



Basic Education

KwaZulu-Natal Department of Education
REPUBLIC OF SOUTH AFRICA

LIFE SCIENCES

COMMON TEST

MARCH 2015

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

MARKS: 60

TIME: 1 hour

N.B. This question paper consists of 8 pages.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions:

1. Answer ALL the questions.
2. Write ALL the answers in the ANSWER BOOK.
3. Start the answer to EACH question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
6. ALL drawings should be done in pencil and labelled in blue or black ink.
7. Draw diagrams, flow charts or tables only when asked to do so.
8. The diagrams in this question paper are NOT necessarily drawn to scale.
9. Do NOT use graph paper.
10. You must use a non-programmable calculator, protractor and a compass where necessary.
11. Write neatly and legibly.

SECTION A**QUESTION 1**

1.1 Various possible options are provided as answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (1.1.1 – 1.1.5) in the answer book, for example 1.1.6 D.

1.1.1 Which ONE of the following is present in the Bryophytes?

- A. Seeds
- B. Xylem
- C. Spores
- D. Flowers

1.1.2 Viruses are regarded as non-living because ...

- A. they are very small.
- B. they do not mutate.
- C. they can only reproduce when in another living organism.
- D. they do not have any nucleic acid.

1.1.3 A bacterial cell ...

- A. reproduces sexually.
- B. is a prokaryote.
- C. is a eukaryote.
- D. contains mitochondria, vacuoles and plastids.

1.1.4 Which of the following is a feature of an insect-pollinated flower?

- A. Petals are large and brightly coloured
- B. Large anthers with long filaments
- C. Small, light and smooth pollen
- D. Stigmas are large and feathery

1.1.5 Which of the following is characteristic of the fungi?

- A. Do not produce spores
- B. Produce cones
- C. Produce seeds
- D. Do not possess chlorophyll

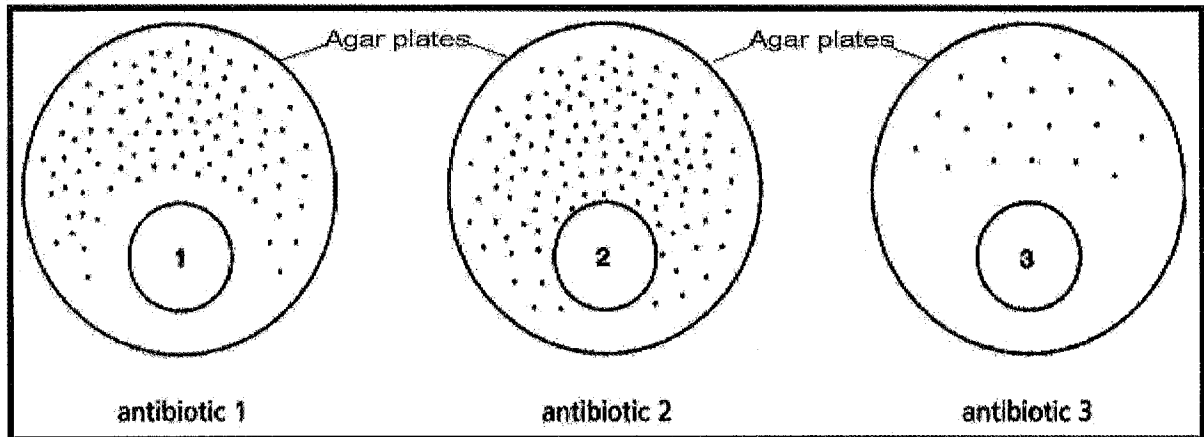
(5 x 2) (10)

Total Section A (10)

