



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

LIFE SCIENCES

COMMON TEST

MARCH 2023

MARKS: 50

TIME: 1 hour

Stanmorephysics

This question paper consists of 10 pages.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

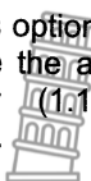
1. Answer ALL the questions.
2. Write ALL the answers in the ANSWER BOOK.
3. Start the answers to each question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
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 answer and write only the letter (A to D) next to the question number (1.1.1 to 1.1.3) in the ANSWER BOOK, for example 1.1.4 D.



1.1.1 Moss plants live in moist/ damp conditions because...

- ☒ A water is needed for fertilisation
- B moss plants have conducting tissues
- C moss plants produce spores
- D water is not needed for fertilisation

1.1.2 Pathogen that cause rabies...

- ☒ A Virus
- B Protozoan
- C Bacterium
- D Virus

1.1.3 The phylum Porifera which includes sponges is the least advanced of multicellular animals

Which of the following is/are true for phylum Porifera?

- (i) Coelomate ✗
- (ii) Asymmetrical ✓
- (iii) No cephalisation ✓
- (iv) Diploblastic ✗

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

(3 x 2) (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 the ANSWER BOOK.

1.2.1 The phylum of all animals with a vertebral column in adults

1.2.2 The transfer of pollen from an anther to the stigma

1.2.3 The type of reproduction in plants that produces offspring's with identical genetic composition

from
(3 x 1)

(3)

- 1.3 Indicate whether each of the descriptions 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 1.3.5) in the ANSWER BOOK.

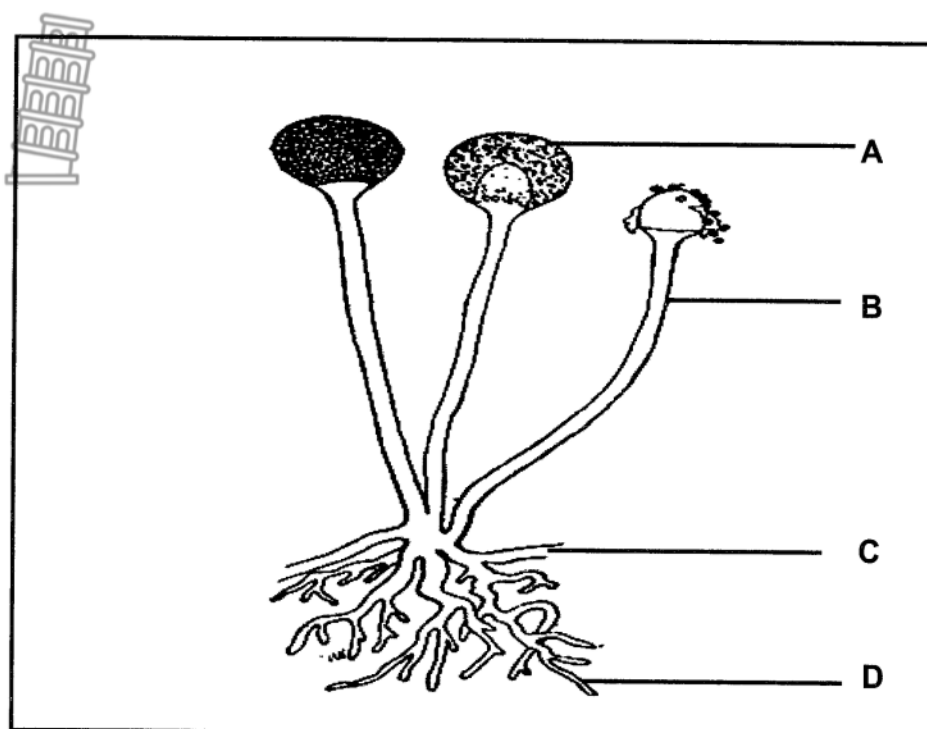
COLUMN I	COLUMN II
1.3.1 All animals in this phylum are sessile	A: Porifera B: Annelida
1.3.2 Animals with a radial symmetry	A: Arthropoda B: Chordata

(2 x 2)

(4)



1.4 The diagram below shows one of the phyla you studied.



- 1.4.1 Identify the kingdom to which the above organism belongs (1)
- 1.4.2 Give the LETTER and NAME of the part that:
- (a) anchors fungus to substrate (2)
 - (b) provides branched horizontal covering on substrate (2)
 - (c) produces mature spores (2)
- (7)**

