



GRADE 8
TIME: 1½ HOUR

NATURAL SCIENCES

JUNE 2016
MARKS: 70

MEMORANDUM

SECTION A

QUESTION 1

1.1 B ✓

1.2 C ✓

1.3 D ✓

1.4 B ✓

1.5 A ✓

1.6 A ✓

1.7 C ✓

1.8 C ✓

1.9 D ✓

1.10 A ✓

[10]

QUESTION 2

2.1 E ✓

2.2 A ✓

2.3 D ✓

2.4 B ✓

2.5 C ✓

[5]

TOTAL SECTION A: [15]

SECTION B**QUESTION 3**

- 3.1 After the Iodine is added, the areas on the leaf that contain starch will turn blue-black.✓
OR
The leave that was exposed to sunlight will contain starch.✓
OR
The leave that was exposed to sunlight will test positive for starch.✓ (1)
- 3.2.1 Whether the leave has been exposed to sunlight or not.✓
OR
Whether photosynthesis took place in the leave or not.✓ (1)
- 3.2.2 Colour change✓ of the iodine solution.
OR
Whether the iodine turns purple/blue/black or remains brown.✓ (1)
- 3.3 To compare a negative test for starch against a positive test for starch.✓ (1)
- 3.4 Put the plant in a dark place for 24 hours or for more than a day.✓
OR
Cover one or more leaves with foil or dark paper.✓ (1)
- 3.5 To remove the waxy layer (cuticle), which prevents the entry of the iodine solution.✓
OR
To rupture the cell membranes.✓
OR
To stop all chemical reactions in the leaf.✓ (Any ONE) (1)
- [6]**

QUESTION 4

- 4.1.1 Arrow heads are pointing in the wrong direction.✓
OR
Energy is flowing in the wrong direction.✓ (1)
- 4.1.2 Cabbage → Caterpillar → Bird → Cat.

1 mark for the correct order of the organisms in the food chain.✓
1 mark for the correct direction of the arrows. ✓ (2)
- 4.1.3 It is the source of energy in the food chain.✓
OR
It is the producer in the food chain. ✓
OR
It converts sunlight energy into chemical energy.✓ (1)

- 4.1.4 The population or numbers of caterpillars will increase.✓
AND
 The population or numbers of cats will decrease✓ and the cats can become extinct. (2)
- 4.2.1 D✓ (1)
- 4.2.2 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)
- 4.2.3 Primary consumers **OR** herbivores **OR** omnivores✓ (1)
- 4.2.4 A✓ and B.✓ (2)
- 4.2.5 Decomposer(s)✓ (1)
[13]

QUESTION 5

- 5.1 Virus ✓ (1)
- 5.2 Own blood coming into contact with infected blood.✓
OR
 Sexual intercourse.✓ (ANY ONE) (1)
- 5.3 Promiscuous people.✓
OR
 Drug users✓ sharing needles. (ANY ONE) (1)
- 5.4 Their immune system is low or weak.✓
OR
 The body cannot defend itself against microorganisms or diseases.✓
OR
 HIV destroys the immune system of the body and leaves the victim without any defence against diseases.✓ (ANY ONE) (1)
- 5.5 Pneumonia✓ **OR** Cancer✓ (1)
[5]

QUESTION 6

- 6.1.1 Compound✓
 6.1.2 Element✓
 6.1.3 Element✓
 6.1.4 Compound✓ (4)
- 6.2.1 Twenty-four✓
 6.2.2 Three✓
 6.2.3 Forces **OR** Chemical bonds✓ (3)
[7]

QUESTION 7

- 7.1 Filtration✓ (1)
 7.2 Electrolysis✓ (1)
 7.3 Process A✓ (1)
 7.4 Process B✓ (1)
 7.5 Process B✓ (1)
 7.6 Process A✓ (1)
[6]

QUESTION 8

- 8.1.1 Melting✓ (1)
 8.1.2 Evaporation✓ (1)
 8.1.3 Condensation✓ (1)
 8.1.4 Solidification or Freezing✓ (1)
- 8.2.1 They have the same volume.✓ (1)
 8.2.2 Brick✓ (1)
 8.2.3 Brick.✓
 There are smaller or fewer spaces between the particles in the brick than in the loaf of bread.✓
OR
 The particles in the brick is packed more tightly together than in the loaf of bread.
OR
 There are more particles in the brick in the given volume than in the loaf of bread.✓
OR
 $\text{Density} = \frac{\text{Mass}}{\text{Volume}}$, so if the volumes are the same, the brick with the bigger mass will have the greater density. ✓ (2)

- 8.3 There are large empty spaces✓ between gas particles. As the gas is compressed the gas particles move closer to one another✓, thus allowing the gas to occupy a smaller volume (smaller container). (2)
[10]

QUESTION 9

- 9.1 No✓ (1)

- 9.2 No.✓
When the ball expands the particles inside the ball only move further apart, ✓ but the ball does not gain any mass. (2)

- 9.3 The ball will contract to the same size as before,✓ because it has not gained or lost any mass.✓
OR
The ball will contract to the same size as before✓ because the particles move slower and closer together as the ball cools down.✓ (2)

- 9.4.1 Energy✓ (1)

- 9.4.2 Particles move faster.✓ (1)

- 9.4.3 Spaces get bigger.✓ (1)
[8]

TOTAL SECTION B: [55]

GRAND TOTAL: [70]