basic education

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

# NATIONAL SENIOR CERTIFICATE

## GRADE 12

## AGRICULTURAL MANAGEMENT PRACTICES

## NOVEMBER 2019

## MARKING GUIDELINES

**MARKS: 200**

**These marking guidelines consist of 13 pages.**

## SECTION A

## QUESTION 1

1.1 **Multiple choice**

1.1.1 A ✓✓
1.1.2 C ✓✓
1.1.3 B ✓✓
1.1.4 D ✓✓
1.1.5 B ✓✓
1.1.6 A/B ✓✓
1.1.7 D ✓✓
1.1.8 C✓✓
1.1.9 C ✓✓
1.1.10 A ✓✓ (10 x 2) (20)

1.2 **Matching columns**

1.2.1 G ✓✓
1.2.2 C ✓✓
1.2.3 E ✓✓
1.2.4 A ✓✓
1.2.5 K ✓✓
1.2.6 H ✓✓
1.2.7 I ✓✓
1.2.8 F ✓✓
1.2.9 L ✓✓
1.2.10 B ✓✓ (10 x 2) (20)

1.3 **Correct agricultural terms**

1.3.1 Fresh produce market/auction ✓
1.3.2 Bottles/Jars/Rigid packaging ✓
1.3.3 Petty cash voucher ✓
1.3.4 Cheque ✓
1.3.5 Grading ✓ (5 x 1) (5)

1.4 **Underlined words**

1.4.1 Monitoring/Control ✓
1.4.2 Veld management/Rotational grazing✓
1.4.3 Selective grazing ✓
1.4.4 Financial ✓
1.4.5 Disciplinary ✓ (5 x 1) (5)

**TOTAL SECTION A 50**

## SECTION B

## QUESTION 2: PHYSICAL AND FINANCIAL PLANNING

2.1 **FOUR functions of soil in crop production.**

- Soil allows air movement ✓
- Soil allows water infiltration
- Storage of water✓
- Soil serves as a medium in which plants grow ✓
- Serves as a habitat for organisms (animals) ✓
- Soil plays a role in carbon retention ✓
- Soil plays an important role in climate regulation ✓
- Provide nutrients to plants ✓ (Any 4) (4)

2.2 **Contour ploughing**

2.2.1 **Contour ploughing and safe disposal of surface running water**

- Ridges can be built/ploughed along contours ✓
- The water behind the ridges empty into waterways and flow down the slope at a moderate angle ✓
- The waterway disposes the surface water that flows into a dam or stream ✓ (Any 2) (2)

2.2.2 **Contour ploughing and terracing**

- **Contour ploughing**
  Follows the 'natural shape' of the slope without altering it ✓
  Used against moderate slopes ✓ (Any 1)
- **Terracing**
  Alters the shape of the slope to produce flat areas. ✓
  Used against steep slopes ✓ (Any 1) (2)

2.3 **Soil drainage and pH**

2.3.1 **Grey clay soil**

- It is also a clay soil with small particles which means a great number of micro-pores and thus very high water retention capacity ✓
- The plate-like structure also indicates poor drainage ✓
- The grey colour usually depicts a waterlogged soil ✓ (Any 2) (2)

2.3.2 **pH-scale**

- Percentage $H^+$/pH-scale is represented by a number between 0(1) and 14 ✓
- Indicates the acidity ✓ or alkalinity (base) ✓

**Meaning**

A pH of 7,8 indicates that the soil is alkaline ✓ (4)

2.3.3 **Improve pH**

- Add gypsum/plaster (calcium sulphate) ✓ (1)

2.3.4 **Change method of cultivation to conservation cultivation**

- Young farmer should stop clean cultivation ✓
- Reduced tillage use - No-till/Mulching/Stubble cultivation ✓
- Adding organic matter ✓ (Any 1) (1)

**Motivation for decrease in input costs**

- Lowest fuel consumption ✓
- Machinery costs – wear and tear are lower ✓
- Can adapt more and faster to optimal plant time ✓
- Best management of water and wind erosion ✓ (Any 3 as motivation) (3)

2.4 **Labour practises and positioning of buildings**

- The workers do not have to waste time and energy on moving long distances between the various workstations therefore they will be able to work more effectively ✓.
- The workers need to work in clean, comfortable and well-lit surroundings, and need access to suitable ablution and lodging; all of this will be nearby ✓
- Training in positioning and time management ✓ (Any 2) (2)

