

**Student 2: Ethan Clarke (ID: 24114)**

**01.1 Organ**

**01.2** Palisade mesophyll → Contains the most chloroplasts. Spongy mesophyll → Contains many air spaces.

**01.3 Transpiration**

**01.4 Lignin**

**01.5** To let the sunlight pass through it to reach the palisade layer, which is where photosynthesis happens.

**01.6 stomata, guard cells**

**01.7 permanent vacuole**

**01.8 Active transport**

**01.9 Mitochondria**

**02.1** It is a physical barrier that stops germs getting in.

**02.2** I'm not sure.

**02.3** pH1 killed  $210-23 = 187$ . pH5 killed  $216-185 = 31$ . The difference is 150.

**02.4** It's an anomaly.

**03.1** Platelets → Help clot the blood where the vaccine was injected. White blood cells → Produce antibodies to the measles virus.

**03.2 1968**

**03.3** The number of people with measles was high and then it started to go down after 1968 when the vaccine was introduced. Before that it went up and down a bit.

**03.4** The percentage decreased.

**03.5** Parents were worried their children would get condition X.

**03.6** Have the research peer reviewed.

**03.7** The author was influenced by money.

**04.1** For starch you use iodine, it goes blue-black if starch is present. For sugar you use Benedict's and heat it, it goes from blue to brick red.

**04.2** amylase, sugar

**04.3** The type of bread

**04.4** White bread is digested the fastest. Wholemeal is digested the slowest.

**04.5** He repeated it and calculated a mean to make it more reliable.

**04.6**  $58+55+61 = 174$ .

**04.7** Each person's sense of taste is different.

**05.1 Ionising radiation, Viruses**

**05.2 Mitosis**

**05.3** grow, replicate

**05.4** 20%

**05.5** Chromosomes are pulled to each end of the cell.

**05.6** cell membrane

**05.7**  $50\text{mm} / 800 = 0.0625\text{mm}$ .

**05.8** cells, people

**05.9** placebo

**06.1** size of potato, type of potato

**06.2** pat it dry

**06.3** weighing scales

**06.4** 0.1 g

**06.5** D

**06.6**  $1.1 / 6.0 = 0.183$ . So 18.3%.

**06.7** Bar chart

**06.8** water, osmosis, permeable (membrane)

**06.9**  $0.1 \text{ mol/dm}^3$

**07.1** Arteries

**07.2** It acts as a pump to move blood around the body, delivering oxygen and nutrients to vital organs like the brain.

**07.3** To get oxygen into the blood for respiration.

**07.4** statin

**07.5** It is a tube that is inserted into a blocked artery to hold it open. This allows blood to flow freely again.

**07.6** Smoking increases the risk of all the diseases. The risk is highest for disease H.

**07.7** *[Student draws the bars correctly and labels them, but the y-axis scale is non-linear (e.g. 10, 20, 40, 80)]*

**07.8** A lack of exercise.

**08.1** In the nucleus.

**08.2** A, D and E

**08.3** In CF, thick mucus blocks the pancreas, so digestive enzymes can't get to the small intestine. This means food isn't digested properly. Because food isn't broken down, the nutrients can't be absorbed into the blood. Without nutrients and energy from food, a person can't build muscle or store fat, so they find it hard to gain body mass.

**08.4** 1. They have a large surface area. 2. They have thin walls. 3. They have a rich blood supply.

**08.5** Less oxygen means less aerobic respiration, so less energy is released. The body might try to do more anaerobic respiration, which produces lactic acid and causes fatigue.

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