



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

AGRICULTURAL SCIENCES P2

NOVEMBER 2025

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 12 pages.

SECTION A**QUESTION 1**

1.1	1.1.1	C ✓✓	(10 x 2)	(20)
	1.1.2	B ✓✓		
	1.1.3	D ✓✓		
	1.1.4	C ✓✓		
	1.1.5	A ✓✓		
	1.1.6	A ✓✓		
	1.1.7	B ✓✓		
	1.1.8	D ✓✓		
	1.1.9	B ✓✓		
	1.1.10	C ✓✓		
1.2	1.2.1	D ✓✓	(5 x 2)	(10)
	1.2.2	A ✓✓		
	1.2.3	H ✓✓		
	1.2.4	C ✓✓		
	1.2.5	G ✓✓		
1.3	1.3.1	Price fluctuation ✓✓	(5 x 2)	(10)
	1.3.2	Net worth/net value/owner's equity ✓✓		
	1.3.3	Genetics ✓✓		
	1.3.4	Aneuploidy ✓✓		
	1.3.5	Locus ✓✓		
1.4	1.4.1	Niche ✓	(5 x 1)	(5)
	1.4.2	Control/monitoring ✓		
	1.4.3	Punnet ✓		
	1.4.4	Mutation ✓		
	1.4.5	Homozygote/pure-bred ✓		

TOTAL SECTION A: 45

SECTION B**QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING****2.1 Supply and demand****2.1.1 The situation in a market**

Shortage/under supply/deficit ✓

(1)

2.1.2 ONE factor that led to shortage

- High production costs ✓
- Lack/outdated technology ✓
- Lack of subsidies ✓
- High demand for the product ✓
- Adverse environmental conditions ✓
- Many competitive products ✓
- Wide range of complementary products ✓
- Expectations of future price changes ✓
- Low price of the product ✓
- Fewer producers ✓
- Production out of season ✓
- Political/market instability ✓
- Legislation ✓

(Any 1) (1)

2.1.3 Explanation of market equilibrium

Market equilibrium is a situation in a market where the quantity demanded ✓ is equal to the quantity supplied ✓

(2)

2.2 Promotion of products**2.2.1 Indication of the method of promoting products**

Advertisement ✓

(1)

2.2.2 TWO other methods of promoting products

- In-store promotion ✓
- Direct mailing/internet selling ✓
- Personal selling ✓
- Trade fairs and exhibitions ✓

(Any 2) (2)

2.3 Price elasticity**2.3.1 The product showing price inelasticity**

Maize ✓

(1)

2.3.2 Reason for price inelasticity

The change in price had little influence on the quantity of product/maize demanded ✓✓

(2)

2.3.3 Explanation

When the substitute products are available, the demand for the product tends to be more elastic ✓✓

OR

When there are no substitute products available, the demand for the product tends to be more inelastic □□

(2)

2.4 Marketing functions**2.4.1 The agricultural marketing function**

D - Transportation ✓

(1)

