Gr 10 & 11 enclosed.

Basic Education

KwaZulu-Natal Department of Basic Education

REPUBLIC OF SOUTH AFRICA

LIFE SCIENCES

GRADE 11

MEMORANDUM

MARCH 2015

NATIONAL SENIOR CERTIFICATE

GRADE 11

MARKS : 60

This memorandum consists of 05 pages.

SECTION A

QUESTION 1

1.1

1.1.1 C ✓✓
1.1.2 C ✓✓
1.1.3 B ✓✓
1.1.4 A ✓✓
1.1.5 D✓✓

(5 x 2) **(10)**

TOTAL SECTION A: [10]

SECTION B

QUESTION 2

2.1

2.1.1

(a) Growth of a bacterial species✓ (1)
(b) Different antibiotics✓ (1)

2.1.2 Antibiotic 1/2/3 was most effective in destroying the bacterial species✓✓
OR
All/None of the antibiotics were effective in destroying the bacterial species ✓✓ (2)

2.1.3 Antibiotic 2✓✓ (2)

2.1.4

- Repeat the investigation✓
- Use more than one agar plate for each antibiotic✓
- Increase the period of the investigation✓ Any (2)

(Mark first TWO only)

2.1.5

- Keep all plates under the same environmental conditions✓/temperature etc.
- Ensure that the plates have the same amount of nutrients✓
- The plates/sterile discs should be of the same size✓
- Use the same amount/concentration of antibiotic✓ Any (2)

(Mark first TWO only)

(10)

2.2

2.2.1 November✓ (1)

2.2.2 500✓ (1)

2.2.3 From hospital records✓/clinic records/surveys (1)
(Mark first ONE only)

2.2.4 - Increased medical costs✓ required to treat malaria patients✓
- Loss of income✓ due to inability to work✓ Any 1 x 2 (2)

(5)
[15]

QUESTION 3

3.1

3.1.1 Plant 2✓ (1)
(Mark first ONE only)

3.1.2
- No cuticle✓
- No vascular/conducting tissue✓
- No strengthening tissue✓
- No true roots, stems and leaves✓ Any (2)

(Mark first TWO only)

3.1.3
(a) Gametophyte✓
(b) Sporophyte✓ (2)

3.1.4
- Flowers are specialized to attract different pollinating agents✓
- and thus pollination can occur all year round✓/pollination not restricted to windy seasons only/greater chances of pollen reaching other flowers (2)

(7)

3.2

3.2.1
(a) 400 million years✓ (1)
(b) 50 million years✓ (1)
(c) Angiosperms✓ (1)
(d) Vascular/conducting tissue✓ (1)

3.2.2
Gymnosperms✓
Angiosperms✓ (2)
(Mark first TWO only)

3.2.3
- Seeds have a longer lifespan✓
- Seeds have food reserves✓
- Seeds can remain dormant✓
- Seeds have a tough outer coat✓

(Mark first TWO only) Any (2)

(8)
[15]
TOTAL SECTION B: [30]

SECTION C

QUESTION 4

Cnidaria e.g. *Hydra/ sea anemone /jelly fish /* corals ✓*

- No cephalisation✓
- Organism is radially symmetrical✓
- with tentacles arranged in a ring around the mouth✓
- allowing the hydra to obtain food from all sides✓
- Nerve cells are located over the entire body surface ✓
- allowing it to sense danger/food from all sides✓
- This is useful to the hydra which is sedentary/sessile/attached to substrate✓

- The hydra is diploblastic✓
- The endoderm lines a cavity called a coelenteron✓
- which acts as a blind gut✓
- Water in the coelenteron✓
- acts as a hydrostatic skeleton✓
- Hydra has no blood system✓
- since food diffuses directly into all cells✓

- The hydra has a single digestive opening✓
- which serves as a mouth and an anus✓
- The opening can only be one since the other end is attached✓
- The position of the tentacles allow for food to be captured and inserted into the mouth✓

1 compulsory* + any 8 (9)

Annelida e.g. *Lumbricus/ earthworm/ ragworm/leeches* ✓*

- It is bilaterally symmetrical✓
- allowing for forward movement✓
- Shows cephalisation,✓
- As a result the front end of the earthworm is more sensitive to the environment✓
- allowing danger to be detected before entering a new environment✓

- The earthworm is triploblastic ✓
- There is a body cavity in the mesoderm called a coelom✓
- Containing a coelomic fluid✓
- which acts as a hydrostatic skeleton✓
- and also keeps the skin moist for gas exchange✓

- The earthworm has a through gut✓
- With a separate mouth and anus✓
- This allows food to pass in one direction✓
- Preventing mixing of digested and undigested food✓
- The gut also allows sand to pass through during burrowing✓

1 compulsory* + any 7 (8)
(17)

Criterion	Relevance (R)	Logical sequence (L)	Comprehensive (C)
Generally	All information provided is relevant to the topic	Ideas are arranged in a logical/cause-effect sequence	All aspects required by the essay have been sufficiently addressed
In this essay	All information provided is relevant to • The body plan of the two groups • The mode of life of the two groups (There is no irrelevant information)	The various aspects of the body plan for each organism are appropriately linked to the mode of life of the organism	AT least **5** points included on each of: • Cnidaria • Annelida
Mark	1	1	1

(3)
[20]

TOTAL MARKS: [60]