KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

LIFE SCIENCES

MARCH COMMON TEST

2023

MARKS : 50

TIME: 1 Hour

Stanmorephysics

This question paper consist of 9 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 answers 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. Do ALL drawings in pencil and label them in blue or black ink.
7. Draw diagrams, tables or flow charts 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 may use a non-programmable calculator, protractor and a compass.
11. Write neatly and legibly.



SECTION A

QUESTION 1

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

1.1.1 Which ONE of the following can be used to treat cancer?

A Physiotherapy
B Radiography
C Ideography
D Chemotherapy

1.1.2 The function of mitochondria is to…

A surrounds and protect the cell
B provide the cell with energy
C supplies water to the cell
D controls substances that enter and leave the cell

1.1.3 Below is a list of phases of mitosis
(i)Anaphase
(ii) Telophase
(iii) Prophase
(iv) Metaphase

Which ONE of the following combinations show a sequence in mitosis?

A (iv)→(ii)→(i)→(iii)
B (iii)→(iv)→(i)→(ii)
C (i)→(ii)→(iv)→(iii)
D (iii)→(iii)→(iv)→(i)

(6)

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 to 1.2.4) in your ANSWER BOOK.

1.2.1 Transport of molecules across membranes against a concentration gradient, which therefore requires energy

1.2.2 The movement of water molecules from high concentration of water molecules to low concentration of water molecules

1.2.3 The part of microscope that is used to hold the slide into place

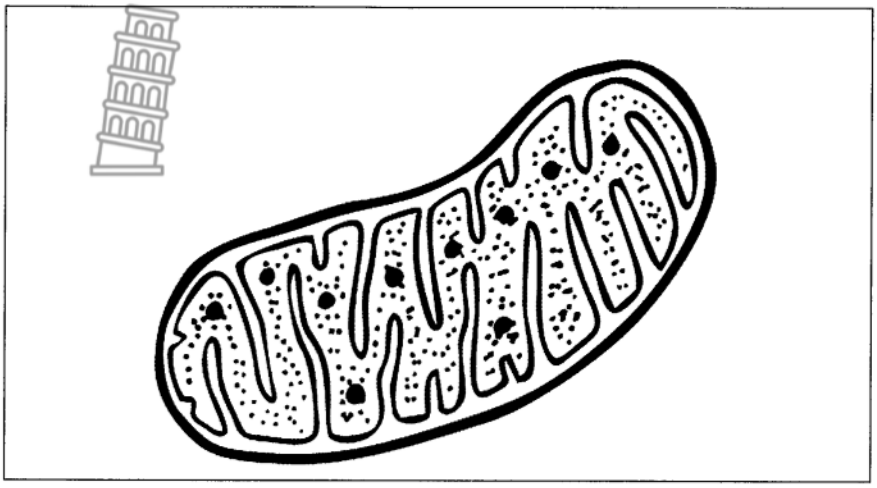
1.2.4 An organelle that is the site of protein synthesis 4x1 **(4)**

1.3 Indicate whether each of the statements in COLUMN I applies to A **ONLY**, **B ONLY**, **BOTH A AND B or NONE** of the items in COLUMN II. Write **A only**, **B only**, **both A and B,** or **none** next to the question number (1.3.1 to 1.3.3) in the ANSWER BOOK.

	COLUMN I	COLUMN II
1.3.1	Phase in the cell cycle where DNA replication takes place	A: Telophase B: Interphase
1.3.2	Organelles found in animal cells only	A: Vesicles B: Lysosomes

2x2 **(4)**

1.4	The diagram below show a cell organelle



1.4.1 Identify the diagram shown above (1)

1.4.2 State TWO places where the diagram mentioned in 1.4.1 can be found (2)

1.4.3 Explain the role of the above diagram to the places stated in 1.4.2 (2)

1.4.4 Give the name of the gas used by this organelle for cellular respiration (1)

(6)

TOTAL SECTION A [20]

SECTION B

QUEATION 2

2.1 The table below shows amounts of different types of food eaten by a learner and organic compounds
The total of organic compounds she ate is 144,9 g

Food types	Organic compounds (g)		
	Carbohydrates	Proteins	Fats
Potatoes	17	2	0,1
Chicken	0	(a)	3,8
Peanut butter	20	25	50

