



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

LIFE SCIENCES P2

NOVEMBER 2006

This memorandum consists of 9 pages.

SECTION A

1.1

1.1.1 A✓✓

1.1.2 B✓✓

1.1.3 B✓✓

1.1.4 A✓✓

1.1.5 D✓✓

1.1.6 C✓✓

(6x2) (12)

1.2

1.2.1 Autotrophs✓/producers

1.2.2 Transpiration✓

1.2.3 Fossil✓

1.2.4 Bacteria✓

1.2.5 Biotic✓

1.2.6 Mutualism✓

1.2.7 Extinct✓

1.2.8 Precipitation✓/rain/dew/mist/snow

(8x1) (8)

1.3

1.3.1 J✓

1.3.2 F✓

1.3.3 H✓

1.3.4 G✓

1.3.5 C✓

1.3.6 K✓

1.3.7 I✓

(7x1) (7)

1.4

1.4.1 Organisms that depends on another living organism for food ✓ (1)

1.4.2 Hooks and suckers✓

Enzyme-resistant covering✓

High number of eggs✓

(Mark first THREE only)

(3)

1.4.3 Flat bodies to move between hair ✓

Powerful legs to jump far✓

Thick mouthparts to cut through the skin of host✓

Mouthparts specialised for sucking blood✓

Release of sticky substance to cling✓

(Mark first TWO only)

any (2)

(6)

- 1.5
- 1.5.1 (a) 37°C ✓ (2)
- (b) 3 ✓ (1)
- (c) $(35,8 - 36)^{\circ}\text{C}$ (1)
- 1.5.2 Thursday ✓ (3)
- Accept any answer between 12 am – 1 am. ✓
- 1.5.3 Sweating cools of the body ✓ after a fever attack ✓ (2)
- (9)
- 1.6.1 Woodlice prefer to stay ✓ in light ✓ (2)
- 1.6.2 All conditions were identical ✓ except that the woodlice were put in the dark chamber ✓ (2)
- 1.6.3 The hypothesis ✓ is rejected ✓ (2)
- 1.6.4 Repeat ✓ the experiment several times ✓ (2)
- (8)

TOTAL QUESTION 1: 50
TOTAL SECTION A: 50

QUESTION 2

2.1

2.1.1 Slightly✓ polluted (1)

2.1.2 Indicator organisms✓/ flatworm /dragon fly for slightly polluted are present✓

OR

Indicator organisms✓/ water snail for moderately polluted are present✓ (2)

2.1.3 Badly polluted✓ (1)

2.1.4 Set a hypothesis/prediction✓

Decide on area for water investigation and get all necessary apparatus✓

Stir the bottom of the sampling area✓

Turn over all stones in the sampling area ✓

Sample through the water with a net and place organisms in beakers✓

Identify organisms✓

Count numbers of each species✓

Record findings✓

Make a conclusion✓ any (4)

2.1.5 Not putting harmful substances✓ in the water

Not dumping rubbish in the water✓ any (2)
(10)

2.2

2.2.1 Vulnerable, ✓ threatened endangered✓ and critically endangered✓ species any (2)

2.2.2 Black rhinoceros✓/ Cape Zebra/ African wild dog/Oribi
(Mark first ONE only) (1)

2.2.3 Plants or animals that are originally occurring in that country ✓ (1)

2.2.4 National conservation parks✓
(Mark first ONE only) (1)
(5)

2.3

2.3.1 Marasmus✓/kwashiorkor /beri-beri/ scurvy/rickets
(Mark first ONE only) (1)

2.3.2 Marasmus/kwashiorkor – protein✓ limitation✓

OR

Beri-beri/ scurvy/ rickets - Vitamin and mineral✓ limitation✓ (2)

- 2.3.3 Feeding scheme at schools in poor communities that includes protein food✓
 Soup kitchens to feed homeless children✓
 Subsidised balanced meals to poor families like providing food parcels
 monthly✓
 Education of people on a balanced diet✓
(Mark first TWO only) any (2)
(5)
- 2.4
- 2.4.1 Body form – slim for easy movement in water✓
 Web Feet ✓
 Breathing mechanism and techniques✓- air pockets
 Adaptations to float or attached in fast flowing water
(Mark first THREE only) any (3)
- 2.4.2 Floating mechanisms – bubbles in stem and leaves✓
 Flat big leaves✓
 Small root system ✓
(Mark first THREE only) any (3)
(6)
- 2.5.1 Example:
 Exploitation of the fish✓ resource by over-fishing✓ (2)
(Any other suitable example)
- 2.5.2 Quota ✓assigned to fisherman and to commercial fishing✓every year (2)
(4)

TOTAL QUESTION 2: 30

QUESTION 3

3.1

- 3.1.1 (a) D✓ (1)
Live in pH of 4✓ – 8.5 ✓/ both acidic and alkaline conditions (2)
- (b) A✓ and C✓ (2)
- (c) B✓ (1)

3.2

- 3.1.2 Air✓/water
(Mark first ONE only) (1)
(7)

- 3.2.1 Available ✓ all year around✓
OR
To buy and eat✓ all year round✓ (2)

- 3.2.2 Expensive✓ and dangerous✓/harm people (2)

- 3.2.3 Smoke ✓ can come out to kill the insects✓
OR
Great heat✓ to bake the soil/dry soil✓ (2)

- 3.2.4 Pit was a hole in the ground✓ and silos built with concrete✓ (2)

