

LIFE SCIENCES: PAPER II

EXAMINATION NUMBER

--	--	--	--	--	--	--	--	--	--	--	--

ANSWER BOOKLET

There are (vii) pages in this booklet.

QUESTION 1

Answer this question in the spaces provided. Place this Answer Booklet inside the Answer Book in which you answer the rest of the examination paper.

- 1.1 Select the term in Column B that best matches a description in the Column A. Write the letter of the matching term in the corresponding space provided between the brackets. Each letter may only be used once.

Column A

- [] Female hormone secreted by the ovary
- [] Rapid increase in the levels of this hormone causes ovulation
- [] Gland at the base of the male bladder
- [] Place where fertilisation normally occurs in humans
- [] Main function is to protect the foetus
- [] A fertilised egg
- [] Provides nutrients and oxygen to the foetus
- [] An organ enclosed by the scrotum
- [] Lining of the uterus
- [] Stimulates development of male characteristics

Column B

- A Amniotic fluid
- B Progesterone
- C Zygote
- D Endometrium
- E Prostate gland
- F Placenta
- G Testosterone
- H Epididymis
- I FSH
- J LH
- K Oviduct
- L Testis
- M Vagina

- 1.2 Six multiple choice questions are given below. Choose the most correct alternative in each question and write the letter in the space provided in the table.

Question	1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6
Answer						

- 1.2.1 Which item is NOT true of a population?

A population is a group of organisms

- A of the same species.
- B that live in a variety of areas at a specific time.
- C that are able to breed with one another.
- D that live in a particular area.

(1)

- 1.2.2 The maximum number of individuals of a species that a particular habitat can support is known as the:

- A stable population.
- B birth rate.
- C carrying capacity.
- D environmental resistance.

(1)

- 1.2.3 The following features are involved in intraspecific competition in wild dogs:

- (i) Weak genes can be eliminated from the species.
- (ii) It occurs between wild dogs and other predators.
- (iii) The alpha female and male may be removed by stronger dogs.
- (iv) The pack uses cooperative tactics when hunting.

Which of the following combinations is correct?

- A (i), (ii) and (iv)
- B (i) and (iii)
- C (ii), (iii) and (iv)
- D (iii) and (iv)

(2)

- 1.2.4 An investigation is to be carried out at a landfill site. The biologist will study the ecological succession at the site. Observe the pictures below which are not drawn to scale.



Using your knowledge choose the expected order in which succession will occur on the site.

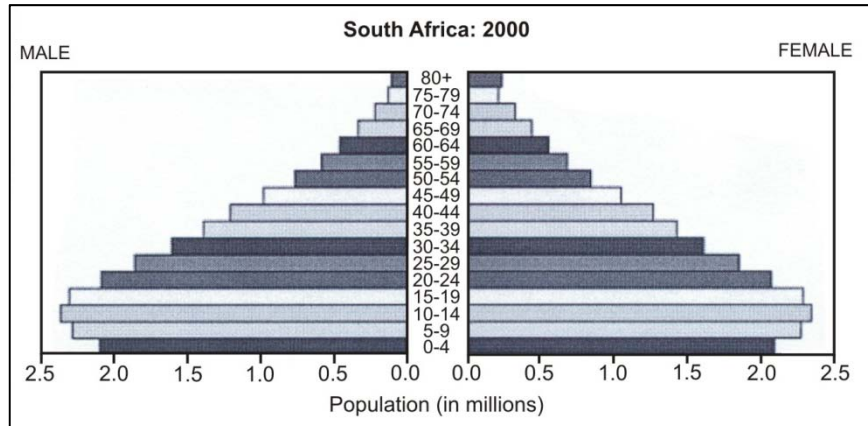
- A (ii), (iii), (iv), (i)
- B (iv), (ii), (i), (iii)
- C (ii), (iii), (i), (iv)
- D (i), (ii), (iii), (iv)

(2)

Study the Age-Gender population graphs below and use the information to answer Question 1.2.5 and 1.2.6.

