SECTION A

QUESTION 1

1.1  1.1.1  B ✓✓
     1.1.2  C ✓✓
     1.1.3  A ✓✓
     1.1.4  C ✓✓
     1.1.5  B ✓✓
     1.1.6  C ✓✓
     1.1.7  A ✓✓
     1.1.8  D ✓✓
     1.1.9  D ✓✓
     1.1.10 C ✓✓

     (10 x 2)  (20)

1.2  1.2.1  D ✓✓
     1.2.2  C ✓✓
     1.2.3  E ✓✓
     1.2.4  A ✓✓
     1.2.5  G ✓✓

     (5 x 2)  (10)

1.3  1.3.1  Budget ✓✓
     1.3.2  Equilibrium price ✓✓
     1.3.3  Capital ✓✓
     1.3.4  Biometrics ✓✓
     1.3.5  Epistasis ✓✓

     (5 x 2)  (10)

1.4  1.4.1  Marketing ✓
     1.4.2  Technical ✓
     1.4.3  Net Farm Income ✓
     1.4.4  Skilled ✓
     1.4.5  Breeding value ✓

     (5 x 1)  (5)

TOTAL SECTION A:  45
SECTION B

QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING

2.1 The illustration representing marketing strategy

2.1.1 Marketing strategies
A  A - Product ✓
B  B - Price ✓
C  C - Place ✓
D  D - Promotion ✓

2.1.2 TWO factors to consider when planning a product
• Quality ✓
• Design ✓
• Branding ✓
• Packaging ✓
• Size ✓
• Warranty ✓

2.1.3 TWO ways to implement the strategy
• Advertising ✓
• In-store promotion ✓
• Direct mailing ✓
• Trade fairs and exhibition ✓
• Sponsorship ✓
• Personal selling ✓

2.1.4 TWO aspects to consider when deciding on pricing
• Cost ✓
• Demand ✓
• Competition ✓

2.2 Marketing system

2.2.1 Identification of the marketing system
Co-operative marketing system ✓

2.2.2 THREE advantages of co-operative marketing
• Farmers (producers) will have a better chance to negotiate a good price for their produce ✓
• They will have an access to professional expertise ✓
• They can afford better infrastructure as a group than as individuals ✓
• They can buy fertiliser or packaging material cheaper ✓
• They can develop a brand for their produce which makes them more visible to the potential buyers ✓
• They can access funding from the government as a cooperative ✓
2.2.3 **TWO principles of co-operative marketing**
- Voluntary membership ✓
- Democratic member control ✓
- Member's economic participation ✓
- Autonomy and independency ✓

(Any 2) (2)

2.3 **Quantities of product 1 and 2 supplied**

2.3.1 **Formulation of hypothesis**
Producers may not increase the supply of agricultural product ✓ even when the price has increased in a short period of time ✓

OR
If the price of an agricultural product increases, ✓ the supply may not increase within a short period of time ✓

(2)

2.3.2 **Calculation of price elasticity of supply for product 1 and 2**
- Product 1 = \(\frac{13\%}{20\%}\) ✓
  \[= 0.65 \]

(2)

- Product 2 = \(\frac{39\%}{20\%}\) ✓
  \[= 1.95 \]

(2)

2.3.3 **Interpretation of price elasticity of supply for the two products**
- Supply for product 1 is inelastic ✓
- Supply for product 2 is elastic ✓

(2)

2.3.4 **TWO factors affecting supply of the products**
- Price ✓
- Possibilities of increasing the supply of goods/time ✓
- Technology ✓
- Production costs ✓
- Expectations of the future price ✓
- Environmental conditions ✓
- Subsidies ✓

(Any 2) (2)
2.4 **SWOT analysis**

2.4.1 **Use of SWOT analysis to identify the following**

(a) **TWO strengths**
- Availability of land ✓
- Services by an extension officer ✓
- Human resource ✓

(b) **ONE weakness**
- Lack of capital ✓
- Lack of skills ✓

(c) **ONE opportunity**
- Identified market ✓
- Services of the extension officer ✓

(d) **TWO threats**
- Unreliable weather ✓
- Competition from another project/Flourishing project in a nearby village ✓
- Lack of funds ✓
- Lack of skills ✓

2.4.2 **THREE actions to correct threats**
- Application of scientific methods/use of modern technology ✓
- Establishment of sound market chain ✓
- Consider processing and value adding ✓
- Source interest free funding and subsidies ✓
- Consider training; internships and voluntary hands on experience ✓

**QUESTION 3: PRODUCTION FACTORS**

3.1 **Land as a production factor**

3.1.1 **TWO characteristics of land**
- Land is subject to the law of diminishing return ✓
- Land is durable ✓

3.1.2 **Explanation of the law of diminishing return**
- More units of fertiliser ✓
- Did not result to proportional further increase the yield ✓

3.1.3 **TWO functions of land from the case study**
- It enables the production of food ✓
- It provides physical space for industry ✓
3.1.4 **TWO ways to increase productivity of land**
- Changing cropping systems/intercropping/adaptation to scientific methods ✓
- Restoring land potential/halting erosion ✓
- Consolidate small uneconomic land units ✓
- Improving water management/provision ✓

(Any 2) (2)

