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**NATIONAL SENIOR
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GRADE 10

NOVEMBER 2020

**LIFE SCIENCES P2
MARKING GUIDELINE
(EXEMPLAR)**

MARKS: 150

This marking guideline consists of 9 pages.

SECTION A

QUESTION 1

- | | | | | |
|-----|--------|--|----------|------|
| 1.1 | 1.1.1 | B ✓✓ | | |
| | 1.1.2 | A ✓✓ | | |
| | 1.1.3 | D ✓✓ | | |
| | 1.1.4 | D ✓✓ | | |
| | 1.1.5 | B ✓✓ | | |
| | 1.1.6 | D ✓✓ | | |
| | 1.1.7 | B ✓✓ | | |
| | 1.1.8 | D ✓✓ | | |
| | 1.1.9 | D ✓✓ | | |
| | 1.1.10 | C ✓✓ | (10 x 2) | (20) |
| 1.2 | 1.2.1 | Cardiac ✓ | | |
| | 1.2.2 | Haemoglobin ✓ | | |
| | 1.2.3 | Tissue fluid ✓ | | |
| | 1.2.4 | Hibernation ✓ | | |
| | 1.2.5 | Altitude ✓ | | |
| | 1.2.6 | Global warming ✓ | | |
| | 1.2.7 | Deforestation ✓ | | |
| | 1.2.8 | Tectonic plate ✓ | | |
| | 1.2.9 | <i>Glossopteris</i> ✓ | (9 x 1) | (9) |
| 1.3 | 1.3.1 | None ✓✓ | | |
| | 1.3.2 | B only ✓✓ | | |
| | 1.3.3 | B only ✓✓ | | |
| | 1.3.4 | B only ✓✓ | (4 x 2) | (8) |
| 1.4 | 1.4.1 | 1 – Aorta ✓
4 – Septum ✓
6 – Tricuspid valve ✓ | | (3) |
| | 1.4.2 | Lungs ✓ | | (1) |
| | 1.4.3 | Ventricular systole ✓ | | (1) |
| | 1.4.4 | Low in oxygen ✓ | | (1) |

1.5	1.5.1	(a) Ordovician ✓	(1)
		(b) Trilobites ✓	(1)
	1.5.2	Geological time scale ✓	(1)
	1.5.3	Cambrian ✓	(1)
	1.5.4	Relative dating ✓	(1)
	1.5.5	Index fossil ✓	(1)
	1.5.6	Palaeontologist ✓	(1)

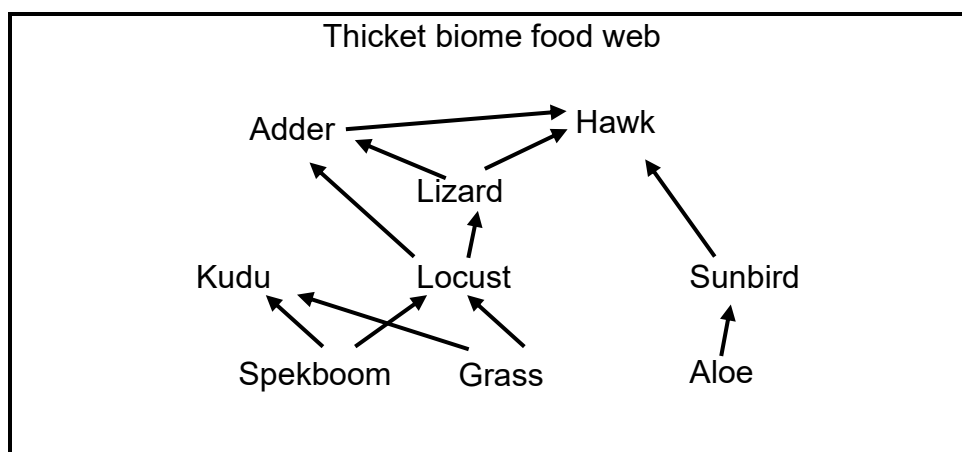
TOTAL SECTION A: 50



SECTION B**QUESTION 2**

- 2.1 2.1.1 2 – Sinoatrial node ✓
3 – Atrioventricular node ✓ (2)
- 2.1.2 Septum ✓✓ (2)
- 2.1.3 If the medulla oblongata ✓ /brain detects
too much CO₂ ✓ / a drop in blood pressure,
it sends an impulse to the sinoatrial node ✓
which causes the atria to contract ✓
Then the atrioventricular node ✓
causes the ventricles ✓
to contract faster ✓ (Any 4) (4)
- 2.1.4 Cholesterol ✓ / plaque build-up (1)
- 2.1.5 A stent ✓ (1)
- 2.1.6 The stent holds the blocked artery open ✓
so that blood can flow through ✓ (2)
- 2.1.7 Improved diet ✓
More / regular exercise ✓
Medication ✓ (3)
- 2.2 2.2.1 An area with a distinct climate ✓ together with the plants and
animals that live there ✓ (2)
- 2.2.2 Grass ✓
Aloe ✓
Spekboom ✓ **Mark first TWO only** (Any 2) (2)
- 2.2.3 Kudu ✓
Locust ✓
Sunbird ✓ **Mark first ONE only** (Any 1) (1)
- 2.2.4 Hawk ✓
Adder ✓ **Mark first ONE only** (Any 1) (1)

