



Basic Education

KwaZulu-Natal Department of Basic Education
REPUBLIC OF SOUTH AFRICA

LIFE SCIENCES
GRADE 11
MEMORANDUM
MARCH 2016

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

MARKS : 60

This memorandum consists of 6 pages.

SECTION A

QUESTION 1

- 1.1 1.1.1 D ✓✓
- 1.1.2 D ✓✓
- 1.1.3 B ✓✓
- 1.1.4 B ✓✓
- 1.1.5 A ✓✓

(5 x 2) = (10)
TOTAL SECTION A: [10]

SECTION B

QUESTION 2

- 2.1 2.1.1
 - (a) Type of antibiotic ✓ (1)
 - (b) Bacterial growth/diameter of area where no bacteria grew ✓ (1)
- 2.1.2 To investigate/determine the effectiveness of three different antibiotics ✓
on three different strains of disease-causing bacteria ✓ (2)
- 2.1.3 Antibiotic 2 / AB2 ✓ (1)
- 2.1.4
 - Identical agar plates were used ✓
 - Equal amounts of each antibiotic used in the agar plates ✓
 - The plates were incubated at the same temperature ✓
 - The plates were incubated at the same time ✓ Any (2)

(Mark first TWO only)
- 2.1.5
 - Increase the sample size ✓
 - Repeat the investigation ✓ (2)

(Mark first TWO only)

- 3.2
- 3.2.1 Active immunity ✓ (1)
- 3.2.2 Antibodies ✓ (1)
- 3.2.3 After the first exposure: It takes longer for the body to respond and produce antibodies ✓
After the second exposure: The body response is quicker and more intense ✓ (2)
- 3.2.4 6 weeks ✓ (2)

Total Section B= 30 [15]

- 2.2
- 2.2.1 Cnidaria ✓ (1)
- 2.2.2 Blind gut ✓ (1)
- 2.2.3 It has only one opening ✓
so ingestion and egestion cannot occur simultaneously ✓
OR
Since food move circulates/does not move in one direction the gut cannot become specialised ✓ (2)
- 2.2.4
- It separates the gut from the body wall ✓
- allowing for more extensive growth of organs and systems/allowing the gut to function independently of the rest of the body
- OR
- Serves as a hydrostatic skeleton ✓
- against which the muscles act ✓
- OR
- It contains coelomic fluid ✓
- which is spread over the body surface to prevent desiccation ✓
Any (1x2) (2)

(6) [15]

QUESTION 3

- 3.1
- 3.1.1 Protista/Ancestral protists (1)
- 3.1.2 9 ✓ (1)
- 3.1.3 (a) Porifera ✓ (2)
- (b) Cnidaria ✓
- 3.1.4 (a) Platyhelminthes ✓ (1)
- (b) Coelom in arthropods is reduced and contains blood ✓
Coelom in annelids contains coelomic fluid ✓ (2)
- 3.1.5 (a) Cnidaria ✓ (1)
- (b) Annelida/Arthropoda/Chordata (1)

(9) Please turn over

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SECTION C

QUESTION 4

Size of the plants.

- Bryophytes are small plants/few centimetres tall✓
- that do not have true strengthening tissue✓
- for keeping the plant upright✓
- and no conducting tissue✓
- to conduct water long distances✓
- In addition it does not contain true roots, stems and leaves✓
- and have no cuticle to reduce water loss✓
- Angiosperms may be very tall/grow up to a few metres✓
- since they have well-developed conducting tissue/xylem✓
- which allows water to be pushed up to great heights✓
- They also have strengthening tissue✓
- to keep a tall plant upright✓
- They have well developed roots and stems✓
- and the leaves have cuticles to reduce water loss✓

any 4/5

(max 9)

Decreasing dependence on water for reproduction.

- Bryophytes depend on water for sexual reproduction✓
- The sperm cell need to swim in a film of water✓
- from the male sex organs ✓
- to reach the egg cell/ovum✓
- in the female sex organ✓
- These plants therefore always grow in a moist environment✓
- and the sex organs are found on the undersurface of the gametophyte✓
- any 4
- In angiosperms water is not needed to carry sperm cells to the ovum✓
- During pollination✓
- wind/insects/birds carry the pollen grains to another plant✓
- A pollen tube containing the male gametes✓
- germinates towards the egg cell/ovum✓
- Angiosperms are therefore not restricted to moist habitats✓

any 4

(max 8)

ASSESSING THE PRESENTATION OF THE ESSAY

Criterion	Relevance (R)	Logical sequence (L)	Comprehensive (C)
Generally	All information is relevant to the topic	Ideas arranged in a logical/cause-effect sequence	All aspects required by the essay have been sufficiently addressed
In this essay in Q 4	Only information relevant to the description of size of the plants and decreasing dependence on water for reproduction is given for bryophytes and angiosperms.	The description of size of the plants and decreasing dependence on water for reproduction given for each of bryophytes and angiosperms is logical and sequential.	At least 6 correct points in the description of the size of plants and 5 points on their dependence on water for reproduction are given.
Mark	1	1	1

(17)

(3)

[20]

TOTAL MARKS: [60]