South Africa Population Pyramid for 2000

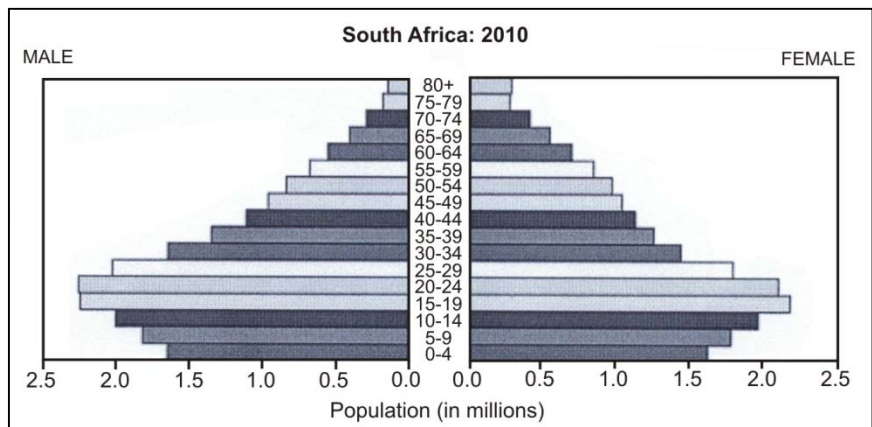
Age and sex distribution for the year 2000



[Source: US Census Bureau, International Data Base]

South Africa Population Pyramid for 2010

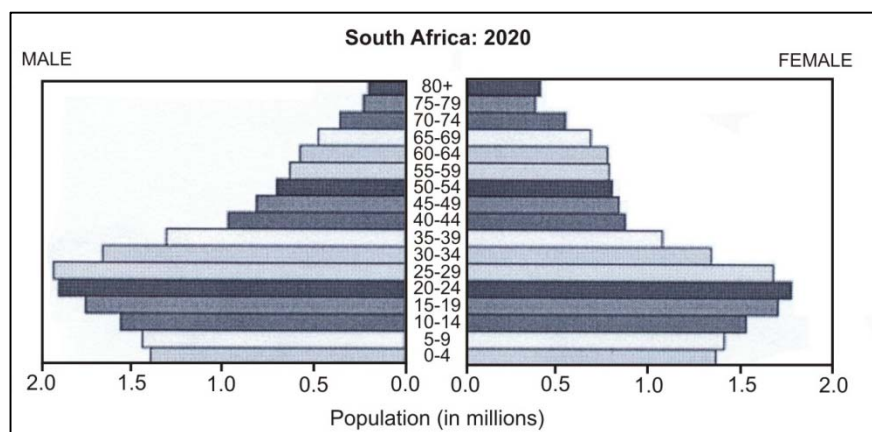
Age and sex distribution for the year 2010



[Source: US Census Bureau, International Data Base]

South Africa Population Pyramid for 2020

Age and sex distribution for the year 2020



[Source: US Census Bureau, International Data Base]

1.2.5 According to 'Statistics Africa' it is stated that there were approximately 50 000 000 people in South Africa in 2010. What percentage of the population was your age group (15 – 19 yr olds) in 2010?

- A 11%
- B 90%
- C 9%
- D 7%

(2)

1.2.6 Study the trends that are shown between 2000, 2010 and 2020. Which option best describes the conclusions that can be reached?

- A The 2000 pyramid is typical of a developing country whilst it is predicted that by 2020 the South African population is declining.
- B Over 20 years the female life expectancy decreases.
- C The ratio of male to female births changes.
- D The 15 – 19 age group of 2010 will be the 25 – 29 age group in 2020 and their numbers will have increased.

(2)

1.3 Give the correct biological term for each of the following descriptions. Write the term on the line provided.

A sticky fluid containing secretion produced by glands and mixed with sperm.

Release of fluids and sperm by the penis.

Organ containing a Graafian follicle.

Swelling of the penis with blood when sexually aroused.

(4)

- 1.4 Study the following table which consists of two items (numbered 1 and 2) in the first column and a statement in the second column.

Decide which item/s relate to the statement.