2.1.1 Identify the food type that is made mostly of fats (1)

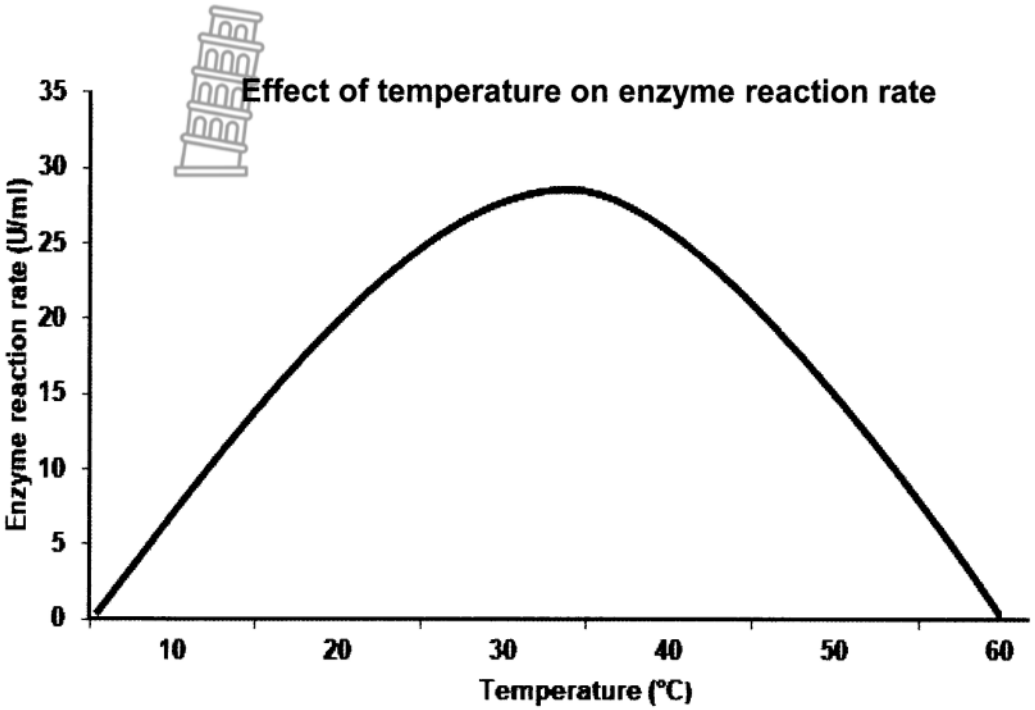
2.1.2 State the monomers of fats (1)

2.1.3 Calculate (a), show all your workings (2)

2.1.4 Give the chemical reagent used to test proteins (1)

2.1.5 Explain the colour change when a starch test using iodine is done on the potatoes. (2)
(7)

2.2 The graph below shows the results of an investigation that was conducted by grade 10 learners to determine the effect of temperature on enzyme rate of reaction. .



2.2.1 Identify:

(a) Dependent variable (1)
(b) Independent variable (1)

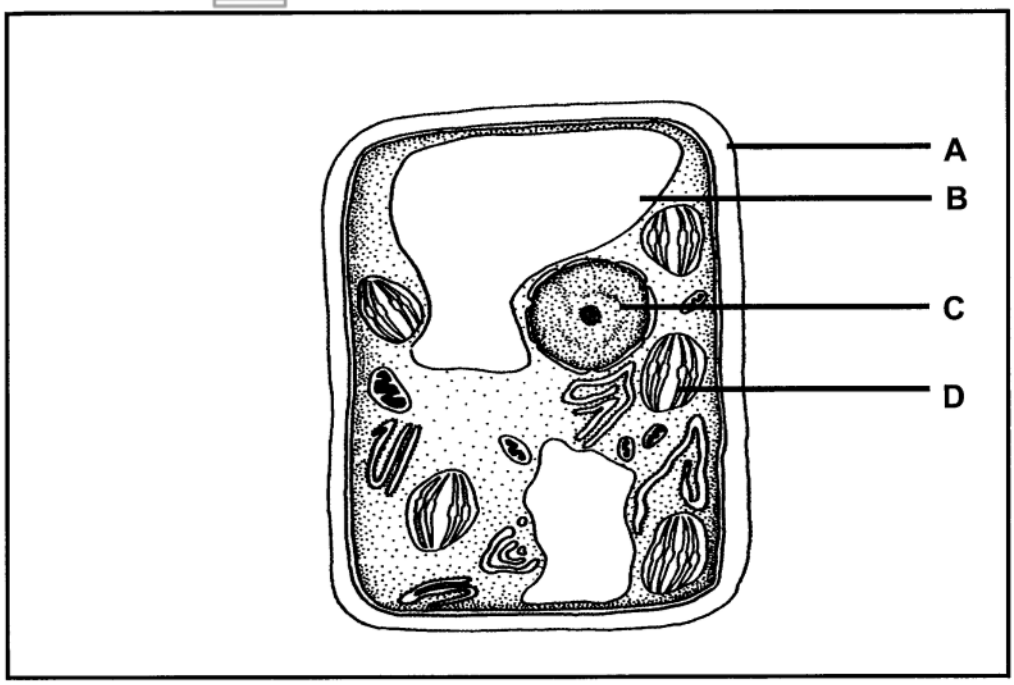
2.2.2 State the aim of the above investigation (2)

