



GRADE 8
TIME: 2 HOURS

NATURAL SCIENCES

JUNE 2015
MARKS: 100

MEMORANDUM

SECTION A

QUESTION 1

1.1.1 D✓

1.1.2 C✓

1.1.3 C✓

1.1.4 B✓

1.1.5 B✓

1.1.6 D✓

1.1.7 D✓

1.1.8 C✓

1.1.9 A✓

1.1.10 A✓ **[10]**

1.2.1 proton✓

1.2.2 melting✓OR evaporation

1.2.3 density✓

1.2.4 compound✓

1.2.5 liquid✓ **[5]**

1.3.1 B✓

1.3.2 E✓

1.3.3 D✓

1.3.4 A✓

1.3.5 C✓

[5]

Section A: [20]

SECTION B

QUESTION 2

2.1.1 Disease A: HIV ✓ Disease B: Bacteria ✓ (2)

2.1.2 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 baking bread and baking bread. ✓

Some micro-organisms are used for the making of medicines (penicillin) ✓
(Name any two advantages) (2)

2.1.3 Use condoms during sexual activity, ✓

Do not share drug injection equipment; ✓

If you are HIV-infected and pregnant, talk with your health care provider about aking ARVs; ✓

If you are an HIV-infected woman, don't breast feed any baby; ✓

Protect cuts, open sores, and your eyes and mouth from contact with blood. ✓

(Name any 2 preventions) (2)

2.1.4 Tuberculosis is a treatable and curable disease ✓. However, drug treatment requires that a number of antibiotics be taken for a prolonged period of time, usually six to nine months. Some cases of tuberculosis are caused by mycobacteria that are resistant to the commonly used anti-tuberculoses drugs. ✓ (2)

2.1.5 1750 ✓ (1)

2.1.6 in the range of 400 – 490 ✓ (1)

2.1.7 For the period 2004 -2011 the number of TB and patients with known HIV status increased, however the increase in the number of TB patients was more rapid than the patients with known HIV status.

OR

The number of TB patients increased from approx. 250 in 2004 to just below than 2500 in 2011, whereas the number patients with known HIV status increased from approx. 100 to approx. 600. (2)

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QUESTION 3

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

3.1.2 B ✓ and C ✓ (2)

3.1.3 Primary consumer ✓ (1)

3.2.1 snakes ✓ (1)

3.2.2 caterpillars ✓ (1)

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QUESTION 4

4.1 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)

4.2.1 cheetah ✓

4.2.2 vulture ✓ OR hyena ✓ **(Any 1 scavenger)** (2)

4.3 Scavengers feed on dead animals in an ecosystem. ✓ (1)

4.4 Feeding relationships: there are different types evident, herbivory, predation scavenging. ✓

Competition: when organisms from different species compete for the same limited resource. ✓

Symbiosis: eg mutualism, parasitism, commensalism. ✓

(A learner should identify any one type and example of relationship and explain.) (2)

4.5 If all the zebra died, the ecosystem would become unbalanced. ✓ The cheetah would not have a food source and they would also in turn suffer and starve. ✓ The hyena would also have a depleted food source. ✓ The grazing of the zebra also had an effect on the plants, so if all the zebra died, the grass growth would increase. ✓ **(Any 2 explanations)(2)**

4.6 The cheetah is camouflaged due to its colouring. ✓

The cheetah is adapted to run fast over short periods of time in order to catch its prey. ✓

It has a light streamlined body with strong legs. Its tail is used for balance to turn sharp corners while chasing. ✓

The cheetah has good eye sight allowing it to see its prey from far. ✓

It has retractable claws to catch it's prey. ✓

(Any two adaptations)(2)

[11]

QUESTION 5

5.1 Process A: photosynthesis ✓

5.2 Process B: respiration ✓

5.3 chloroplast ✓

5.4 mitochondria ✓

5.5 carbon dioxide ✓

5.6 oxygen ✓

5.7 oxygen ✓

5.8 carbon dioxide ✓

5.9 glucose ✓

5.10 energy ✓

Section B : [40]

SECTION C

QUESTION 6

- 6.1.1 Sodium ✓ (1)
- 6.1.2 Ne ✓ (To name the noble gas is not acceptable) (1)
- 6.1.3 O ✓ OR Oxygen ✓ (1)
- 6.1.4 Mg^{2+} ✓ ✓ (2)
- 6.1.5 Be ✓ OR Berillium ✓ (1)

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- 6.2.1 C ✓ (1)
- 6.2.2 The forces between particles of solids are the strongest; ✓ between gases they are so weak that they can be ignored ✓ while for liquids they are stronger than those of gases and weaker than those of solids. ✓ (3)
- 6.2.3 C ✓ (1)
- 6.2.4 You can change State B (solid) to State A (gas) by increasing the temperature ✓ or lower the pressure. ✓ (2)

[7]

QUESTION 7

- 7.1.1 1.0 g/cm^3 ✓ (1)
- 7.1.2 water is denser than wood . ✓ OR
wood is less denser than water. ✓ OR
wood has a smaller density than water. ✓ (1)
- 7.1.3 Total volume of wooden block = side x side x side. ✓
 $V_w = 8\text{cm} \times 8\text{cm} \times 8\text{cm}$. ✓
 $V_w = 512 \text{ cm}^3$ (Total volume of wooden block)
 $V_w = 512 / 2 = 256 \text{ cm}^3$ ✓ (Total volume of water displaced) (3)

OR

volume of displaced water = side x side x side. ✓

$$V_w = 8\text{cm} \times 8\text{cm} \times 4\text{cm}. \checkmark \quad (\text{height of block which is submerged under the water})$$

$$V_w = 256 \text{ cm}^3 \quad \checkmark$$

7.1.4 density = Mass divided by Volume OR M / V .

$$= 32\text{g} / 256\text{cm}^3. \quad \checkmark$$

$$= 0,125 \checkmark \text{ g/cm}^3 \quad \checkmark \quad (3)$$

[8]

QUESTION 8

8.1.1 The egg looks different. ✓ Bubbles were observed on the egg shell ✓ and afterwards there was a foamy scummy layer floating on top of the vinegar. ✓ **(Any 2 observations)** (2)

8.2 egg shell. ✓ + vinegar. ✓ (2)

8.3 The reactants were used to make / produce the products. . ✓ (1)

8.4 calcium acetate. ✓ + carbon dioxide . ✓ + water . ✓ (3)

8.5 CO_2 ✓ (1)

[9]

QUESTION 9

9.1.1 chemical effect ✓ (1)

9.1.2 electrolysis ✓ (1)

9.1.3 electrolyte ✓ (or copper chloride solution) (1)

9.1.4 carbon or graphite ✓ (1)

9.1.5 A ✓ (1)

9.1.6 cathode. ✓ (1)

9.1.7 chlorine gas ✓ (1)

9.1.8 $\text{CuCl}_2. \checkmark \rightarrow \text{Cu(s)} \checkmark + \text{Cl}_2 \text{ (g)} \checkmark$ (3)

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Section C: [40]