Bergvliet High School
Grade 10 Life Sciences Paper 2
Final Examination: Friday 22 November 2024
Set by: We
Moderated by: Br, La and Oc
Total: 150 Marks / Time: 2 ½ Hours

Marking Guideline (5 Pages)

Section A
Question 1

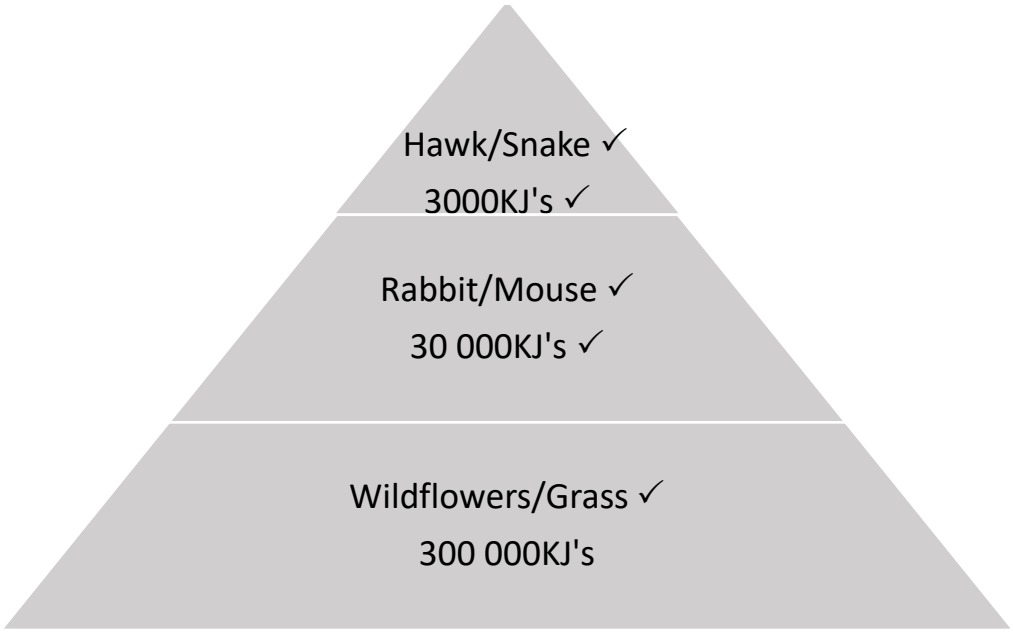
1.1.1 D ✓✓
1.1.2 B ✓✓
1.1.3 C ✓✓
1.1.4 D ✓✓
1.1.5 A ✓✓
1.1.6 A ✓✓
1.1.7 D ✓✓
1.1.8 A ✓✓
1.1.9 A ✓✓
1.1.10 B ✓✓ 10 x 2 = [20]

1.2.1 Oxygen ✓
1.2.2 Biogeography ✓
1.2.3 Ozone ✓ layer
1.2.4 Ammonites ✓
1.2.5 Half-life ✓
1.2.6 Altitude ✓
1.2.7 Cambrian explosion ✓
1.2.8 Gondwanaland ✓
1.2.9 Coelacanth ✓
1.2.10 Palaeontologist ✓
[10]

1.3.1 None ✓✓
1.3.2 B only ✓✓
1.3.3 Both A and B ✓✓
1.3.4 Both A and B ✓✓
1.3.5 A only ✓✓ [10]

1.4.1 Food web ✓ (1)
1.4.2 A well-defined area ✓in which there is a close interaction between the plants, animals and the environment. ✓ (2)
1.4.3 a) Rabbit / Mouse ✓ (1)
b) Hawk ✓ (1)

1.4.4



(5)

[10]

Question One: 50

Question 2

2.1.1 A circulation of water ✓ between the water vapour in the atmosphere and the water on and beneath the ground. ✓ (2)

2.1.2 A - Evaporation ✓ D - Precipitation ✓ (2)

2.1.3 Aspect, ✓ Slope ✓ and Altitude. ✓ (3)

2.1.4 Y ✓ (1)

2.1.5 Y is facing south. ✓
The south facing side receives less solar radiation. ✓ (2)

[10]