- 3.2.5 Both have carbon dioxide✓
OR
Both have dry conditions (1)

- 3.2.6 Frozen✓/canned✓/dried✓ any (2)
(11)

3.3

- 3.3.1 Aspect✓ position of an area in relation to the sun✓/direction a slope faces
Slope✓ the incline of the soil which influences the run off of water✓
Altitude✓ height above sea-level✓
(Mark first TWO only) any 2 x 2 (4)

- 3.3.2 South✓ (1)
get more✓ sunlight✓ (2)

3.3.3

	North	South
(a)	Less water/drier✓	More water/wetter✓
(b)	Less plants✓	Greater abundance of plants✓

(Mark FIRST difference only) 2 x 2 (4)

+ 1 table (1)

(12)

TOTAL QUESTION 3: 30

QUESTION 4

4.1.1 25°C (2)

4.1.2 Production of food ✓ e.g. fruit ✓ /raisins
Produce alcoholic beverages ✓ e.g. wines ✓
Export ✓ to generate income ✓
(Mark first TWO only) any 2 x 2 (4)

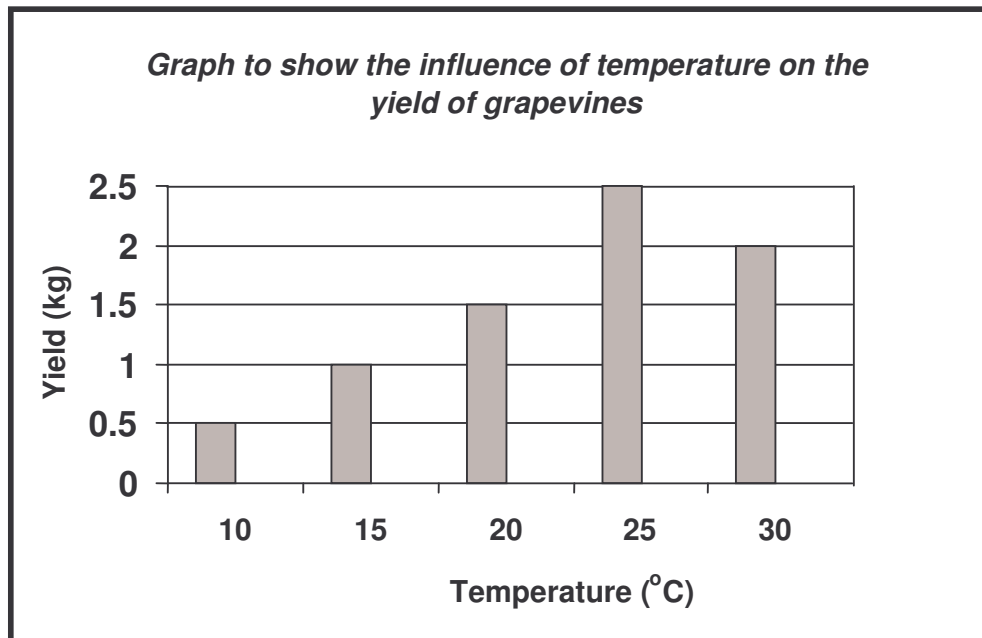
4.1.3 (a) Mass of the grapes ✓ (1)

(b) Temperature ✓ (1)

4.1.4 $1,5 \times 1\,000$ ✓
 $= 1\,500$ ✓g ✓ (3)

4.1.5 The higher the temperature ✓ the higher the yield ✓ until optimum
temperature ✓ / 25°C a further increase in temperature ✓ lowers the yield ✓
any (3)

4.1.6



Correct type of graph	1
Title of graph	1
Correct choice and label for x - axis	1
Correct choice and label for y – axis	1
Correct unit for yield	1
Correct unit for temperature	1
Appropriate scale for x- axis (constant intervals)	1
Appropriate scale for y- axis (constant intervals)	1
Plotting of bars	3: plotted all 5 bars correctly; 2: plotted 3 or 4 bars correctly; 1: plotted 1 or 2 bars correctly

(11)
(25)

- 4.2 The learners must give their viewpoints on the negative impact by pharmaceutical companies on the environment and indigenous communities.

Examples of negative impact:

- use of indigenous knowledge, without acknowledging the source
- removal of too many plants
- use of indigenous knowledge without economic benefit to holder of the original idea
- remuneration too less compared to the value of species
- exploitation of the resources/harm ecosystem

Ways to reduce the negative impact:

- Management of the resource to become sustainable
- education of people on the value of the resource
- acknowledgement of the indigenous knowledge of communities
- remuneration on the patents
- establishment of nurseries to sustain the resource
- occurrence of the resource in its natural habitat
- maintaining of nurseries

CONTENT PRESENTATION:

Criteria	Scores			
	0	1	2	3
Viewpoint on negative impact	Views not stated	One view stated	Two views stated	Three views stated
Explanation on negative impact	No explanation given	One explanation given	Two explanations given	Three explanations given
Ways to reduce impact	None mentioned	One view stated	Two views stated	Three views stated
Explanation on ways to reduce impact	No explanation given	One explanation given	Two explanations given	Three explanations given
Synthesis	Not attempted/nothing written other than question number	Attempted but with significant gaps in the logic and flow of the answer	Minor gaps in the logic and flow of the answer	Well structured, demonstrates insight and understanding of question

TOTAL QUESTION 4: 40

TOTAL SECTION C: 40

FINAL TOTAL : 150