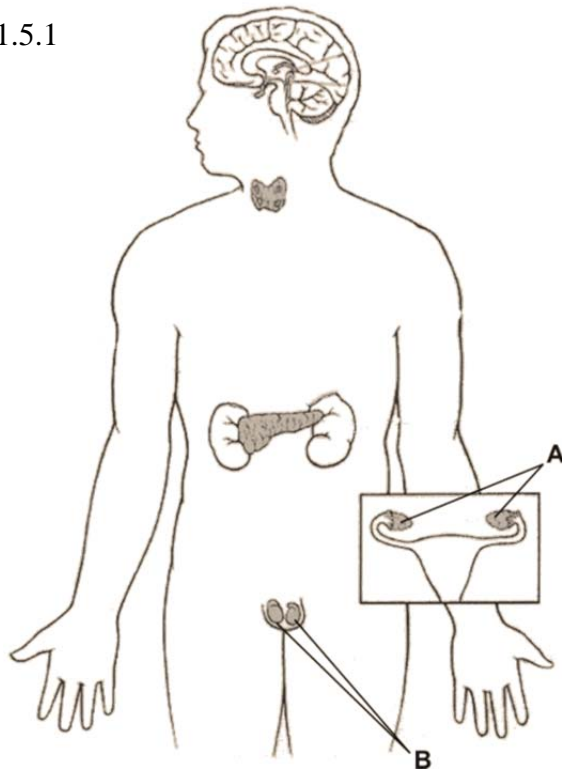
Write down your choice, in the space provided, making use of the following codes:

- A only item 1 is related to the statement
 B only item 2 is related to the statement
 C both item 1 and 2 relate to the statement
 D neither item 1 or 2 relate to the statement

Answer	Item	Statement
	1. Glucagon 2. Insulin	Converts glucose into glycogen
	1. Controlled by aspects of the nervous and endocrine systems. 2. Effectors respond by adjusting the levels of the substance to restore balance.	Negative feedback
	1. ADH 2. Growth Hormone	Controls the rate of metabolism
	1. Thyrotropin (TSH) 2. Thyroxine	Is secreted by the pituitary gland
	1. Glucagon 2. Adrenaline	Very high levels of blood sugar stimulates the release of this

(5)

- 1.5 1.5.1

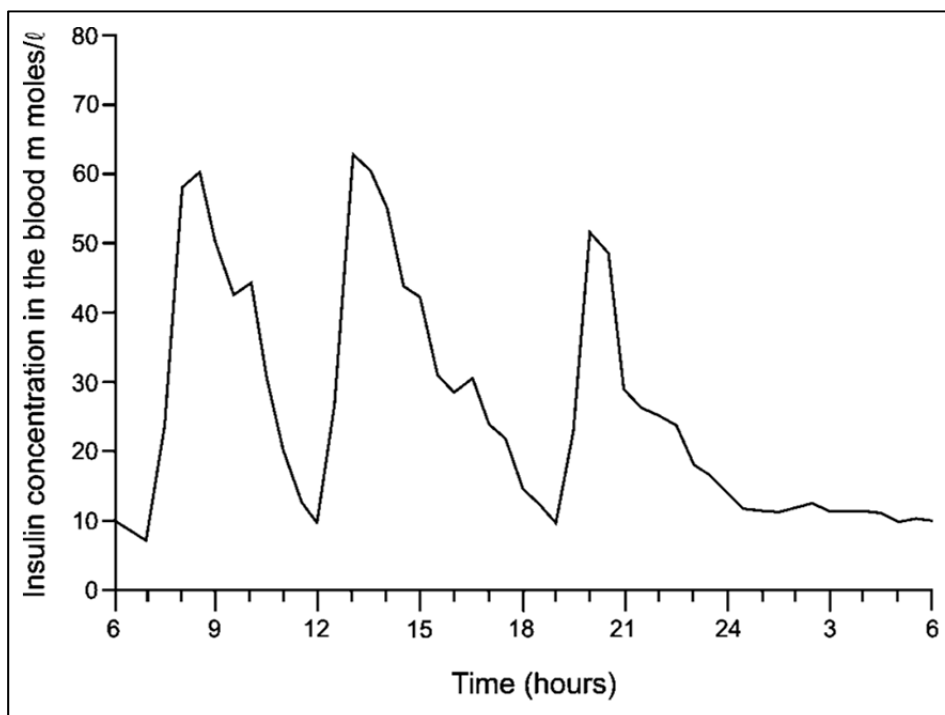


Complete the diagram on the previous page by adding the following:

- | | | |
|-------|--------------------|-----|
| (i) | A title | (1) |
| (ii) | The adrenal glands | (1) |
| (iii) | Labels for A and B | (2) |

1.5.2 The graph below shows:

Normal insulin production in a human over a 24 hour period.



(a) What is the normal level for insulin in a healthy person at night?

_____ (2)

(b) Mark the graph clearly with an **X** to show when the person has consumed a meal.

(1)

(c) Suggest a possible reason why the insulin level after a meal at 20h00 was lower than after other meals.

(2)

(d) What advice would you give an overweight friend who has just been diagnosed with diabetes?

(2)

[40]