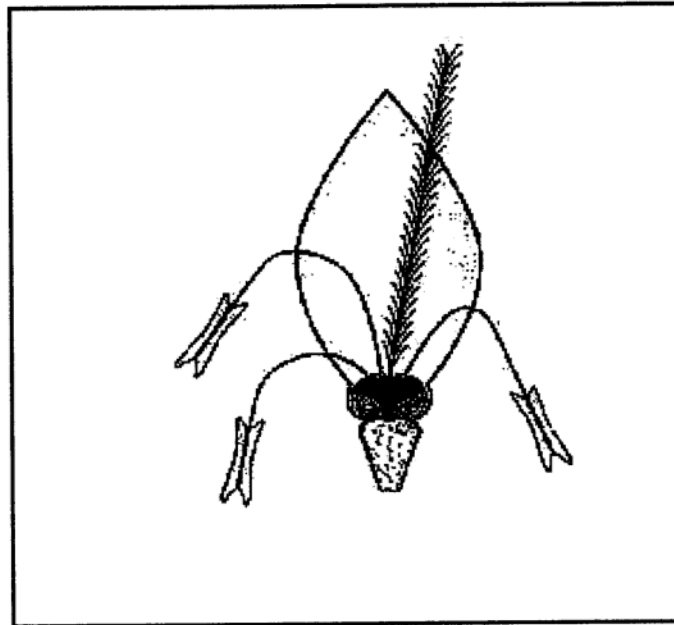
TOTAL SECTION A 20



SECTION B

QUESTION 2

2.1 The diagram below represents a flower.



- 2.1.1 Name the agent of pollination for the above flower (1)
- 2.1.2 List THREE characteristics of the flower that makes it adapted for the agent mentioned in QUESTION 2.1.1 (3)
- 2.1.3 Name ONE advantage of asexual reproduction in plants (1)
- 2.1.4 Explain why seedless vascular plants are able to grow taller than non-vascular plants (2)
- 2.1.5 Give TWO adaptation of angiosperms that makes them survive on land (2)

(9)



2.2 Malaria causes over 400 000 deaths each year globally.

- 2.2.1 Name the protozoan that causes malaria (1)
- 2.2.2 Name the vector that spreads malaria (1)
- 2.2.3 List TWO symptoms experienced by people with malaria (2)
- 2.2.4 Explain why malaria is only found in certain regions of Africa (2)
- (6)

TOTAL QUESTION 2 15

QUESTION 3

3.1 Grade 11 learners conducted an investigation to determine the optimum temperature for growth of bread mould.



The procedure for the investigation:

- FOUR plastic containers with lids were used
- Containers were labelled A, B, C and D
- A slice of bread was placed in each container
- 20ml of water was sprinkled over each slice.
-
- **CONTAINER A:** was placed in a fridge(cold)
- **CONTAINER B:** was placed in a cupboard (cool)
- **CONTAINER C:** was kept at room temperature (mild)
- **CONTAINER D:** was kept on a window sill (warm)
- Containers were left in their respective conditions for a week
- After a week the slices of bread were removed from the containers and placed next to each other.
- Learners repeated their investigation twice

The table below shows the results of the investigation

Container	Growth of bread mould (%)
A	5
B	25
C	50
D	75

3.1.1 Identify the:

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

3.1.2 Give ONE reason why the results at the end of this investigation may be considered reliable (1)

3.1.3 State ONE factor that was kept constant during the investigation (1)

(4)