2.2.1 The sudden death of a large number of species ✓ in a short time. (1)

2.2.2 55 – 60 ✓ mya ✓ (2)

2.2.3 Permian ✓ extinction (1)

2.2.4 The biggest ✓ (1)

2.2.5 400 – 200 = 200 families or 400 ✓ – (210 – 230) ✓ = (190 to 170) ✓ families (3)

2.2.6 Many genera were wiped out completely ✓ during the extinction so their niches were left open ✓ / less predators.
These niches were rapidly taken over by other genera ✓ / species,
Who diversified ✓ and formed new genera/species. ✓ (2)

2.2.7 Cretaceous ✓ (1)

2.2.8 Caused by human impact. ✓ (1)

[12]

2.3 A table showing the differences between the Fynbos and the Succulent Karoo biome. ✓✓ Heading ✓ + Tabulated ✓ (2)

Fynbos	Succulent Karoo
C ✓ (1)	B ✓ (1)
Protea or Restio or Erica ✓ (1)	Stone plant or Vygies or Quiver ✓ (1)
Cape baboon, Bontebok, Steenbok, Geometric tortoise ✓✓ (Any 2)	Bat-eared fox, Meerkat, Barking gecko ✓✓ (Any 2)

[10]

2.4.1 - Caused old bacteria to die out but new forms to evolve into an oxygen rich environment. ✓
- They began to use oxygen to break down food to release energy ✓ (cellular respiration) ✓
- Allowed for the development of the ozone layer ✓
(UV rays split some of the oxygen molecules into (O + O) atoms which then joined a 3rd oxygen to form O_3. The ozone absorbs harmful UV rays. ✓
- Allowed organisms to grow extremely large. ✓ Any (4)

2.4.2 Periods of drastic fall in temperature of earth's surface and atmosphere. ✓✓ (2)

2.4.3 - Some species that weren't suited to the extremely low temperatures died out. ✓
- Others were adapted to survive the freezing cold temperatures. ✓
- Some species were forced to migrate ✓ towards the equator where temperatures were warmer.
- Ice sheet formation caused sea level to drop ✓ = extinction of animals in shallow marine habitats ✓ but also allowed land bridges to form between continents. ✓ Any (4)

[10]

2.5.1 A – Nitrates ✓
B – Ammonia ✓
C – Nitrites ✓ (3)

2.5.2 Denitrification ✓ (1)

2.5.3 Root nodules / Legumes ✓ (1)

2.5.4 a) Lightning ✓ (1)

b) Responsible for forming nitrates in the atmosphere. ✓ (1)

c) So that the nitrates can be taken up from the soil by the plants / Nitrogen can be used to form proteins / Nitrogen is inert (not reactive). ✓ (1)

[8]

Question 2: 50

Question 3

3.1.1 a) Traffic noise. ✓ (1)

b) Loudness of frogs mating calls. ✓ (1)

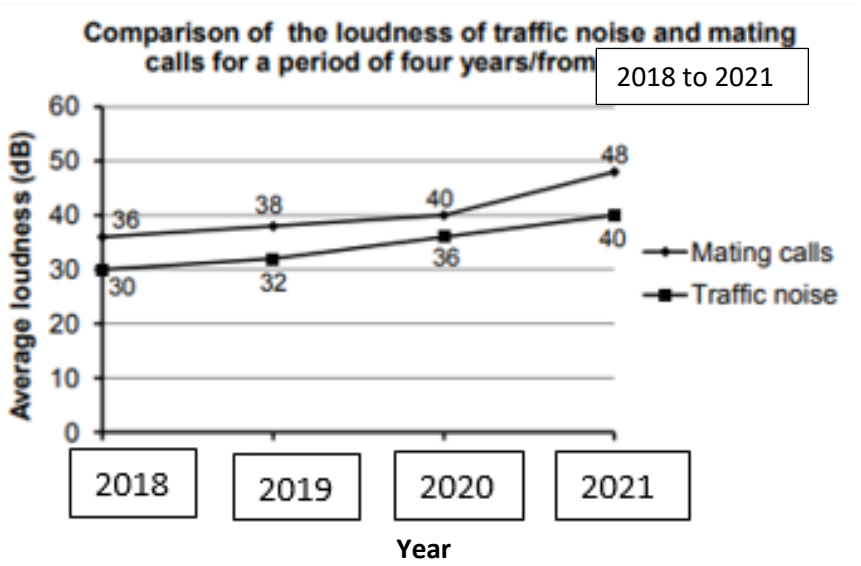
3.1.2 The mating call can be easily heard to ensure that a mate is attracted / Louder call would attract more males. ✓ (1)