2.5 **Different types of capital and an example**

- Fixed capital ✓ – buildings, dams, fencing ✓
- Moveable capital ✓ – livestock, implements, equipment ✓
- Working/floating capital ✓ – feed, fertilizer, seed, fuel ✓

(Any appropriate examples) (6)

2.6 **Farming Methods**

2.6.1 **Farming method**

- A = Semi-intensive production ✓
- B = Extensive production/Free range ✓
- C = Intensive production ✓ (3)

2.6.2 **a) Labour requirements**

- Method B (Extensive method) – low labour input ✓
- Method C (Intensive method) – high labour input ✓

**b) Dependence on technology**

- Method B – depend very little if at all on technology ✓
- Method C – depend highly on technology ✓ (4)

2.6.3 **Organic farming method**

**<u>Answer A (Farming method A)</u>** ✓

**Motivation**

- Feed that animals eat is more natural - less hormones, chemicals, etc. ✓
- Less harmful to the environment ✓
- Produce less per hectare – less carbon emissions ✓

**<u>Answer B (Farming method B)</u>** ✓

**Motivation**

- Feed that animals eat is natural - no hormones, no chemicals, etc. ✓
- Less harmful to the environment ✓
- Produce less per hectare – less carbon emissions ✓

(Any 2 for motivation) (3)

2.7 **Precision farming in animal production**

2.7.1 **Precision farming to aid in dividing a farm into camps**

- GIS – Global Information System /Colour photos/Imagery/Drones/GPS✓ (1)

2.7.2 **Requirements of camps for animal production**

- The camp must have shade and shelter e.g. trees or grass shelters for the animals ✓
- Clean and fresh drinking water must be available all the time✓
- The source(s) of water must be in the centre of the camp in order to minimize the distance that animals must walk ✓
- Enough palatable fodder ✓
- Topography should allow camps ✓
- Proper fencing ✓ (Any 2) (2)

2.7.3 **Precision farming to keep track of animals**

- Animals must be tagged with GPS electronically/tags ✓
- Animals can be located using drones ✓
- Geo-fences can be set for farm ✓
- Remote cameras ✓
- Using RFID tags on animals ✓ (Any 2) (2)

2.8 **Budgets**

2.8.1 Maintenance budget ✓ (1)

2.8.2 Cash flow budget ✓ (1)

2.8.3 Whole farm budget✓ (1)

2.8.4 Partial budget ✓ (1)

2.8.5 Enterprise budget ✓ (1)

2.9 **A budget is prepared once and then filed**

- The budget must be constantly updated ✓

The budget is used to:

- Measure progress ✓
- Plan corrective actions ✓
- Correct variances ✓
- Comparing real values with budgeted values ✓ (Any 3) (3)

**[50]**

## QUESTION: 3 ENTREPRENEURSHIP, RECORDING, MARKETING, BUSINESS PLANNING AND ORGANISED AGRICULTURE

### 3.1 Business planning

**3.1.1 Description of a vision statement**

- Describes the future long-term aims and objectives of a farming enterprise✓ (1)

**3.1.2 TWO Reasons for review of business idea**

- Change in prices ✓
- Climatic changes ✓
- Introduction of modern technologies ✓ (Any 2) (2)

**3.1.3 Use of SWOT analysis in determining the performance of the farm**

- The strong points of the farming can be determined ✓
- The weak points (aspects that can hampers growth of the farm can be identified ✓
- Opportunities that exist in the or for the business can be recognised ✓
- Any threats (that can oppose the future expansion of the business can be identified ✓ (4)

### 3.2 Entrepreneurship

**3.2.1 Characteristics of the successfulness of the entrepreneur.**

- Self-confidence ✓
- Risk taking ✓
- Management skills ✓
- Hard working ✓
- Initiates things/self-starter ✓
- People skills ✓
- Handle responsibilities ✓
- Visionary/dreamer ✓
- See opportunities ✓
- Decision maker ✓
- Reliable ✓
- Leadership ✓
- Energetic ✓ (Any 4) (4)

**3.2.2 TWO risks to consider when starting your own business.**

- Business risks ✓
- Financial risks ✓
- Political/legal risk ✓
- Environmental risks ✓ (Any 2) (2)

### 3.3 Marketing

**3.3.1 Size of the market**

The bigger the market the higher the sales of the products ✓ (1)

**3.3.2 Preferences of the consumers**

Consumers prefer different products depending on their needs✓ (1)

