

### Question 1

- 01.1 organism
- 01.2 Palisade -> many air spaces, Spongy -> most chloroplasts (incorrectly swapped)
- 01.3 transpiration
- 01.4 glucose
- 01.5 So light can pass through for photosynthesis. The palisade cells need it.
- 01.6 pores, guard cells
- 01.7 cell sap
- 01.8 active transport
- 01.9 chloroplasts

### Question 2

- 02.1 Skin produces antimicrobial oils.
- 02.2 63/210 which is 3/10
- 02.3 pH1 killed:  $210 - 23 = 187$ . pH5 killed:  $216 - 185 = 31$ . Difference:  $187 - 31 = 156$ . Number = 156
- 02.4 He found the midpoint between the pH1 value (23) and the pH3 value (63).  $(23 + 63) / 2 = 43$ .

### Question 3

- 03.1 (Lines drawn correctly)
- 03.2 1968
- 03.3 It increased until about 1958, then stayed high, then dropped fast after 1968.
- 03.4 It decreased then increased a bit.
- 03.5 (Parents were worried their children would get condition X - box ticked)
- 03.6 (Publish the research on the internet - box ticked)
- 03.7 (small sample size - answer written)

### Question 4

- 04.1 Starch: add iodine. If it's there it goes blue. If not it stays brown. Sugar: add benedicts. If it's there it goes green/orange. If not it stays blue.
- 04.2 amylase, sugar
- 04.3 (The type of bread - box ticked)
- 04.4 White bread takes 35s. Wholemeal takes 57s.
- 04.5 Repeated the test 3 times for each bread type and then calculated the mean average.
- 04.6  $(58 + 55 + 61) / 3 = 58$  seconds
- 04.7 (Each person's sense of taste is different - box ticked)

### Question 5

- 05.1 (Antibiotics, Ionising radiation - boxes ticked)
- 05.2 (Mitosis - box ticked)
- 05.3 grow, replicate
- 05.4 (40% - box ticked)
- 05.5 (Chromosomes are pulled to each end of the cell - box ticked)

05.6 cell wall

05.7  $50\text{mm} / 800 = 0.0625\text{mm}$ .  $0.0625\text{mm} \times 1000 = 62.5\mu\text{m}$ .

05.8 cells, people

05.9 placebo

### **Question 6**

06.1 Potato type, time in solution

06.2 Pat it dry with a paper towel.

06.3 balance

06.4 (0.1 g - box ticked)

06.5 (A - box ticked)

06.6  $(1.1 / 6.0) \times 100 = 18.3\%$

06.7 (Bar chart - box ticked)

06.8 minerals, diffusion, permeable

06.9  $0.2 \text{ mol/dm}^3$

### **Question 7**

07.1 (Arteries - box ticked)

07.2 It pushes the blood around the body to deliver oxygen.

07.3 gives them air.

07.4 cholesterol

07.5 it's a mesh tube that holds the blood vessel open so more blood and oxygen can get to the heart muscle.

07.6 smoking always increases risk. The risk of disease G is 29%.

07.7 (All aspects of graph drawn and labelled perfectly)

07.8 stress

### **Question 8**

08.1 In the genes.

08.2 (A, D and E - box ticked)

08.3 CF means less enzymes are made. Food isn't broken down so it can't be absorbed. So less food is used by the body and you don't gain mass.

08.4 big surface area, thin walls, good blood supply

08.5 you get breathless

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