2.4.2 TWO advantages of processing

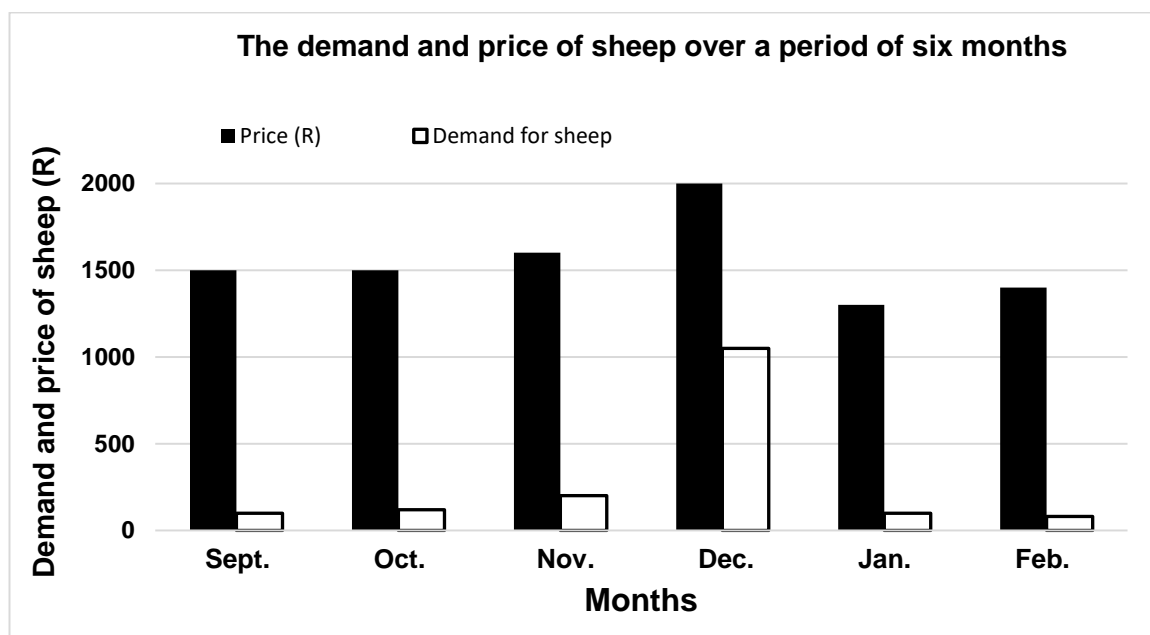
- Increases the value of the product/value adding ✓
- Overcomes over-supply of the product ✓
- Allows easier packaging and handling of product/easy to transport/convenience ✓
- Provides job opportunities ✓
- Ensures the availability of product throughout the year ✓
- Reduces spoilage/perishability/longer shelf life ✓
- Ensures food security ✓
- Improved food safety ✓
- Makes the products more appealing to the consumer ✓

(Any 2) (2)

2.4.3 ONE guideline to ensure product safety when packaging

- Containment for convenient handling ✓
- Prevention of harmful microbial growth ✓
- Free from chemicals/foreign objects/avoid health risks ✓
- Protection against mechanical damage ✓

(Any 1) (1)

2.5 Bar graph**2.5.1 Bar graph****CRITERIA/RUBRIC/MARKING GUIDELINES**

- Correct heading ✓
- X axis: Correctly calibrated with label (Months) ✓
- Y axis: Correctly calibrated with label (The demand and price of sheep) ✓
- Correct unit (R) ✓
- Bar graph ✓
- Accuracy (80% + correctly plotted) ✓ (6)

2.5.2 The month with highest income

December ✓ (1)

2.5.3 Deduction of the factor that could have led to the higher demand of sheep in December

Festive season □ (1)

2.6 Marketing channels**The marketing channel related to each of the following statements**

- 2.6.1 Farm-gate marketing ✓ (1)
- 2.6.2 Fresh produce markets ✓ (1)
- 2.6.3 Internet/online marketing ✓ (1)

2.7 The entrepreneurial process**2.7.1 The phases of the entrepreneurial process**

- A Identify an opportunity/generate a business idea ✓ (1)
B Plan the business/developing a business plan ✓ (1)

2.7.2 Definition of the concept entrepreneurship

A process of bringing together resources and assets to make use of an opportunity to create a business venture ✓✓ (2)

2.8 Business plan**2.8.1 TWO aspects that potential investors look for in a business plan**

- Financial viability/financial plan of the business ✓
- Possible threats and strengths of the business/SWOT analysis ✓
- Marketing plan ✓
- Human resource plan ✓ (Any 2) (2)

2.8.2 TWO electronic resources that can be used as a tool for drawing up a business plan

- Computers/cell phones/laptops ✓
 - Computer software programmes ✓
 - Wi-fi-connections/data ✓ (Any 2) (2)
- [35]**

QUESTION 3: PRODUCTION FACTORS**3.1 Land****3.1.1 Economic term describing economic characteristics of land**

- (a) Appreciation ✓ (1)
- (b) Collateral ✓ (1)