3.4 **Marketing mix**

3.4.1 **Marketing variables**

A. Product ✓
B. Price ✓
C. Place ✓
D. Promotion / Advertising ✓ (4)

3.4.2 **Factors to be considered for marketing the product.**

- Quality of the product ✓
- Size of the product ✓
- Product presentation ✓
- Packaging ✓ (Any 2) (2)

3.4.3 **Ways of achieving promotion**

- Advertising of the product✓
- Exhibition of the product✓
- Personal selling/Direct sales✓
- In- store promotion✓ (Any 2) (2)

3.4.4 **Aspects that influence price**

- Cost ✓
- Demand ✓
- Competition ✓
- Supply ✓ (Any 2) (2)

3.5 **Production sequence**

3.5.1 **Production and marketing sequence**

Planning for production ✓
↓
Soil preparation and planting ✓
↓
Grading / Storage ✓
↓
Storage / Grading ✓
↓
Distribution ✓
↓
Sales to consumers✓

**Marking rubric**

- Sequence – CA marking (6)

3.5.2 **Reasons for paying high prices for agricultural produce**

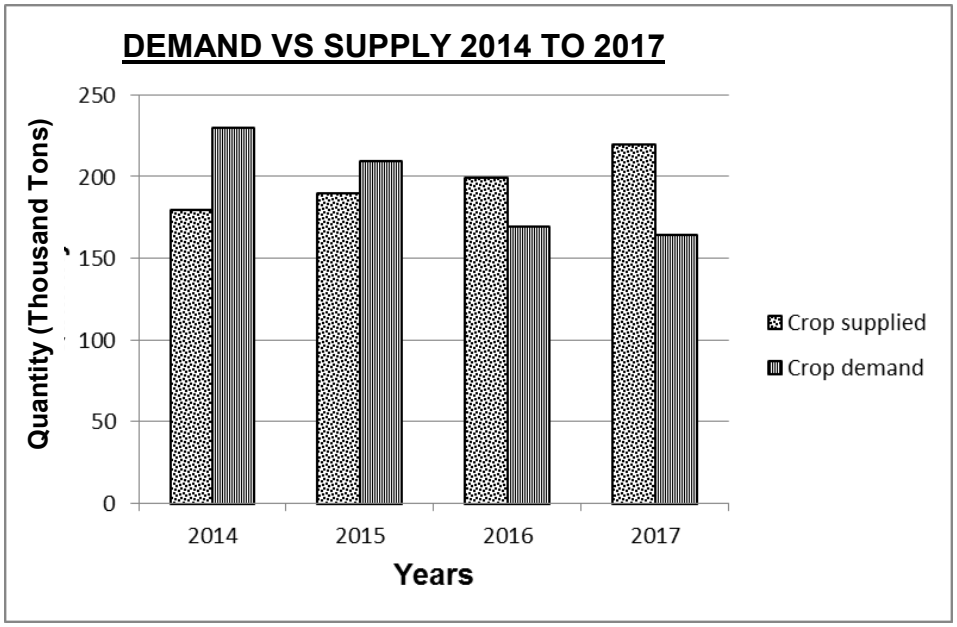
- Storage costs ✓
- Transportation costs ✓
- Processing costs ✓
- Intermediaries/Agent's costs/Middleman ✓
- Supply and demand ✓
- Consumer preferences/Freshness ✓
- Exchange rate/Inflation ✓ (Any 3) (3)

3.5.3 **The pooling system**

- Cooperative marketing system ✓ (1)

3.6 **Supply and demand**

3.6.1




**Criteria/rubric**

- Correct heading ✓
- X-axis and Y-axis correct labelling, calibration and unit ✓
- Showing keys for graphs ✓
- Correct type graph ✓
- Accurate demand-graphs ✓
- Accurate supply-graphs ✓ CA-marking (6)

3.6.2 **State the year sellers want to sell**

- 2014 ✓ (1)

3.6.3 **State the year buyers want to buy**

- 2017✓ (1)

3.7 **Direct and indirect competition**

3.7.1 **Direct competition**

- Canned fruit versus fresh fruit ✓
- Frozen vegetables versus fresh vegetables ✓
- Ground coffee beans versus instant coffee ✓ (3)

3.7.2 **Indirect competition**

- Margarine versus butter ✓
- White meat versus red meat ✓ (2)

3.8 **Farm areas on maps**

- Grazing camps / arable land / vegetation✓
- Buildings ✓
- Water resources - Water troughs/earth dams Wind pumps/windmill ✓
- Fence lines ✓
- Camp sizes and numbers✓
- Roads ✓ (Any 2) (2)

