MEMORANDUM REVISION PAPER A

SECTION A

QUESTION 1

1.1.1 B✓

1.1.2 C✓

1.1.3 C✓

1.1.4 D✓

1.1.5 A✓

1.1.6 D✓

1.1.7 C✓

1.1.8 D✓

1.1.9 D✓

1.1.10 B✓

[10]

1.2.1 proton✓

1.2.2 diffusion✓

1.2.3 density ✓

1.2.4 element✓

1.2.5 liquid ✓

[5]

Section A: [20]

AFDELING B
VRAAG 2

2.1.1 The experiment to determine if a green leaf ✓ will produce starch during photosynthesis. ✓ (1)

2.1.2 'A green leaf ✓ that was exposed to sunlight will contain starch.✓ **OR** A green leaf ✓ that was exposed to sunlight will test positive for starch. ✓ (2)

2.1.3 Chlorophyll in the leaf. ✓ (1)

2.1.4 Starch is present in the leaf. ✓ (1)

2.1.5 The iodine changes from brownish – orange to dark – blue black ✓ which indicated that the leaf or other part of the plant contains starch ✓ (2)

[7]

QUESTION 3

3.1.1 An ecosystem consists of the ecological community that includes all living organisms such as plants and animals✓, together with the non-living environment such as temperature, wind, water, interacting as a system. ✓ (2)

3.1.2 The environment change continuously **OR** and if organisms does not adapt to these changes, they will become extinct ✓ (1)

3.1.3 The leopard is camouflaged due to its colouring and spots. This helps it to hide away from its prey so that it can get close to it as possible before chasing. ✓ The leopard is adapted to run fast over short periods in order to catch its prey. ✓ It has a light streamlined body with strong legs. ✓
It has a tail for balance to turn sharp corners while chasing. ✓
(any 2 relevant answers) (2)

3.1.4 The impalas are primary consumers and use about 90 % of the energy that they get from the grass, transferring about 10 % to the leopards to consume. There therefore needs to be more impalas than leopards in order to make sure that the leopards are supported in terms of food supply. ✓ Also to ensure that the leopards do not eat all the impalas and the impala population does not die out. ✓ (2)

3.1.5 If the shrubs and grass are burned all the animals would suffer.
There be no food for the primary consumers and they may die out. ✓
This would therefore result in all the secondary and tertiary consumers be affected. ✓ (2)

3.2.1 D, ✓ the producers are organisms that are able to produce their own organic food during photosynthesis. ✓ (2)

3.2.2 The organisms in each level use most of the energy (90%) for their own life processes. ✓ The consumers at the top of a food pyramid has much less energy available to them and only a few consumers can be supported.✓ (2)

3.2.3 Primary consumers **OR** herbivores **OR** omnivores✓ (1)
3.2.4 A✓ and B.✓ (2)
3.2.5 Decomposer(s)✓ (1)
[17]
Section B : [24]

SECTION C

QUESTION 4

4.1.1 Hydrogen ✓ (1)

4.1.2 Sodium ✓ (1)

4.1.3 Carbon✓ (1)

4.1.4 Neon ✓ (1)

4.1.5 Magnesium ✓ (1)

4.2.1 Funnel ✓ (1)

4.2.2 Filtration✓ (1)

4.2.3 Filtrate✓ (1)

4.2.4 Water **OR** salt ✓ (1)

[9]

QUESTION 5

5.1.1 A✓ Consist of 2 atoms. ✓ (2)

5.1.2 The forces between particles of solids are the strongest.✓Forces between gas particles are very weak, ✓while for liquids the forces between the particles are stronger than those of gases and weaker than those of solids. (3)

5.1.3 Twee Types✓ (1)

5.1.4 **A**✓Spaces between particles of gasses is the largest OR the forces of attraction is smaller is the smallest and particles can move freely. ✓ (2)

5.1.5 Particles in solids does not move around, they only vibrate on the spot. ✓ so it it not possible for the particles to travel from a place of high density to a place of lower density. ✓ (2)

5.2.1 Measuring cylinder✓ (1)

5.2.2 60 cm ✓ (1)

5.2.3 60✓ – 40✓ = 20 cm✓ (3)

[15]

QUESTION 6

6.1 magnesium oxide✓ (1)

6.2 The same amount of atoms before and after the reaction. ✓✓ (2)

6.3 Before the reaction, all the magnesium atoms were bonded with each other and all the oxygen atoms were bonded with each other. ✓
After the reaction the magnesium atoms have bonded with the oxygen atoms. (2)

6.4 solid phase✓ Particles is close together (attracted to each other) (2)