SECTION B**QUESTION 2**

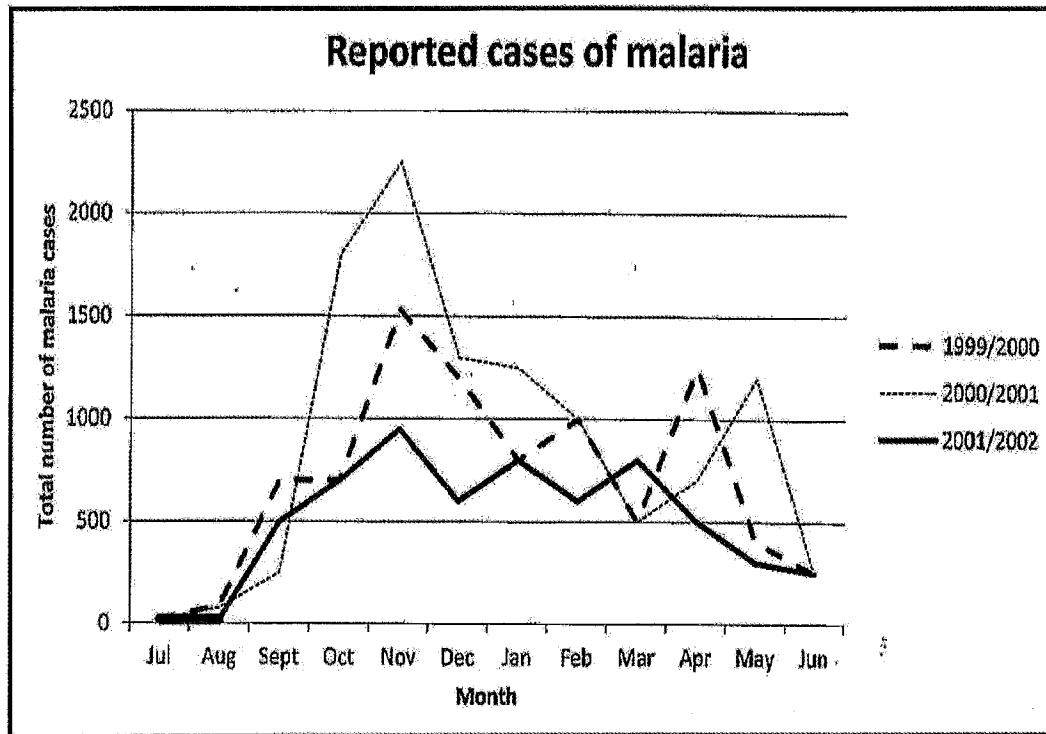
- 2.1 Grade 11 learners wanted to compare the effect of different antibiotics on the growth of a bacterial species.

They set up agar plates containing nutrients as shown in the diagrams below. They placed sterile discs (1, 2 and 3) containing three different antibiotics on each of the plates. The dots represent the bacteria.



- 2.1.1 Identify the following in the investigation:
- (a) The dependent variable (1)
- (b) The independent variable (1)
- 2.1.2 Formulate a hypothesis for this investigation. (2)
- 2.1.3 Which of the antibiotics (1, 2 or 3) was least effective? (2)
- 2.1.4 State TWO ways in which learners could improve the reliability of this investigation. (2)
- 2.1.5 Which TWO factors must be kept constant in this investigation? (2)
- (10)**

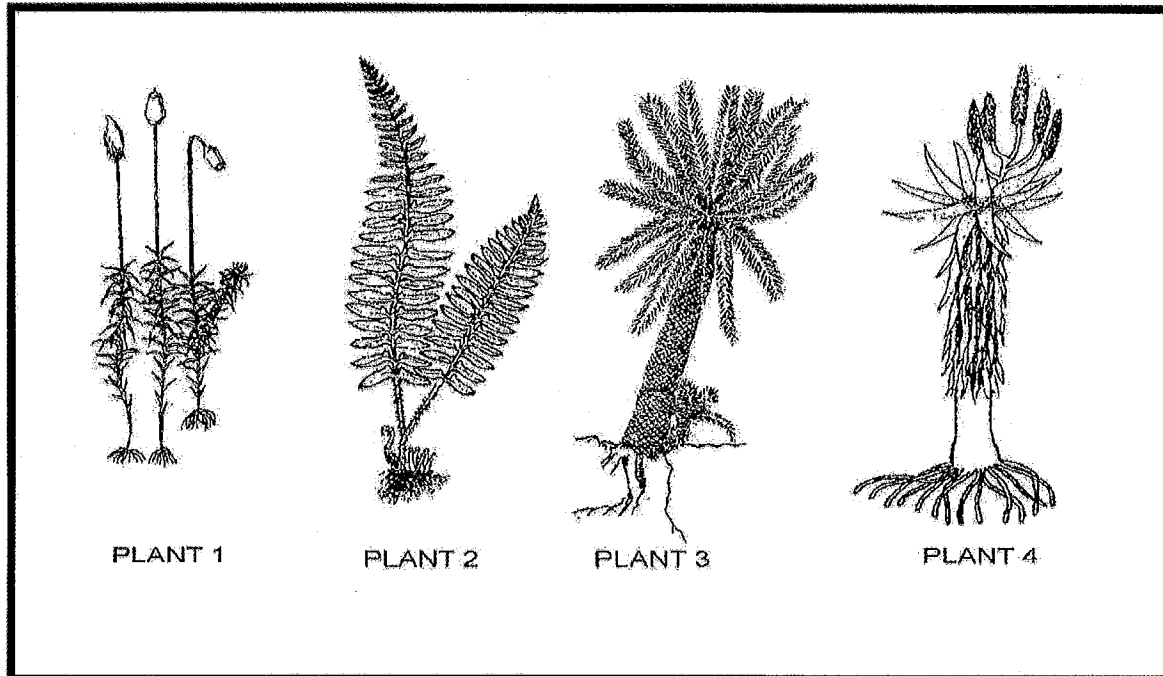
- 2.2 Study the graph below which shows the number of malaria cases reported in Limpopo between 1999 and 2002.