**[50]**

## QUESTION 4: HARVESTING, PROCESSING, MANAGEMENT AND AGRITOURISM

### 4.1 Harvesting agricultural crops

#### 4.1.1 Physiological indicators of crop maturity

- Colour of crop (fruit) ✓
- Shape ✓
- Size ✓
- Leaf changes (discolouring) ✓
- Firmness ✓
- Sugar content ✓
- Moisture ✓
- Flowering ✓ (Any 3) (3)

#### 4.1.2 Disadvantages of hand harvesting

- Very slow ✓
- Produce may be contaminated ✓
- Only small areas can be harvested ✓
- Depends on weather conditions ✓
- Vulnerability to theft ✓
- Labour intensive ✓ (Any 4) (4)

### 4.2 Advantages of applying good agricultural practices

- Provides financial benefit to the producer ✓
- Consumer gets a quality product ✓
- Possible spread of pests and diseases is eliminated ✓
- Chemical pollution is eliminated ✓
- Possible allergy is eliminated ✓
- Products that causes diseases are eliminated as well as the cost of handling them ✓
- Protecting farming resources ✓ (Any 4) (4)

### 4.3 FIVE tasks the manager should consider regarding labour

- Appointment and dismissal of staff members ✓
- The drawing of specifications/job description for each task ✓
- The distribution of duties among staff members ✓
- Knowledge/skills training programmes for staff ✓
- Remuneration/promotion/motivation ✓
- Recreation/social/cultural aspects of labour management ✓ (Any 5) (5)

### 4.4 Dangers consumers can be exposed to from fresh produce

- Biological hazards – due to micro-organisms such as bacteria, viruses, fungi and parasites ✓✓
- Chemical hazards – due to products infected with harmful chemicals used during production, handling and storage ✓✓
- Physical hazards – fragments of substances that are not part of the product may be present and pose a hazard ✓✓ (6)

4.5 **Packing in the field and transporting**

- Shipping containers / mass containers ✓
- Polyethylene bags ✓
- Plastic crates ✓
- Wooden crates ✓
- Wooden or plastic bulk bins ✓
- Aluminium crates ✓
- Trolley/trailers/trucks ✓ (Any 5) (5)

4.6 **Factors that determine the method of storage for cultivated agricultural products**

- The moisture content of the product from the field ✓
- The relative humidity of the environment during the storage period ✓
- Volume and type of produce ✓ (Any 2) (2)

4.7 **Value-adding**

4.7.1 **Advantages of value adding in agri-business**

- Increases the price you will get for the raw materials ✓
- Product is available throughout the year ✓
- Product has a longer shelf life ✓
- Determines your income ✓
- Creates a wider customer base ✓
- Creates job opportunities ✓
- Increase taste ✓
- Increase Gross Domestic Product ✓
- Space saving purposes ✓ (Any 4) (4)

4.7.2 **Use of natural preservatives in the prevention of microbial activity on food**

- Spices ✓– contain chemicals that inhibit the growth of micro-organisms ✓
- Salting ✓ – high salt concentrations have an inhibitory effect on micro-organisms ✓
- Sweeteners ✓ – high sugar concentrations can completely stop microbial activity ✓ (6)

4.8 **The Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972)**

- All ingredients must be mentioned ✓
- List ingredients in order of mass contribution – main ingredient first ✓
- Preservatives / additives must be mentioned ✓
- Allergies must be noted ✓
- In pure products insignificants ingredients do not have to be mentioned ✓ (Any 3) (3)

4.9 **Factors promoting the productivity of workers**

4.9.1 **Physical planning of the farm**

- Can be achieved through the placement of fixed improvements, their planning and implementation. One worker will be able to manage many tasks at one go instead of having many workers manning the different sections ✓ (1)

4.9.2 **Economic units**

- The maximum production must be obtained with the aid of minimum workers ✓ (1)

4.9.3 **Planning of the production processes**

- Production processes must be planned in advance with a preliminary programme of operations, so that peak times, when labour is in great demand, it can be identified without having to hire additional workers ✓ (1)

4.9.4 **Effective mechanisation**

- Effective mechanisation increases labour efficiency by completing more work per unit of labour, as the fatigue factor is largely eliminated ✓ (1)

4.10 **Agritourism**

- Accommodation.✓
- The natural environment including birds and wild animals.✓
- Different cultural customs of the area. ✓
- Farm activities e.g. milking, rustling etc. ✓
- Farm adventures e.g. Horse riding, 4x4, hiking ✓ (Any 4) (4)

**[50]**

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