[7]

SECTION B and C:[55]

TOTAL: [70]

MEMORANDUM REVISION PAPER B

SECTION A

QUESTION 1.1

1.1.1 C✓

1.1.2 A ✓

1.1.3 B✓

1.1.4 D✓

1.1.5 B✓

1.1.6 C✓

1.1.7 C✓

1.1.8 B✓

1.1.9 C ✓

1.1.10 D✓ **[10]**

QUESTION 1.2

1.2.1 Respiration✓

1.2.2 Trophic level(s)✓

1.2.3 Micro-organism(s)✓

1.2.4 Proton(s)✓

1.2.5 Particle model of matter✓ **[5]**

TOTAL SECTION A:[15]

SECTION B

QUESTION 2

2.1 Plants (green / contain chlorophyll) use carbon dioxide (from the air), water (from the soil) and energy from the Sun✓ (in a series of chemical reactions) to produce glucose (food).✓ (2)

2.2 glucose + oxygen✓ → energy + carbon dioxide + water✓ (2)

2.3.1 Respiration✓ (1)
2.3.2 Both✓ (1)

2.4 Plants change glucose into starch. ✓**OR**
Starch is a more complex form of glucose. ✓**OR**
Many glucose molecules form a starch molecule. ✓ (1)
[7]

QUESTION 3

3.1 Producers make their own food.✓
Consumers obtain food from plants,✓ either directly (herbivores) or indirectly (carnivores). (2)

3.2.1 Grass **OR** Shrubs✓ (1)

3.2.2 Hawk **OR** Fox ✓ (1)

3.2.3 Thrush ✓ (1)

3.2.4 Hawk **OR** Fox **OR** Weasel✓ (1)

3.3 The prey population will explode.✓ When prey become scarcer, the predator population declines until the prey is again more abundant.✓ Therefore, the two balance each other. ✓ **OR**
If the hawk is removed, the number of birds, rabbits, squirrels and mice will increase.✓ This will result in the numbers of caterpillars to reduce as well as the amount of grass and shrubs.✓ If there is no food for the primary consumers they will starve and can die out (become extinct). ✓ (3)

3.4.1 Structural✓ (1)

3.4.2 Functional **OR** Structural✓ (1)

3.4.3 Structural✓ (1)

3.4.4 Functional✓ (1)

3.5 The environment changes continuously✓ and if organisms do not adapt to these changes, they will become extinct.✓ (2)
[15]

QUESTION 4

4.1 HIV **OR** HI-virus **OR** Human Immunodeficiency Virus✓ (1)

4.2 yoghurt / cheese / bread / beer ✓ (1)

4.3 penicillin✓ (1)

4.4 Louis Pasteur✓ (1)

[4]

TOTAL SECTION B:[26]

SECTION C

QUESTION 5

5.1.1 C✓ (1)

5.1.2 A✓ (1)

5.1.3 D✓ (1)

5.1.4. E✓ (1)

5.2 In a gas, the particles...

- have no particular arrangement. ✓
- move very fast. ✓
- have extremely weak forces between them. ✓
- have very big spaces between them✓ compared to solids and liquids. (4)

5.3.1 Diffusion is a process in which particles in liquids and gases move (separate and spread) from a highly-concentrated area✓ to an area with a lower concentration of those particles.✓ (2)

5.3.2 Diffusion in liquids occurs slower than diffusion in gases.
OR
Diffusion in gases occurs faster than diffusion in liquids. ✓ (1)

5.3.3 Particles in solids do not move around, they only vibrate on the spot.✓
Thus it is not possible for the particles to travel from a place of high density to a place of lower density. ✓ (2)

[13]

QUESTION 6

6.1.1 The density of a material describes the amount of mass✓ in a given volume of that material. ✓ (2)

6.1.2 ice✓ water✓ sand ✓ (MUST be this order) (3)

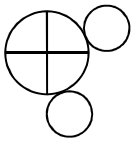
6.2.1 Iron✓ (1)

6.2.2 The ship is filled with air.✓ The (average) density of the ship is lower than the density of the water✓ and can float on the water. (2)

6.3 More air particles are pumped into the tin✓ which causes more collisions✓ with the lid and the sides of the tin. That will increase the pressure✓ inside the tin and the lid will pop off. (3)

[11]

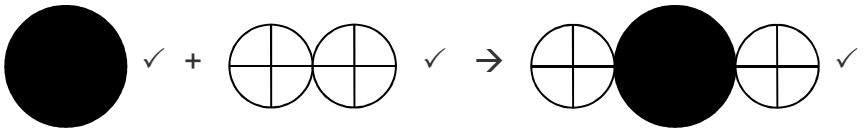
QUESTION 7

7.1.1 

One oxygen atom ✓

Two hydrogen atoms ✓

(2)

