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 ✓

(Any 2)
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**

The supply and demand of sugar cane from 2013 to 2016

<table>
<thead>
<tr>
<th>Time (years)</th>
<th>Supply (million tons)</th>
<th>Demand (million tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>150</td>
<td>120</td>
</tr>
<tr>
<td>2014</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>2015</td>
<td>250</td>
<td>220</td>
</tr>
<tr>
<td>2016</td>
<td>200</td>
<td>150</td>
</tr>
</tbody>
</table>

**Criteria/rubric/markign 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)

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)

3.3 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) (1)
3.4.2 **Calculation of the amount to be repaid after a year at 11,5%**
- R340 000 – R180 000 = R160 000 ✓
- R160 000 x 11,5% = R18 400 ✓
- R160 000 + R18 400 = R178 400 ✓

3.4.3 **Total income of the enterprise for THREE months**
- Sale of eggs = R12 000 x 4 = R48 000 x 3 = R144 000 ✓
- Total income = R144 000 + R105 000 = R249 000 ✓

3.4.4 **TWO reasons to be able to repay the loan**
- The farmer is making a profit/surplus/R70 600 ✓
- The expected income for three months will be R 249 000 ✓
- A loan of R178 400 can be repaid even in 3 months ✓ (Any 2)

3.5 **Strategic management**

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

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

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

3.6.1 **Method of increasing land productivity**
Zero till /Water management ✓

3.6.2 **ONE adaptation measure used to increase the land productivity**
No/zero till ✓

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

**QUESTION 4: BASIC AGRICULTURAL GENETICS**

4.1 **Illustration of incomplete dominance**

4.1.1 **Type of dominance**
Incomplete dominance ✓

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

[35]
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