3.1.2 Explanation of farming methods to increase land productivity

- (a) **Use of scientific methods**
 - Farmers make informed decisions based on reliable data ✓ about soil conditions, crop health, weather patterns and pest activity ✓
 - Minimizing waste and environmental impact ✓ by using crop rotation, cover cropping, reduced tillage and precision agriculture ✓
 - Optimising resource allocation like irrigation, fertilisation, and pest control, ✓ resulting in maximizing crop yield ✓ (Any 1) (2)
- (b) **Consolidation of small uneconomical land units**

Land consolidation improves the efficiency and cost-effectiveness ✓ of investments in transportation, communication networks, utilities and irrigation systems ✓ (Any 1) (2)

3.2 Methods to increase labour productivity**3.2.1 Consolidation of small uneconomical land units**

- The production output of labour force ✓ in relation to the amount of money that is paid for wages ✓
- Measure of output ✓ per unit input of the labour force ✓ (Any 1) (2)

3.2.2 Deduction of the labour problem

- (a) **B** - Lack of skills/training ✓ (1)
- (b) **C** - HIV and AIDS/diseases/absenteeism/scarcity of labourers ✓ (1)
- (c) **D** - Living conditions ✓ (1)

3.2.3 Indication on how mechanisation increases labour productivity

- More work is completed within a short space of time ✓
- Working more efficient ✓
- Eliminates fatigue ✓ (Any 1) (1)

3.3 Labour contract**3.3.1 Indication of the component of a contract**

- (a) **1** - Term/duration of employment ✓ (1)
- (b) **4** - Working hours ✓ (1)
- (c) **5** - Mode/method of payment/remuneration ✓ (1)

3.3.2 Labour legislation addressing leave benefits

Basic Conditions of Employment Act/BCEA (Act 75 of 1997) ✓ (1)

3.3.3 Compliance to the Occupational Health and Safety Act

Overall, mask and gloves ✓ (1)

3.4 Capital**3.4.1 Types of capital**

- (a) **PICTURE C** - Fixed capital ✓ (1)
- (b) **PICTURE A** - Production/working/floating capital ✓ (1)

3.4.2 Explanation of the medium-term credit

Is used to purchase medium-term assets ✓ and is repayable over a period of 2 to 10 years ✓ (2)

3.5 Cash flow statement**3.5.1 Justification of a financial record as not an income statement**

- It has cash flow summary/opening balance/closing balance ✓ which are not the components of the income statement ✓
- The income statement has dates of transaction ✓ which are not appearing in the above financial record ✓ (Any 1) (2)

3.5.2 Determination of the value

A R79 100 ✓ (1)

3.5.3 Calculation of the values

- (a) **B (Profit/loss)** = Total income – Total expenses
= R41 200 – R9 500 ✓
= R31 700 ✓ (2)

- (b) **C (Closing balance)** = Opening balance + profit/loss
= R79 100 + R31 700 □
= R110 800 □
OR
= R79 100 + (R41 200 – R9 500) □
= R110 800 □ (2)

3.5.4 Reason

- It is generating profit/net income is positive/R31 700 ✓
 - Income is higher than expenses every month ✓
- (Any 1) (1)

3.6 External and internal forces**3.6.1 Identification of the external forces**

- (a) Economic/political ✓ (1)
- (b) Competition ✓ (1)

3.6.2 Sources of risk

- (a) Financial/market and price risk ✓ (1)
- (b) Market and price risk ✓ (1)

3.7 TWO general management skills needed to manage a farming business

- Labour management ✓
 - Land management ✓
 - Financial management ✓
 - Agricultural management ✓
 - Stock management ✓
 - Crisis management ✓
 - Conceptual skills ✓
 - Analytical skills ✓
 - Ability to apply new knowledge ✓
 - Problem solving and decision making skills ✓
 - Planning skills ✓
 - Organisational skills ✓
 - Co-ordination skills ✓
 - Interpersonal and communication skills ✓
 - Ability to adapt ✓
 - Delegation skills ✓
- (Any 2) (2)
- [35]**

QUESTION 4: BASIC AGRICULTURAL GENETICS**4.1 Monohybrid cross****4.1.1 Type of cross**

Monohybrid ✓

(1)