7.1.2 

✓ + ✓ → ✓ (3)

[5]

SECTION C:[29]

GRAND TOTAL: [70]

MEMORANDUM REVISION PAPER C

SECTION A

QUESTION 1

1.1.1 D✓
1.1.2 B✓
1.1.3 B✓
1.1.4 B✓
1.1.5 A✓
1.1.6 C✓
1.1.7 D✓
1.1.8 A✓
1.1.9 B✓
1.1.10 C✓

[10]

QUESTION 2

2.2.1 Extinction✓
2.2.2 Glucose✓
2.2.3 Camouflage✓
2.2.4 Prey✓
2.2.5 Pollution✓ **[5]**

QUESTION 3

3.1.1 C✓
3.1.2 F✓
3.1.3 B✓
3.1.4 E✓
3.1.5 H✓ **[5]**

TOTAL SECTION A: 20

SECTION B

QUESTION 4

4.1 750 000 + 250 000 = 1000 000✓ (1)

4.2 250 000✓ (1)

4.3 An overall increase✓ of TB patients that were diagnosed with HIV can be observed, but the increase is slowing down.✓
2004 → 2005 increase was 100 000 patients, while in the period 2005 → 2006 the increase was 50 000 patients. (2)

4.4.1 AIDS - Virus ✓ (1)

4.4.2 TB - Bacteria ✓ (1)

4.5 Decomposers are useful micro-organisms that play an important role in the ecosystem as they break down dead plant and animal matter. ✓

People use micro-organisms in the fermentation process when producing dairy products (yoghurt, cheese), brewing beer, making wine or baking bread.✓

Some micro-organisms are used for making medicine, like penicillin. ✓

(Any two advantages)

(2)

4.6 Use condoms during sexual intercourse. ✓
Do not share needles.✓
If you are HIV-infected and pregnant, talk to your health care provider about taking ARV's.✓
Protect cuts, open sores, and your eyes and mouth from contact with blood. ✓

(Any two preventions) (2)

[10]

QUESTION 5

5.1 respiration ✓

5.2 carbon dioxide✓

5.3 oxygen✓

5.4 oxygen✓

5.5 carbon dioxide✓

5.6 glucose✓

5.7 energy✓ **[7]**

QUESTION 6

6.1 locust ✓ (1)

6.2 mushrooms ✓ (1)

6.3 grass → locust → small bird → eagle → mushroom
Grass first✓
Mushroom last ✓
All the others in the correct order. ✓ (3)

6.4 Plants/grass.✓ Plants are in a lower trophic level than animals. Energy comes directly from the sun and is absorbed by plants. ✓ This energy is then consumed by animals and the biggest part of the energy is used for life processes. Therefore, if you consume animals, you will get access to less energy than if you consume the same amount of plants.✓ (3)
[8]

QUESTION 7

7.1.1 O✓ (Accept: O_2) (1)

7.1.2 N✓ (Accept: N_2) (1)

7.2 A – Compound✓
B – Mixture✓
C – Element✓
D - Compound✓ (4)

7.3 The kinetic energy of water particles increases✓ when heated.
The particles move faster and travel over larger distances.✓ The open spaces between water particles increase✓ and the forces between water particles become weaker / less effective✓ when water changes phase from a liquid to a gas. (4)
[10]

QUESTION 8

8.1 What effect will an electric current✓ have on a copper chloride solution?✓ (2)

8.2 Electrolysis is the decomposition (breaking down) of a compound✓ into elements by using an electric current.✓ (2)

8.3 Gas/Cl_2/Chlorine✓ bubbles✓ are formed/liberated.
OR
Chorine gas✓ can be smelled. ✓
OR
Yellow-green✓ gas✓ be seen. (2)

8.4 Cl_2 or $C\ell_2$✓ (**Do not accept Cl**) (1)

8.5 Electric energy✓ is converted to chemical energy.✓ (2)

8.6 Mixture.✓ (1)
[10]

QUESTION 9

9.1 Density is defined as the mass✓ per unit volume✓ of a substance.
OR
Density is the amount of mass✓ in a given volume. ✓ (2)

9.2 Decrease.✓
When heated, the volume of the substance will increase while the mass remains the same.✓
Because Density = mass / volume, the density will decrease. (2)

9.3 White grape juice.✓ (1)
[5]

TOTAL SECTION B: 50
GRAND TOTAL: 70