2.2.3 Using information from the graph explain why 35° is considered the optimum temperature for the enzyme reaction rate (2)

2.2.4 List TWO ways in which the reliability of the above investigation could be improved (2)
(8)
[15]

QUESTION 3

3.1 The diagram below shows a plant cell.



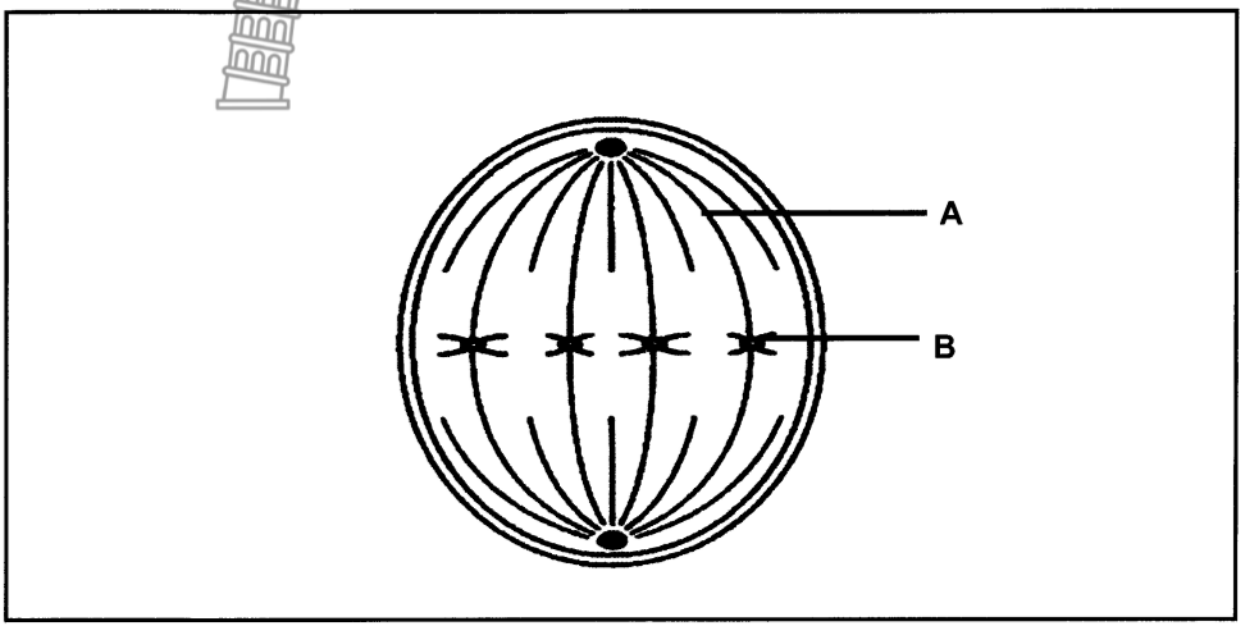
3.1.1 Name TWO useful substances that part **B** contains (2)

3.1.2 State ONE function of part **C** (1)

3.1.3 Give the LETTER and the NAME of the part that is selectively permeable (2)

3.1.4 Explain ONE advantage for this cell having many part **D**'s (2)
(7)

3.2 The diagram below shows one of the phases of mitosis



3.2.1 Identify part:

(a) A (1)
(b) B (1)

3.2.2 Give ONE visible reason to show that the phase above is metaphase (1)

3.2.3 How many chromosomes will be found in each cell at the end of the cell division? (1)

3.2.4 Draw the diagram to represent the phase that occurs after the one shown above (4)

(8)

TOTAL QUESTION 3 [15]
TOTAL SECTION B [30]
GRAND TOTAL [50]