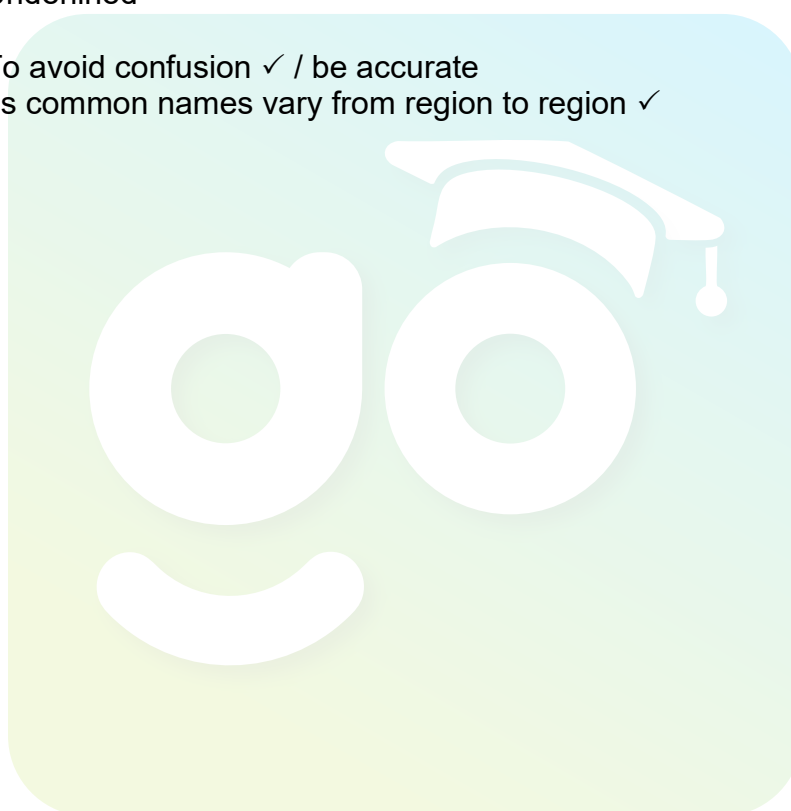
2.2.5

**Mark Allocation:**

Title	✓	
Arrows facing right way	✓	
ALL organisms used in food web	✓	
ALL connections logical / feasible	✓	(4)

- 2.3 2.3.1 Nitrogen fixation ✓ (1)
- 2.3.2 As nitrates ✓ / NO₃ (1)
- 2.3.3 Precipitation ✓ (1)
- 2.3.4 Eutrophication ✓ (1)
- 2.3.5 Nutrient runoff / eutrophication causes algae to grow rapidly ✓ / an algal bloom which can block light ✓
Plants in the water may die as a result ✓
Decomposing bacteria remove oxygen from the water ✓
Causing other organisms to die too ✓ (Any 3) (3)
- 2.4 2.4.1 Light ✓ (1)
- 2.4.2 The tilt of the Earth's axis causes one side of the planet to face towards the sun ✓ while the other side faces away from the sun ✓
The side that faces towards the sun receives more light ✓ and experiences summer, ✓ while the side that faces away receives less light ✓ and experiences winter ✓ (Any 3) (3)
- 2.4.3 (a) Photoperiod ✓ (1)
- (b) Seasonal movement of animals from one place to another ✓
in response to climatic conditions ✓ (2)
- (c) To avoid cold conditions ✓
To find more food ✓
To find more water ✓ **Mark first ONE only** (Any 1) (1)

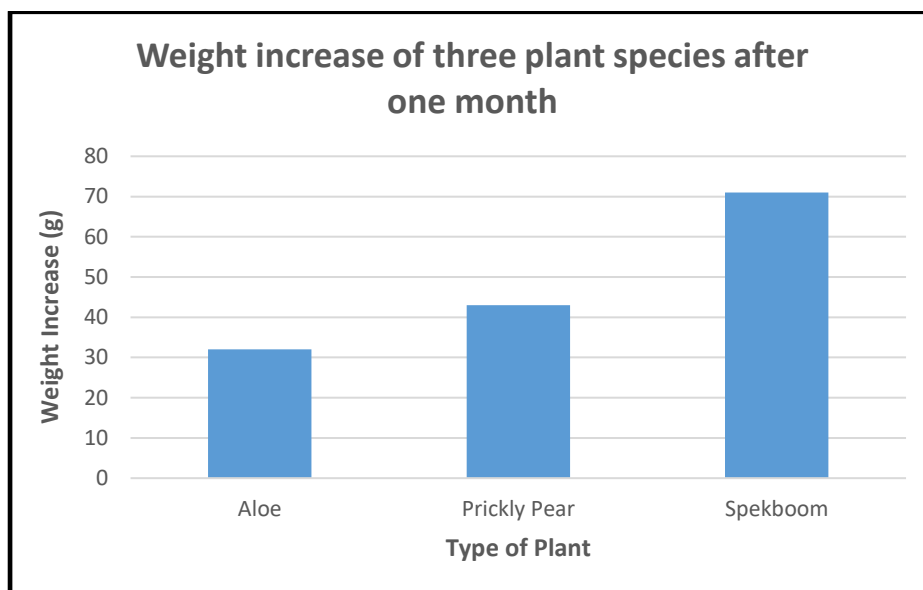
- | | | | |
|-----|-------|--|-----|
| 2.5 | 2.5.1 | (a) Protista ✓ | (1) |
| | | (b) Chitin ✓ | (1) |
| | | (c) Cellulose ✓ | (1) |
| | | (d) Autotrophic ✓ | (1) |
| | 2.5.2 | Has a true nucleus ✓ | (1) |
| 2.6 | 2.6.1 | Mammalia ✓ | (1) |
| | 2.6.2 | <u>Panthera leo</u>
Name: Panthera leo ✓
Underlined ✓ | (2) |
| | 2.6.3 | To avoid confusion ✓ / be accurate
as common names vary from region to region ✓ | (2) |
- [50]**



