

Short answers to the exams: Biology

1. Cell and Osmosis

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| 1. correct drawing 2 P, each of the five structures (of page 10) 1P | 7P |
| 2. due to osmosis water molecules enter the cell (1P) and it gets inflated, doesn't burst because of the cell wall (1P) | 2P |
| water molecules enter due to osmosis (1P) and eventually it bursts, because the cell membrane can't bear the pressure (1P) | 2P |
| 3. a lot of sugar creates an environment which is not suitable for the growth of single cell organism (1P), due to the osmotic pressure (1P), all the cells (microorganism) will dry out (1P) | 3P |
| 4. 2, 4 correct, false one 0.5 P reduction, only 2, 4 1P extra | 3P |
| | <hr/> 17P |

2. Cardiovascular system

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| 1. 2,5,6,7,10,12 are correct | 6 P |
| 2. the valves prevent the blood from flowing into the wrong direction (1P), in the heart from flowing back into the atrium when the ventricle contracts (1P), in the veins the blood has no pressure, and therefore the valves are needed that it doesn't flow backwards at all(1P), the blood in the arteries has a high pressure from the heart and therefore doesn't need valves (1P) ⇒ | 4 P |
| 3. (no tobacco if he consumes at all...), healthier food 1 P (less animal fat, more whole grain products, less sweet stuff) 1 P, daily exercise 1P, | 3 P |

Total points	13
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3. Photosynthesis

- correct ones are: 1, 3, 4, 7, 10, 12
- nothing (1), the iodine can't reach the starch molecules because the cell membrane is still intact (1) and is a barrier for the iodine.
- the plant uses up all the starch molecule (1) to gain energy (1) and molecules (1) to live.
- a) $6 \text{ CO}_2 + 12 \text{ H}_2\text{O} \longrightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{ H}_2\text{O} + 6 \text{ O}_2$ (2) sunlight (1)
 b) from the water molecules (1) in a separate reaction (light reaction) (1)

total points:	16
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