

**GRADE 12  
LIFE SCIENCES  
CONTROL TEST 3  
28 August 2017**

Total: 75  
Time: 75 minutes

	Possible marks
Section A:	20
Section B:	25
Section C:	30
Total:	75

**Instructions:**

Read the following instructions carefully before answering the questions.

- Answer ALL questions of SECTION A, B and C.
- Write ALL the answers in your ANSWER BOOK.
- Start the answers to each question at the top of a NEW page.
- Number the answers according to the numbering system used in the question paper.
- Present your answers according to the instructions of each question.
- ALL drawings should be done in pencil and labelled in blue or black ink.
- Draw diagrams, flow charts or tables only when asked to do so.
- The diagrams in this question paper are NOT necessarily drawn to scale.
- You must use a non-programmable calculator, protractor and compass where necessary.
- Write neatly and legibly.

This paper consists of 8 pages and 4 questions.

**SECTION A**

**QUESTION 1**

1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A to D) next to the question number (1.1.1 to 1.1.5), for example 1.1.1 D.

- 1.1.1 Eutrophication is caused by...
  - the run-off of fertilisers from farms
  - plastic and rubbish pollution
  - the decomposition of organic material
  - poisoning of water by blue-green algae

(2)
- 1.1.2 Alien invasive plants out-compete indigenous plants and reduce biodiversity in the following way:
  - Aquatic invasive plants block rivers, release toxins and use up oxygen and light.
  - They have natural predators which feed on indigenous plants
  - They grow slower but sturdier/longer
  - Indigenous animal species don't prefer to eat their fruits or seeds, with the result that they grow less

(2)
- 1.1.3 Which of the following descriptions is TRUE about endocrine glands?
  - Glands with ducts that release hormones
  - Glands with ducts that release enzymes
  - Glands that release hormones directly into the blood
  - Glands that release enzymes directly into the blood

(2)
- 1.1.4 The most common effects of mining wastes on water quality include:
  - increased salinity
  - increased sediment load
  - increased acidity
  - increased metal content

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**SECTION B**

**QUESTION 2**

2.1 Read through the following abstract and answer the questions that follow.

**U.N. food agency warns 140 million face hunger in Southern Africa**  
About 140 million people face hunger in Southern Africa because of a drought that has been exacerbated by an El Niño weather pattern (a warming of ocean surface temperatures) according to the United Nations World Food Programme (WFP). South Africa faces its worst drought in decades after 2015 was the driest calendar year since records began in 1964. Cape Town is at a dire state that means that the country has to import up to 6 million tons of maize over half of its consumption needs. Maize prices in South Africa hit record highs. "One particular worrying symptom of Southern Africa's vulnerability to food and nutrition security is the alarming rate of chronic malnutrition."

Adapted from WFP/IFPRI via SABC News on Monday 10 January 2017

- 2.1.1 What is "El Niño"?
- 2.1.2 Describe how human activities could negatively influence climate that causes drought and how it influences food security.
- 2.1.3 South Africa is a semi-arid country. With the recent drought, a lot of strain was put on our water availability. Suggest THREE ways in which South Africans can increase the water availability in the future.
- 2.1.4 Use the information above and predict how South African consumers will be affected by the drought.
- 2.1.5 Write a short paragraph to highlight the main problem the world is facing as a result from the cartoon. Mention TWO ways in which it can probably be solved.



(5)

TOTAL QUESTION 2: 15

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- A (5), (6) and (4)-only
- B (5), (6) and (4)-only
- C (6), (8) and (4)-only
- D (5), (6) and (4)

(2)

1.1.5 Genetically modified crops are important because.....

- they have different genes
- they have desirable characteristics for improved crop yields
- they need more pesticides
- they don't need water to grow

(2)

(5+2+2)

1.2 Give the correct biological term for each of the following descriptions. Write only the term next to the question number.

- 1.2.1 Organic chemical messengers that all have an effect on target organs.
- 1.2.2 The (large) removing of plants or animals from the wild.
- 1.2.3 The maintenance of the body's internal environment.
- 1.2.4 The addition of something to the ecosystem that has a detrimental effect on it.
- 1.2.5 An area of land that is partly covered by water for some or all of the year.

(5+1+1)

1.3 Choose the correct description from Column B that suits the term in Column A. Only write the correct letter next to the question number. Example 1.3.1 F.

Column A		Column B
1.3.1	TSH	A Stimulates the adrenal glands
1.3.2	Androgens	B Stimulates follicle growth
1.3.3	FSH	C Develops secondary sexual characteristics
1.3.4	ADH	D Stimulates the release of oxytocin
1.3.5	Testosterone	E Influences the maturing of cell
		F Enables the body to respond to an emergency
		G Influences maturing of water
		H Stimulates the thyroid gland

(5+1+1)

Total Section A: 28

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