These marking guidelines consist of 9 pages.
SECTION A

QUESTION 1

1.1 1.1.1 C ✓✓
1.1.2 B ✓✓
1.1.3 C ✓✓
1.1.4 B ✓✓
1.1.5 A ✓✓
1.1.6 D ✓✓
1.1.7 A ✓✓
1.1.8 A ✓✓
1.1.9 D ✓✓
1.1.10 A/B ✓✓ (10 x 2) (20)

1.2 1.2.1 D ✓✓
1.2.2 G ✓✓
1.2.3 A ✓✓
1.2.4 F ✓✓
1.2.5 H ✓✓ (5 x 2) (10)

1.3 1.3.1 Balance sheet ✓✓
1.3.2 Collateral ✓✓
1.3.3 Heritability ✓✓
1.3.4 Incomplete dominance ✓✓
1.3.5 Monohybrid ✓✓ (5 x 2) (10)

1.4 1.4.1 Research/survey ✓
1.4.2 Labour ✓
1.4.3 Atavism/throwback ✓
1.4.4 Genetic engineering/modification/manipulation/GM ✓
1.4.5 Silencing ✓ (5 x 1) (5)

TOTAL SECTION A: 45
SECTION B

QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING

2.1 Entrepreneurship

2.1.1 Entrepreneurial success factors
A - Organisational/coordination abilities ✓
B - Technical/operational knowledge ✓
C - Innovative/creativity/vision/insight ✓
D - Perseverance ✓

2.1.2 THREE resources required for starting a business
• Financial ✓
• Human ✓
• Physical ✓

2.2 Development of marketing

2.2.1 TWO functions of marketing
• Packaging ✓
• Storage ✓
• Transportation ✓

2.2.2 Marketing type
Free marketing ✓

2.2.3 Reason
The farmer will be selling direct to the consumers and wholesalers/
no regulatory measures ✓

2.2.4 TWO problems of free marketing
• Competition ✓
• High marketing costs/marketing products/time spent expensive ✓
• Limited bargaining power ✓
• Over production/risk due to production decision ✓
• Price fluctuation ✓
• No regulations ✓

2.3 Marketing process

2.3.1 Marketing process illustrated
Marketing/supply-demand chain ✓

2.3.2 The highest paying consumer
Consumer C ✓

2.3.3 TWO reasons for paying the high price
• Processing cost ✓
• Transportation cost ✓
• Profit margins/intermediaries ✓
• Storage costs ✓
2.3.4 **TWO factors hampering marketing during transportation**
- Perishability/spoilage of the product ✓
- Accidents/physical damages ✓
- Bad roads limiting access to market ✓
- Theft ✓
- Bulkiness in relation to volume ✓
- Distance from the markets/wide distribution ✓
- Costs ✓
- Weather conditions/delays ✓

(Any 2) (2)

2.4 **Identification of the marketing approach**

2.4.1 Niche marketing ✓ (1)

2.4.2 Multi-segment marketing ✓ (1)

2.5 **Bar graph on sugar cane production**

2.5.1 A bar graph on the supply and demand of sugar cane from 2013 to 2016

![Bar graph on sugar cane production from 2013 to 2016](image)

**Criteria/rubric/markling guidelines**
- Correct heading ✓
- X-axis: Correctly calibrated and labelled (Time) ✓
- Y-axis: Correctly calibrated and labelled (Quantity) ✓
- Correct units (million tons and years) ✓
- Bar graph ✓
- Accuracy ✓ (6)
2.5.2 **TWO factors influencing the price of sugar cane**
- Supply ✓
- Demand ✓

2.6 **Business plan**

2.6.1 **Definition of a business plan**
It is a document ✓ that describes a business the entrepreneur wants/is intending to start ✓