QUESTION 3

3.1 3.1.1 Type of plant ✓ (1)

3.1.2

**Mark Allocation:**

Type of Graph (T)		1 Mark
Caption (C) Both variables included		1 Mark
X and Y axis labels and Y axis unit (L)		1 Mark
X and Y axis scales and bars same width (S)		1 Mark
Plotting of points (P)	No bars plotted correctly	0 Marks
	1–2 bars plotted correctly	1 Mark
	All bars plotted correctly	2 Marks

(6)

3.1.3 So that they can know what the increase in weight is at the end ✓ (1)

3.1.4 They chose plants of the same height ✓
 They put the plants in equal sized pots ✓
 All plants had the same type of soil ✓
 All plants had the same amount of soil ✓
 All plants were in the same location ✓
 All plants received the same amount of water ✓
Mark first TWO only (Any 2) (2)

3.1.5 Increase the sample size ✓ and repeat the experiment ✓ (1)

3.1.6 $\frac{71}{800} \times 100 \checkmark = 8,88\% \checkmark$ (2)

3.1.7 When plants absorb CO₂ out of the atmosphere
 they use it to create organic compounds ✓ / carbohydrates
 which they use to grow ✓
 The more they grow the more they gain weight ✓ (Any 2) (2)

- 3.2 3.2.1 (a) Trilobite ✓ (1)
- (b) Ammonite ✓ (1)
- 3.2.2 The organism dies and covered rapidly ✓
by sediment ✓ / silt
As time passes layers of sediment build up over the body ✓
The layers compress ✓ / are squashed
by immense pressure building up ✓
Minerals begin to replace animal tissues ✓
and the body petrifies ✓ (Any 4) (4)
- 3.2.3 Frozen in ice ✓
Trapped in tar ✓
Trapped in amber ✓ (Any 2) (2)
- 3.2.4 Radiometric dating ✓ (1)
- 3.3 3.3.1 They were thought to be extinct ✓
Yet have existed unchanged ✓
for millions of years ✓ (Any 2) (2)
- 3.3.2 Off the coast of East London ✓ (1)
- 3.3.3 Transition fossils ✓ (2)
- 3.3.4 Archeopteryx ✓
Thrinaxodon ✓
Lystrosaurus ✓ (Any 1) (1)
- 3.4 3.4.1 No ✓ (1)
- 3.4.2 Yes ✓
Genetic evidence shows that missing links may not be missing
links at all ✓
These organisms are continually evolving ✓
Which suggests that they are part of their own group ✓
(Answer + Any 2)
- OR**
- No. ✓
The features of these organisms ✓
still suggest links between different groups of organisms ✓
Just because the coelacanth is not a missing link does not mean
that others aren't too ✓
(Answer + Any 2) (3)

- 3.5 3.5.1 Mass extinctions ✓ (1)
- 3.5.2 Event 3 ✓ (3)
- 3.5.3 A volcanic eruption released particles into the air ✓
which blocked out the sun ✓
For long periods of time ✓
Lowering temperatures on Earth ✓
causing many organisms to go extinct as they could not adapt ✓
(Any 3) (3)
- 3.5.4 Asteroid impact ✓
Continental drift ✓ (2)
- 3.6 3.6.1 Mrs Ples ✓ (1)
- 3.6.2 Fossil tourism ✓ (1)
- 3.6.3 West Coast Fossil Park ✓
Kitching Fossil Exploration Centre ✓
Museums ✓ **Mark first TWO only** (Any 2) (2)
- 3.6.4 Tourists visiting the area ✓
Create a need for jobs ✓ / employment
Such as tour operators ✓ / ticket sales / restaurant owners.
Tourists may also buy curios ✓
Stay in B&B's ✓ / hotels
All of which generate income ✓ for the local community.
The government may also upgrade facilities ✓ in their area
Which improves their living conditions ✓ (Any 4) (4)
- [50]**

TOTAL SECTION B: 100
GRAND TOTAL: 150