3.1.3 The investigation was done over a long period / 6 years. ✓
Many recordings were done in each year / an average was calculated. ✓ (2)

3.1.4 Same type of apparatus used. ✓
Time of recordings the same. ✓
Distance recordings are taken from.
Person taking measurements. (2)

3.1.5 As the traffic noise increased, the loudness of frogs mating calls also increased. ✓✓ (2)

3.1.6



CRITERION	ELABORATION	MARKS
TYPE	Two line graphs on the same set of axes (T)	1
KEY	A key or labels for each graph is present (K)	1
TITLE	Title of graph includes 3 variables	1
SCALE	Correct scale for X-axis and Y-axes (S)	1
LABELS	Correct label and unit for X-axis and Y-axis (L)	1
PLOTTING	Correct plotting of points	1: 1 to 7 points plotted correctly 2: Graph drawn for **required years** only, with all 8 points plotted correctly.

T – Type **C** – Caption **S** – Scale **L** – Labels **P** – Plotting (6)

[15]

3.2.1 They often strike down the victim in their productive years of life, ✓ removing the breadwinner from the family. ✓ /
When non-fatal, they result in severe disability ✓ and consequent impoverishment for entire families. ✓ (2)

3.2.2 R8 billion per annum ✓ (1)

3.2.3 Healthy diet ✓ Lower intake of fatty foods ✓
Maintaining a healthy weight ✓ Exercise ✓
Medication to lower cholesterol ✓ Stop smoking ✓ (3)
[6]

3.3.1 2 – Tricuspid valve ✓
3 – Right atrium ✓
6 – Left Pulmonary artery ✓ (3)

3.3.2 The blood from the left ventricle must be pumped to the rest of the body ✓ while blood from the right ventricle is pumped to the lungs only. ✓ /
Therefore a stronger contraction or places blood under more pressure. (2)

3.3.3 **ATRIAL SYSTOLE**
- Atrial muscles contract ✓
- Ventricle muscles remain relaxed ✓
- Deoxygenated blood ✓ is forced from the right atrium into the right ventricle ✓
- Oxygenated blood ✓ is forced from the left atrium into the left ventricle ✓
- Bicuspid and tricuspid valves are open ✓
- The semi lunar valves are closed. ✓ (Any 5)

3.3.4 Closed - Blood is limited to the blood vessels. ✓
Double – Two main circulatory systems can be distinguished. ✓
Pulmonary ✓
Systemic ✓ (4)
[14]

3.4.1 Gauteng ✓ (1)

3.4.2 Homo naledi ✓ (1)

3.4.3 Relative dating ✓
Radiometric dating ✓ (2)

3.4.4 - It provides **evidence** of earlier life on earth. ✓
- It gives **information** regarding the history of life on earth. ✓
- Gives indications of the **climate** and the **environment** of mya (2)

3.4.5 Sedimentary ✓ rock (1)

3.4.6 Ice pits ✓ / tar ✓ / Sap of trees (2)

3.4.7 Most land animals do not die in sediments ✓ and therefore do not form fossils. / Unfavourable conditions prevent fossilisation.
Soft bodied organisms never fossilise. (1)

3.4.8 The plant or animal die✓
It is rapidly covered with sediment ✓
Soft tissue decay, ✓ hard parts such as bone or shells remains ✓intact as the organic matter is hardened.
More layers of sediment form over hundreds of years. ✓
Sediment is cemented together and layers compressed. ✓
Sediment solidifies and form sedimentary rock. ✓ (Any 5) **[15]**

Question 3: 50

Grand Total: 15