2.6.2 **TWO reasons for drawing up a business plan**
- Test the feasibility and economic viability ✓
- Determination of the financial needs/budgeting ✓
- Guiding daily operations ✓
- To foresee problems/mistakes ✓
- Outlines the roles and responsibilities of people involved ✓
- Provides guideline for decision making ✓
- Identify opportunities ✓
- Provide information on internal/external business environment/competitors ✓
- It is a plan for capital requirements/secure funding ✓
- Provides analysis of the business and its activities ✓
- Also outlines time frames for completion of the tasks ✓ (Any 2)

2.6.3 **TWO problems encountered when drawing up a business plan**
- Conducting insufficient research/survey ✓
- Provision of too much unnecessary information/leaving gaps/being too vague ✓
- Putting unrealistic assumptions/projections ✓
- Not being able to identify the potential risks/hiding weaknesses/risks ✓
- Committing budget and cash flow errors ✓
- Use of incorrect format ✓ (Any 2)

**QUESTION 3 : PRODUCTION FACTORS**

3.1 **Analysis of an advert**

3.1.1 **Indication of the position for placement in JOB 1**
Position of a farm manager/manager ✓

3.1.2 **TWO reasons JOB 1**
- Qualification needed for the job ✓
- Analytical and conceptual skills required for the job ✓
- Financial management skills needed for the job ✓ (Any 2)
3.1.3 **Skills enabling candidate for JOB 1**

(a) Analytical and conceptual skills ✓

(b) Financial management skill ✓

(c) Interpersonal skill ✓

3.1.4 **Type of temporary labourer for JOB 2**

Seasonal ✓

3.1.5 **Reason**

Needed to operate a harvester which is done seasonally ✓

3.2 **HIV infections of farm workers over thirteen years**

3.2.1 **The trend of HIV infections over years**

Infections increased from 1998 until reaching peak in 2007 ✓ and decreased from 2007 to 2010 ✓

3.2.2 **Possible measures that might have resulted in trend after 2007**

- Provide awareness campaigns/education ✓
- Provision of access to condoms ✓
- Abstain from sex ✓
- Access to treatment to sexually transmitted disease ✓
- Support groups ✓

(Any 3)

3.2.3 **THREE impacts of HIV on the productivity of farm workers**

- Workers become sick/production declines/deadlines not met ✓
- Lack of energy to complete tasks ✓
- Absenteeism amongst infected workers/planning becomes difficult ✓
- Loss of skills and experience ✓
- Impacts negatively on healthy workers ✓

(Any 3)

3.3 **Measure to reduce labour problems**

3.3.1 Mechanisation/provision of leave/rest time/nutritional programmes/additional work force ✓

3.3.2 Provision of training/re-skilling ✓

3.4 **Scenario on capital**

3.4.1 **Type of capital from the scenario**

- Movable ✓
- Fixed ✓

(Any 1)
3.4.2 **Calculation of the amount to be repaid after a year at 11.5%**
- \( R340\ 000 - R180\ 000 = R160\ 000 \checkmark \)
- \( R160\ 000 \times 11.5\% = R18\ 400 \checkmark \)
- \( R160\ 000 + R\ 18\ 400 = R\ 178\ 400 \checkmark \)

(3)

3.4.3 **Total income of the enterprise for THREE months**
- Sale of eggs = \( R12\ 000 \times 4 = R48\ 000 \times 3 = R144\ 000 \checkmark \)
- Total income = \( R144\ 000 + R105\ 000 = R249\ 000 \checkmark \)

(2)

3.4.4 **TWO reasons to be able to repay the loan**
- The farmer is making a profit/surplus/R70 600 \checkmark \)
- The expected income for three months will be R 249 000 \checkmark \)
- A loan of R178 400 can be repaid even in 3 months \checkmark \)

(Any 2) (2)

3.5 **Strategic management**

3.5.1 **TWO reasons for developing a business strategy**
- To make business more profitable/more competitive \checkmark \)
- To enable the manager to adapt to changes/challenges that might occur in future \checkmark \)

(2)

3.5.2 **The steps in strategic management**
A - Developing business strategy/planning \checkmark \)
B - Mission \checkmark \)
C - Vision \checkmark \)
D - Goals and objectives \checkmark \)