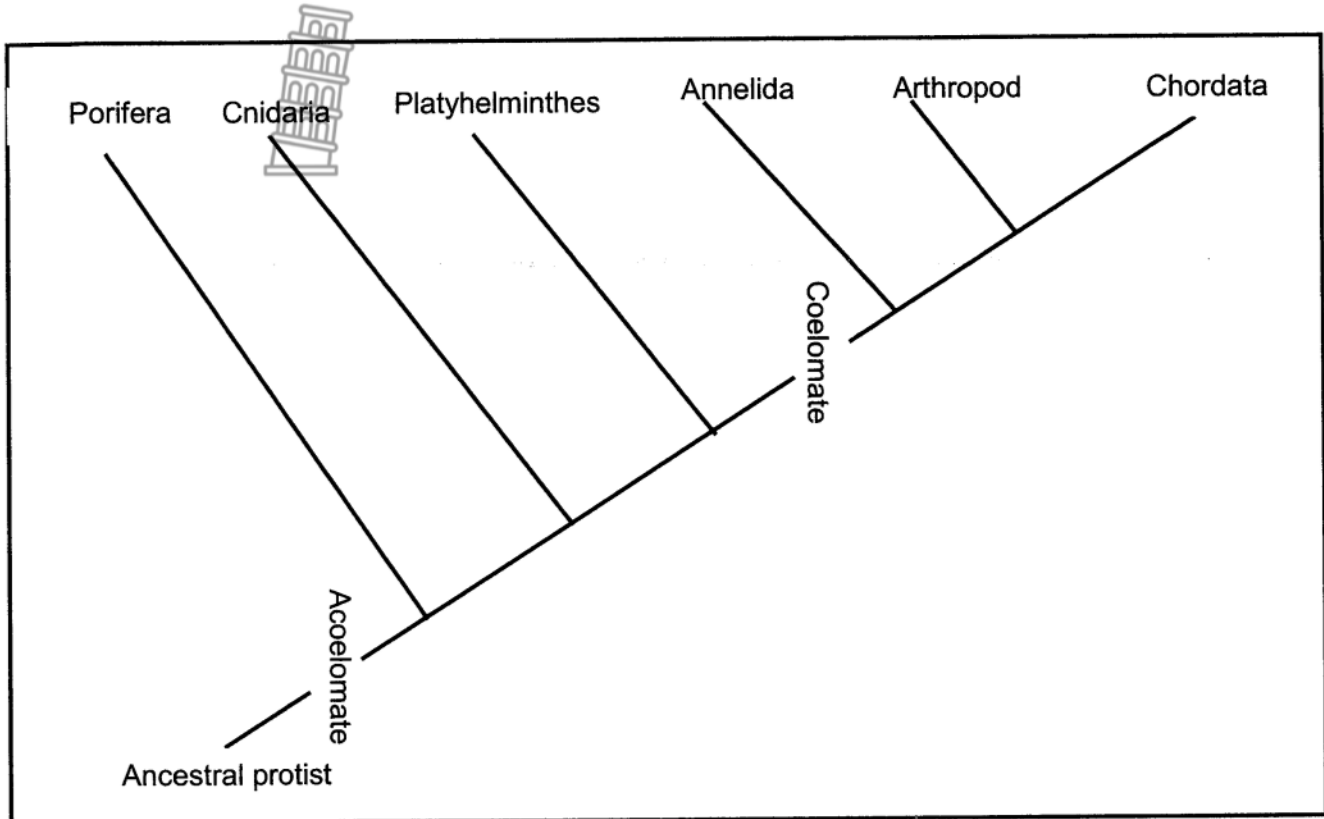


3.2 Complete the table below showing comparison in characteristics of the FOUR plant groups. Write down only the number of the question and the answer.

Characteristic	Bryophytes	Pteridophytes	3.2.1	Angiosperms
Vascular tissues	No vascular tissues	Has vascular tissues	Has vascular tissues	Has vascular tissues
Leaves, stem and roots	3.2.2	Has true roots, Stem and leaves	Has true roots, stem And leaves	3.2.3
Seeds	No seeds	3.2.4	Produces cones with seeds	3.2.5
Dependence on water	Depends on water for fertilisation	Depends on water for fertilisation	Does not depend on Water for fertilisation	3.2.6

(6)

3.3 The phylogenetic tree shows animal diversity



3.3.1 Identify TWO phyla with a coelom (2)

3.3.2 How many phyla are shown in the table above (1)

3.3.3 Explain the advantage of having a through-gut (2)
(5)

TOTAL QUESTION 3 15
GRAND TOTAL 50





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**LIFE SCIENCES
MARCH MARKING GUIDELINE
2023**

****Corrections to MEMO at End ****

MARKS: 50

TIME: 1 hour

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This marking guideline consists of 5 pages

SECTION A

QUESTION 1

1.1

- 1.1.1 A✓✓
1.1.2 C✓✓
1.1.3 C✓✓

(3 x 2)

(6)

1.2

- 1.2.1 Chordata✓
1.2.2 Pollination✓
1.2.3 Asexual reproduction✓

(1 X 3)

(3)