4.1.2 Justification

It is a cross that involves one characteristic/trait ✓

(1)

4.1.3 Identification of(a) **PROCESS 1** - Meiosis/gametogenesis ✓

(1)

(b) **PROCESS 2** - Fertilisation ✓

(1)

4.1.4 Number and phenotype(a) **Number of black offspring in the F₂ generation** - 3 ✓

(1)

(b) **Phenotype of the F₁ generation** - All black ✓

(1)

4.1.5 Genotypic ratio of the F₂ Generation offspring

1BB : 2Bb : 1bb ✓

(1)

4.2 Punnet square**4.2.1 Punnett square**

Gametes	D	d
D	DD	Dd
d	Dd	dd

Marking rubric

- Correct gametes of male parent ✓
- Correct gametes of female parent ✓
- Correct genotype of the offspring ✓
- Populated Punnet square ✓

(4)

4.2.2 The fraction of the spherical seed shape for F₁ offspring $\frac{3}{4}$ ✓

(1)

4.2.3 Calculation of the number of spherical seeds $\frac{3}{4}$ x 900 pea plants ✓

4

= 675 pea plants ✓

(2)

4.3 Patterns of inheritance

- 4.3.1 Co-dominance ✓ (1)
- 4.3.2 Polygenic inheritance ✓ (1)
- 4.3.3 Multiple alleles ✓ (1)
- 4.3.4 Incomplete dominance ✓ (1)

4.4 Variation**4.4.1 Identification of the characteristics**

- (a) **Genetic**
Horn conformation/colour/body conformation/size/frame/height/
sex/number of ears ☐ (1)
- (b) **Environment**
Body weight ✓ (1)

4.4.2 TWO importance of variation

- Foundation for selection ✓
- Genetic improvement ✓
- Adaptability ✓
- Food security ✓
- Disease resistance ✓
- Development of new breeds/improved biodiversity ✓ (Any 2) (2)

4.5 Selection and breeding**4.5.1 Identification of the type of breeding and selection**

- (a) **Type of breeding** - Inbreeding ✓ (1)
- (b) **Type of selection** - Artificial selection ✓ (1)

4.5.2 Reason for inbreeding

- Mating of closely related animals ✓ (1)

4.5.3 TWO disadvantages of inbreeding

- Inbreeding depression/decrease in the performance of animals ✓
- Lead to the expression of lethal genes/deformities ✓
- Reduced vitality ✓
- Low resistance to diseases ✓
- Poor adaptability ✓
- Loss of variation ✓
- Undesired genes are made homozygous ✓ (Any 2) (2)

4.5.4 Method of selection

- Pedigree selection ✓ (1)

4.6 Genetic Modification (GM)**4.6.1 Hypothesis formulation**

GM results to more insect resistance in maize plants ✓

OR

GM results to less insect resistance in maize plants ✓

OR

GM has no impact on insect resistance in maize plants ✓

(1)

4.6.2 TWO socio-economic impacts of GM seeds to small-scale farmers

- They cannot afford the GM seeds because they are expensive ✓
- GM crops are protected by patent and farmers cannot retain seeds for breeding purpose ✓
- GM crops are engineered to be sterile, so farmers are forced to buy new seeds ✓

(Any 2)

(2)

4.6.3 TWO advantages of genetic modification over traditional methods

- It is fast ✓
- It is precise ✓
- It is not limited to organisms of the same species ✓

(Any 2)

(2)

4.6.4 TWO aims of genetic modified plants and animals

- Improving crop yield ✓
- Improving commercial properties/shelf life/flavour ✓
- Increasing the nutritional value of crops/biofortification ✓
- Producing pharmaceutical crops ✓
- Improving desirable characteristics ✓
- Producing industrial or consumer products ✓
- To develop animal models for studies of animal diseases ✓
- To increase quality of products ✓
- To increase resistance to diseases and pests ✓
- Improves tolerance to environmental conditions ✓
- Producing products for human therapeutic use ✓
- Improve herbicide resistance ✓

(Any 2)

(2)

[35]

TOTAL SECTION B: 105
GRAND TOTAL: 150