3.2 **Capital as a production factor**

3.2.1 **Explanation of the assistance of using a cash flow budget**
- It shows the flow of cash into and out of the farming operation ✓
- To determine the profit and loss ✓

(2)

3.2.2 **Monthly income**
- Sale of eggs = R8 000 per week x 4 = R32 000 ✓
- Sale of broilers = R12 500 per week x 4 = R50 000 ✓
  = R32 000 + R50 000 = R82 000 ✓

(3)

3.2.3 **Decision to continue with the business**
Farmer must continue with the business ✓

(1)

3.2.4 **Reason**
- Income is more than the expenditure ✓
- The business is run at a profit. (Profit is R43 000) ✓

(2)

3.2.5 **TWO forms of capital**
- Floating/working capital ✓
- Movable capital ✓

(2)

3.3 **Ability levels of farmers and farm workers**

3.3.1 **TWO skills of farm manager based on graph**
- Planning ✓
- Entrepreneurial ✓

(2)

3.3.2 **One important skill needed by the farm worker**
Technical skill ✓

(1)

3.3.3 **Justification of skill needed by the farm worker**
- Worker needs to perform practical activities ✓
- using hands ✓

(2)

3.3.4 **TWO management skills important to the farmer other than the skills in the graph**
- Financial ✓
- Communication and interpersonal ✓
- Problem-solving ✓
- Decision-making ✓

(Any 2) (2)
3.3.5 **TWO management principles**
- Planning ✓
- Motivation ✓
- Control ✓
- Implementation ✓
- Control ✓

3.4 **Labour Legislation**

3.4.1 *21 days leave of absence farm employees entitled to*
- Annual leave ✓

3.4.2 *4 months leave of absence female employees entitled to*
- Maternity leave ✓

3.4.3 *Leave of absence for flu*
- Sick leave ✓

3.5 **Labour**

3.5.1 **Calculation of worker payment during public holiday**
- \( \text{R111.72} \times 2 = \text{R223.44} \ ✓ \quad \text{OR} \quad \text{R111.72} \times 2 \times 3 = \text{R670.32} \ ✓ \)
- \( \text{R223.44} \times 3 = \text{R670.32} \ ✓ \)

3.5.2 **Deduction of a labour practice**
- Unfair labour practice ✓

3.5.3 **Justification of answer in QUESTION 3.5.2**
- Worker underpaid/worker received R270.32 less ✓
- Public holidays are double paid according to Public Holiday Act/allowance on public holidays is double the allowance of normal working days ✓

**QUESTION 4: BASIC AGRICULTURAL GENETICS**

4.1 **Growth rates between cattle breeds**

4.1.1 **Type of breeding system**
- Cross breeding ✓

4.1.2 **Parents that produced calves with highest average daily gain**
- Hereford bulls and Brahman cows ✓

4.1.3 **TWO reasons for better performance of these calves**
- Offspring have hybrid vigour/heterosis ✓
- Are better adapted to poor veld conditions/more hardy ✓
- Have a better feed conversion rate ✓
4.1.4

Criteria/rubric/marking guidelines
- Correct heading ✔
- X axis - correctly calibrated and labelled (number crossing) ✔
- Y axis - correctly calibrated and labelled (ADG) ✔
- Correct units (g/day) ✔
- Accuracy ✔
- Bar graph ✔

(6)

4.2 Inheritance

4.2.1 Type of inheritance controlling milk yield
Polygenic inheritance ✔

(1)

4.2.2 Milk yield of a Jersey cow with genotype AAbb
AA = 20 + 20 = 40 litres ✔
AAbb = 200 + 40 litres ✔
= 240 litres ✔

(3)

4.2.3 Phenotypic and genotypic ratio of F1-generation
AABB x aabb
AB x ab ✔
Genotype : 4 AaBb ✔
Phenotype : all producing 240 litres ✔

(3)

4.3 Inheritance

4.3.1 The phenomenon in QUESTION 4.3
Atavism ✔

(1)
4.3.2 **Reason**
- A recessive gene for red which was switched off and not expressed ✓
- In the phenotype in the past is now switched on and expressed ✓ (2)

4.3.3 **Alternative term for atavism**
Throwback ✓ (1)

4.4 **Selection and breeding**

4.4.1 **Differentiation between selection and heritability**

**Selection**
- is choosing of individuals for breeding purposes ✓
- due to superior characteristics ✓ (2)

**Heritability**
- is the degree to which the characteristics are determined ✓ by genetic factors ✓ (2)

4.4.2 **TWO advantages of a species crossing**
- They are hardy animals ✓
- They are drought animals ✓
- They are highly durable ✓ (Any 2) (2)

4.4.3 **TWO related breeding systems**
- Line breeding ✓
- Inbreeding ✓ (2)

4.4.4 **Importance of using EBV**
It indicates the heritability of a particular characteristic ✓
to predict the success of a breeding programme ✓ (2)

4.5 **Effects of mutagenic agents**

4.5.1 **Gamma and X-rays**
Damages DNA molecule and causes it to break ✓ (1)

4.5.2 **Metals**
Change the chemical structure of a DNA molecule ✓ (1)

4.5.3 **Alkaloids**
They prevent chromosome segregation ✓ (1)

4.5.4 **Viruses**
They insert their own DNA ✓ (1)

[35]

TOTAL SECTION B: 105
GRAND TOTAL: 150