- 2.2.1 In which month, in the period 1999/2000, was the highest number of malaria cases reported? (1)
- 2.2.2 How many cases of malaria were reported in the month of March 2000/2001? (1)
- 2.2.3 Suggest ONE way in which the data about the number of malaria cases was collected. (1)
- 2.2.4 Explain why an increase in the number of malaria infections would affect the South African economy. (2)
- (5)**
- [15]**

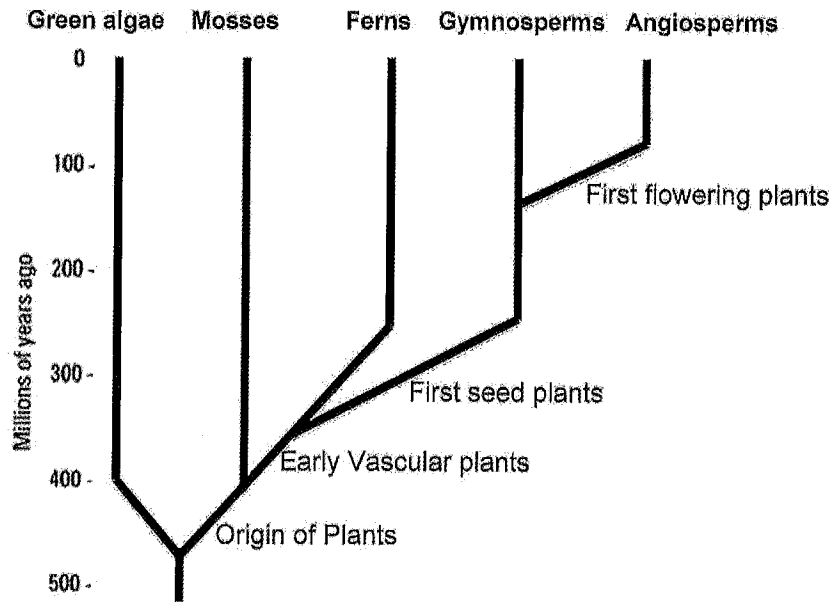
QUESTION 3

3.1 Study the diagrams and answer questions that follow.



- 3.1.1 Which ONE of the plant groups (2, 3 or 4) are dependent on water for fertilisation? (1)
- 3.1.2 State TWO characteristics of the group represented by **Plant 1** that prevent them from being as tall as the group represented by **Plant 3**. (2)
- 3.1.3 State which generation is dominant in:
- (a) **Plant 1**
- (b) **Plant 4** (2)
- 3.1.4 Explain why the presence of flowers in the group represented by **Plant 4** have made them more successful as compared to the group represented by **Plant 3**. (2)
- (7)

- 3.2 Study the phylogenetic tree showing possible relationships amongst the different plant groups.



- 3.2.1 According to the phylogenetic tree:

- (a) How long ago did the mosses first appear (1)
- (b) How long after the mosses did the first ferns appear (1)
- (c) Which was the most recent plant group to appear on earth (1)
- (d) What characteristic do ferns, gymnosperms and angiosperms have in common (1)

- 3.2.2 Name TWO plant groups represented that produce seeds. (2)

- 3.2.3 List TWO characteristics of seeds that make seed-bearing plants more successful over seedless plants. (2)

(8)

[15]

Total Section B (30)

SECTION C**QUESTION 4**

Describe how the body plan of named examples of Cnidaria and Annelida relates to the mode of life of each organism.

NOTE: No marks will be awarded for answers in the form of tables, flow charts and diagrams.

Content : (17)
Synthesis: (03)
(20)

TOTAL MARKS: [60]