficient / less labour✓</li> <li>• Can harvest vast areas✓</li> <li>• Expensive✓</li> <li>• Specialised✓</li> <li>• Requires maintenance✓</li> <li>• Capital intensive✓ (Any 3)</li> </ul>
<b>Using hand tools</b>	<ul style="list-style-type: none"> <li>• Cheap✓</li> <li>• Slow down harvest time✓</li> <li>• Very little maintenance required✓</li> <li>• Not suitable for large fields/ plots✓</li> <li>• Takes time and effort✓</li> <li>• Labour intensive. ✓</li> <li>• Less wastage✓ (Any 3)</li> </ul>

(6)

**4.2 4.2.1 FOUR reasons to indicate the importance to preserve a food product**

- To protect food against micro-organisms, oxidation and other forms of spoilage. / provision of safe food✓
- To prepare food of uniform quality on a large scale. ✓
- To provide a stable market for food that is available for a few weeks in the year, to be more available throughout the year/ food security. ✓
- To have a greater variety of food available in non producing areas. ✓
- To feed humankind. ✓

(Any 4)

(4)

**4.2.2 Describe the pasteurisation process**

- Used on food that is very sensitive to heat. ✓
- Heating of the product. ✓
- Normally to lower than 100 °C✓
- Keeping at the desired temperature for a certain time. ✓
- Rapidly cooling of the product✓
- Cool to the storing temperature / temperature needed for this product. ✓
- Packed in sterile containers / continue a process. ✓ (Any 4)

(4)

**4.3 4.3.1 Guidelines for handling of animals in the abattoir**

- Pain free transportation and offloading.✓
- Separate in homogeneous groupings / sexes/ ages✓
- No stampedes / keep animals calm.✓
- No overcrowding.✓
- Animals are provided with clean water and food.✓
- Protected from injuries and bruises.✓

(Any 2)

(2)

**4.3.2 Guidelines for Slaughtering/ killing the animal**

- Animals are killed in a humane way.✓
- A stunning gun is used/electrical shock.✓
- Pain causing methods are avoided.✓
- Animals are kept calm. ✓
- Animals must be bled out ✓

(Any 2) (2)

**4.3.3 Guidelines for cleanliness and hygiene**

- Workers wash their hands frequently.✓
- Footbaths. ✓
- Wear clean clothes.✓
- Stainless steel utensils and surfaces cleaned every time.✓
- Animals are inspected for diseases prior to slaughtering.✓
- Sick animals are separated from healthy ones.✓
- The carcass is inspected for diseases by health inspectors.✓
- Control of flies. ✓
- By-products and waste management. ✓
- Sanitation soaps and liquids are used/ daily cleaning of facilities ✓

(Any 2) (2)

**4.3.4 Guidelines for handling of the carcass**

- Classification of carcass.✓
- Sorting of carcass.✓
- Meat is chilled/ refrigerated to keep germs away.✓
- Cutting bruises and sick parts away. ✓
- Meat inspection. ✓
- Allow Rigor mortis to complete / ripening of meat. ✓

(Any 2) (2)

**4.4 4.4.1 Material used for construction**

- Non combustible or heat resistant material must be used for building.✓
- Avoid materials that leave rough surfaces.✓
- Insulation material in the roof and walls to keep structure cool.✓
- Tiles on walls to clean easy/walls covered with tiles. ✓
- Use strong material/concrete/cement and bricks. . ✓
- Avoid wood and similar material. ✓

(Any 2) (2)

**4.4.2 Flooring and roofing**

- Floors and roofs must be water proof / impervious to water✓
- Easy to clean and sanitise. ✓
- Smooth cement floors for easy cleaning and washing ✓
- Avoid materials that leave rough surfaces.✓
- Insulation material in the roof and walls to keep structure cool.✓

(Any 2) (2)

- 4.5      4.5.1      **TWO main aspects that characterises the free marketing system**
- Produce sell to whoever, ✓
  - At any time. ✓
  - At a negotiated price. ✓
  - At any place. ✓
- (Any 2)      (2)
- 4.5.2      **TWO advantages of the free marketing system**
- Money immediately available. / Payments made in cash/cheque/bank deposit/internet. ✓
  - Results in higher quality products as a result of competition. ✓
  - Minimal marketing costs ✓
  - Larger profits. ✓
  - Sell directly to the consumer / no middleman. ✓
- (Any 2)      (2)
- 4.5.3      **TWO disadvantages of a free marketing system**
- Results in forming of monopolies/conglomerates. ✓
  - Low bargaining power. ✓
  - Farmer needs training / time to market products. ✓
  - No coordination between producers that leads to a surplus
  - Farmer can be exposed to a high level of competition. ✓
- (Any 2)      (2)
- 4.6      4.6.1      **Identify the concept with regard to marketing. Reason**
- Marketing chain. ✓
  - A marketing chain is a series of all those processes that an agricultural product goes through from production to the point when it reaches its final destination, the consumer. ✓
- (2)
- 4.6.2      **Arrange these sites of the market process in the order**
- Farm → Processing plant → whole sale → vendor's stall
- (4)
- 4.7      4.7.1      **TWO facilities that are necessary to attract tourists**
- Caravan parking space. ✓
- A tuck shop. ✓
- Waterfall. ✓
- Beautiful nature. ✓
- Farm. ✓
- (Any 2)      (2)

4.7.2 **Indicate a facility that should be moved away regard Agra-tourism. TWO reasons**

- A dumping site used by the farmer and the workers families.✓  
And
- Because it is a health hazard to the tourists and camping people.✓
- Waste material from the dumping site may pollute the river water.✓
- It is environmentally unfriendly.✓

(Any 2) (3)

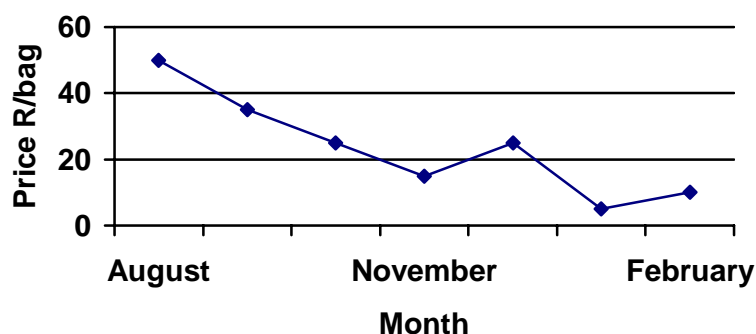
4.7.3 **Identify the item/ facility concerned with social welfare and health**

An emergency sick room with First Aid kit.✓

(1)

4.8 4.8.1 **Design a line graph to reflect the prices**

**PRICE OF AN AGRICULTURAL  
PRODUCT**



Checklist / criteria for marking

- Heading.✓
- Axis labelled.✓
- Line graph.✓
- Correctness of graph. ✓

(4)

4.8.2 **TWO possible reasons for the initial decrease in price and then the suddenly increase of price**

Supply increase / description of factors that influence supply e.g. climate ✓

December month the demand increases / description of factors that influence demand. ✓

(2)  
[50]

**TOTAL SECTION B: 150**  
**GRAND TOTAL: 200**