education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

AGRICULTURAL SCIENCE P2

NOVEMBER 2006

This memorandum consists of 5 pages.

NAME ……..

Question 1.1 / Vraag 1.1

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

Question 1.3 / Vraag 1.3

1.3.1 **C**

1.3.2 **A**

1.3.3 **B**

1.3.4 **D**

1.3.5 **F**

Question 1.2 / Vraag 1.2

1.2.1	A	B	C	~~D~~
1.2.2	~~A~~	B	C	D
1.2.3	A	B	~~C~~	D
1.2.4	A	B	~~C~~	D
1.2.5	A	~~B~~	C	D

Question 1.4 / Vraag 1.4

A **E**

B **D**

C **C**

D **B**

E **A**

ION 2: SOIL SCIENCE

2.1.1 A - O-horizon
B - A-horizon
C- B -horizon
D- C –horizon
E- R –horizon
F- Soil profile (6)

2.1.2 Succession of layers in the soil (2)
[8]

2.2 Climate

Vegetation
Topography
Human
Time

(any 4)(4)

2.3. Primary minerals
- occur in the original form
- were formed in igneous rocks
- when molten rocks solidified

Secondary minerals
- chemical elements in primary minerals are regrouped
- during chemical processes
- to form new minerals with new properties (6)

2.4.1 clear crystal and very hard
2.4.2 form the sand fraction of soil
2.4.3 found in secondary rocks,
manufacturing lime or cement
2.4.4 forms lime-rich soils (4)

2.5 solid phase
gas phase (soil air)
liquid phase (soil water) (3)

2.6.1 Volcanic eruptions –molten rocks
Hot springs (2)
2.6.2 A- crust
B- semi –solid mantle
C- solid central metallic
D- liquid magma (4)
2.6.3 Great pressures and high temperatures,
because of earths crust are shifted (2)
2.6.4 Material was deposited periodically by wind water or glasier action (2)
[10]

QUESTION 3: PLANT SCIENCES

3.1.1 Forage crops be harvested and sold for an income eg. lucern (2)
3.1.2 Buffalo grass, Smuts finger Grass, Borseltjie Grass (any 2)(2)
3.1.3. Water
Temperature
Sunlight (3)
[7]

3.2.1 Peas, Beans (1)
3.2.2 Cabbage, Spinach, lettuce (1)
3.2.3 Onions (1)
3.2.4 Tomato (1)
[4]

3.3 Tropical
Sub-Tropical
Deciduous fruits

Grapes (4)

3.4.1 Maize gross value is the highest of all the field crops and 2nd highest in the production table. (4)
3.4.2 Sugar cane and its product are known as sugar. (2)
3.4.3 The Liter is an indication of the wine that is produced. (2)
3.4.4 Many of our deciduous fruits is been exported and that bring in foreign money. (2)

3.5.1 Soil - Most crops require deep soils for proper root development. Loam soils are the best for crop production. (2)
3.5.2 Temperature – Crops differ in its temperature requirements some crops need cold temperatures to produce the following season. Most crops cannot produce in to hot temperatures. Ideal soil temperature is 25° C. (2)
3.5.3 Rainfall – Crops water requirements differ and are therefore better adapted to certain areas. If there is too little water the crop must be irrigated. (2)
[6]

3.6 Wheat, Barley, Oats, Rye. (any 3) (3)

/**35**/

QUESTION 4: OPTIMAL RESOURCE UTILIZATION

4.1 Soil Degradation: Damage or harm done on soil through various practices by man **(2)**

4.1.1 **Causes:**

- Soil erosion
- Salination
- Water logging
- Loss of nutrients
- Pesticide pollution
- Build up of pests and diseases
- Cultivation **(three only)** **(3)**

4.2.1 Agricultural resource: Substances that we use in agricultural production Process to achieve a specific goal, product **(2)**

4.2.2 **Important Resources:**

- Soil
- Water
- Wind/Air
- Vegetation **(5)**

4.2.3 **Primary Resource:** Resources that are entirely produced by nature
Secondary Resources: Resources that have been made from natural ones by man **(4)**

4.3 Prevention of soil erosion

- Always keeping land covered with crops, vegetation
- Practicing crop rotation and rotational grazing system
- Mulching
- Putting the correct number of animals in a piece of land
- Soil classification and soil grouping into soil utilization classes
- Incorporating organic matter into the soil

(5)

4.4 1 To preserve them for future use, to sustain the future generations **(2)**

4.4.2 **Results of poor decisions**

- Soil loss
- Nutrients eroded into the sea
- Billions of money spent on artificial fertilizers **(3)**

4.4.3 **Solutions**

- Farming in harmony with nature
- Veld reclamation scheme
- Applying contour ridges
- Avoiding farming practices that damage the soil
- Advising farmers on how to utilize, cultivate, protect and manage their land.

(three only) **(3)**

4.4 Wise water use

- Use only water that is needed
- Avoiding water wastage
- Use of the right irrigation equipment and methods
- Practicing minimum tillage
- Removal alien trees
- Use of natural fertilizers where possible
- Do not exceed the amount of fertilizers required
- Avoid spraying pesticides in windy or rainy conditions
- Avoid piling crop residues close to rivers **(four only)** **(4)**

4.5 Natural resource legislation
Conservation of Agricultural resources Act **(2)**

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Section A	**45**
Section B	**105**
GRAND TOTAL	**150**