1.3

- 1.3.1 A only✓✓
1.3.2 NONE✓✓

(2 x 2)

(4)

1.4

- 1.4.1 Fungi✓
1.4.2 (a) D✓-rhizoids✓
(b) C✓-stolon✓
(c) A✓-sporangium✓

(1)

(2)

(2)

(2)

(7)


TOTAL MARKS SECTION A:

20




SECTION B

QUESTION 2

- 2.1 2.1.1 Wind✓ (1)
- 2.1.2  - Pollen grains are light, smooth and dry to allow them to float✓. (3)
 - Anthers are attached to their filaments in such a way that they are easily moveable with wind✓.
 - Stigma is large, feathery and sticky to trap as much pollen grains✓.
 - Flowers do not have scent and do not have nectar✓
 - Flowers do not have brightly coloured petals✓
(mark first THREE only)
- 2.1.3 - A large number of offspring's are rapidly produced✓ (1)
 - Offspring are genetically identical, if parent is well adapted to the environment, so will be the new plant. ✓
 - New plants produced relatively quickly✓
 - Agents of pollination and seed dispersal not required✓
(mark any ONE correct answer)
- 2.1.4 -They have conducting tissues✓ (xylem and phloem) (2)
 - plants are able to transport water and minerals to greater heights✓
- 2.1.5 - Leaves have cuticle✓ (2)
 - Angiosperms have true leaves, stems and roots✓
 - Embryo is enclosed in a seed✓ to prevent drying out
 - Has conducting tissues✓ (xylem and phloem)
(mark first TWO only) (9)



2.2	2.2.1	Plasmodium✓	
	2.2.2	Anophele mosquito✓	(1)
	2.2.3	 <ul style="list-style-type: none"> - fever✓ - chills ✓ - headache✓ - nausea ✓ - vomiting✓ <p>(mark first TWO only)</p>	(2)
	2.2.4	Most African countries experience high temperatures✓ which allow the Anopheles to thrive✓/multiply easily	(2)
			(6)
		TOTAL QUESTION 2	(15)

QUESTION 3

3.1	3.1.1	(a) growth of bread mould✓	(1)
		(b) temperature✓	(1)
	3.1.2	Learners repeated the investigation✓	(1)
	3.1.3	Amount of water sprinkled on each bread (20ml)✓	(1)
			(4)



3.2	3.2.1	Gymnosperm ✓	(1)
	3.2.2	No true stems, leaves and roots (thallus)✓	(1)
	3.2.3	True stems, leaves and roots✓	(1)
	3.2.4	No seeds✓	(1)
	3.2.5	Seed enclosed in a fruit✓	(1)
	3.2.6	Does not depend on water for fertilisation of gametes✓	(1)
			(6)
3.3	3.3.1	- Annelida ✓ - Arthropoda ✓ - Chordata✓ (mark first TWO only)	(1) (1)
	3.3.2	6✓	(1)
	3.3.3	- Allows animals to consume food through the mouth✓and excrete waste through the anus✓ - Different regions in the digestive tract become specialised✓ to improve efficiency✓ - Digestion is a continuous process✓ that can continue during ingestion and egestion✓ - Due to the presence of a coelom✓food can move by peristalsis through the digestive tract, independently of the muscles in the body wall✓ (mark any correct TWO)	(2) (5)
TOTAL QUESTION 3			15
TOTAL MARKS			50



LFSC MARCH TEST

GRADE 11

2023 MEMORANDUM CORRECTIONS

SECTION A

QUESTION 1

1.1

1.1.2 A✓✓/C **Rabies is caused by virus**

1.2

1.2.3 Asexual✓/vegetative reproduction

SECTION B

QUESTION 2

2.1

2.1.2 **The requested learners to LIST the characteristics of the flower NOT explaining how they are adapted.**

- No scent or nectar✓
- No brightly coloured petals and small✓
- large anther✓
- produce enormous/large amount of pollen✓
- lack calyx and corolla✓
- stigmas are long and feathery✓
- borne on flexible stalks✓
- Pollen grains are light, smooth and dry✓

(MARK THE FIRST THREE)

2.2

2.2.2 Female *Anopheles* mosquito✓

2.2.4 African countries have high/warm temperatures✓/humid/moist conditions/high rainfall which allow the *Anopheles* to thrive✓/multiply easily.

QUESTION 3

3.1

3.1.2 The investigation was repeated twice✓