(4)

3.6 **Scenario on land as a production factor**

3.6.1 **Method of increasing land productivity**
Zero till /Water management \checkmark \)

(1)

3.6.2 **ONE adaptation measure used to increase the land productivity**
No/zero till \checkmark \)

(1)

3.6.3 **A method to improve yields in the future**
Breeding of drought resistant cultivars/GM/developing hybrids \checkmark \)

(1) [35]

**QUESTION 4: BASIC AGRICULTURAL GENETICS**

4.1 **Illustration of incomplete dominance**

4.1.1 **Type of dominance**
Incomplete dominance \checkmark \)

(1)

4.1.2 **Motivation on the type of dominance**
- The offspring inherited none of the colours of the parents/ (No parent is dominant) \checkmark \)
- The offspring is grey/intermediate/neither black nor white \checkmark \)

(2)
4.1.3 Completion of the missing answers
(a) WW ✓
(b) BB ✓
(c) W ✓
(e) B ✓
(g) BW/WB ✓

4.2 GMO crop

4.2.1 TWO benefits of GM crops
• More productive/higher yields/improved commercial properties ✓
• Resistant to maize stalk borer/pest hence reduce the use of harmful chemicals ✓

4.2.2 Genetic modification of maize plants
DNA is extracted from the bacterium (Bacillus thuringiensis) ✓ transferred to a maize plant ✓ and the plant acquires resistance to maize stalk borer ✓

4.2.3 Negative effect on the environment of GM crops
• Creation of super weeds ✓
• Possibility to create pesticides resistant insects ✓
• Beneficial insects could be killed ✓
• Reduce biodiversity ✓

4.3 Schematic representation of line breeding

4.3.1 TWO common ancestors of individuals S and D
• 13 ✓
• 5 ✓
• 7 ✓

4.3.2 Benefits of upgrading to livestock farmers
• A new breed is gradually imported into the herd ✓
• Initial rapid results (50% improvement in first generation) ✓
• Deformities/unwanted characteristics occur less frequent ✓
• Economical way to raise the stock to a pedigree level ✓
• Less expert knowledge required ✓

4.4 Scenario on variation

4.4.1 The genetic phenomenon
Variation ✓

4.4.2 TWO possible external causes of the phenomenon
• Diseases/pests ✓
• Nutrients/feeding ✓
• Climate/temperature/rainfall ✓
• Environmental/soil ✓
4.4.3 Importance of this phenomenon
- Assists in selecting parents with the desired characteristics ✓
- Develop new cultivars/crop varieties ✓ (Any 1) (1)

4.5 Breeding systems

4.5.1 Suitable animal breeding system
Cross breeding ✓ (1)

4.5.2 Reason
There are two breeds involved/Nguni and Hereford breeds ✓ (1)

4.5.3 Motivation of the breeding system
- Leads to increased heterosis ✓
- Hybrid vigour/ better performance ✓
- Produces progeny that is hardy ✓
- Resistant to diseases ✓
- Progeny produce heavy early weaners ✓
- Increase in the genetic variation ✓ (Any 2) (2)

4.5.4 TWO disadvantages of inbreeding
- Leads to inbreeding depression ✓
- Increases the expression of lethal genes ✓
- Leads to deformed offspring ✓
- Causes the loss of genetic variation ✓ (Any 2) (2)

4.6 Estimated Breeding Value (EBV)

4.6.1 TWO characteristics for selection
- Birth weight ✓
- Slaughter weight ✓ (2)

4.6.2 TWO reasons
- Accuracy percentage is higher in both ✓
- Characteristics are highly reliable ✓
- Heritability is also high in both ✓ (Any 2) (2)

4.6.3 TWO importance of the Estimated Breeding Value
- The prediction of the performance of the progeny for a particular characteristic ✓
- Indicate the characteristic to select for based on performance ✓
- Help to estimate the rate of genetic progress in the breeding programme ✓ (Any 2) (2) [35]

TOTAL SECTION B: 105
GRAND TOTAL: 150