

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 light get to the lower layers for photosynthesis to happen.

01.6 stomata, guard cells

01.7 vacuole

01.8 Active transport

01.9 Mitochondria

02.1 It's a barrier and produces antimicrobial secretions.

02.2 $63/210 = 3/10$

02.3 187, 31, 156.

02.4 He calculated the mean of the result for pH1 and pH3. $(23+63)/2=43$.

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 It increases from 1945 to about 1956. Then it stays high until about 1968. Then it decreases sharply.

03.4 It decreased.

03.5 The health service in the UK did not have any vaccines.

03.6 Publish the research on the internet.

03.7 Small sample size.

04.1 Iodine test for starch, turns blue-black. Benedict's test for sugar, turns brick red when heated.

04.2 protease, sugar

04.3 The size of the piece of bread

04.4 White bread becomes sweet quickest. Wholemeal takes longest.

04.5 Repeated the test. Calculated a mean.

04.6 58s

04.7 Each person's sense of taste is different.

05.1 Ionising radiation, Viruses

05.2 Mitosis

05.3 grow, replicate

05.4 40%

05.5 The cell increases in size and mass.

05.6 cell membrane

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

05.8 plants, people

05.9 Placebo

06.1 size of potato, volume of solution

06.2 blot it dry

06.3 electronic balance

06.4 0.1 g

06.5 C

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

06.7 Line graph

06.8 water, diffusion, permeable

06.9 0.2

07.1 Capillaries

07.2 Pushes blood around the body to get oxygen to organs.

07.3 Puts oxygen in their lungs.

07.4 Statins

07.5 It widens the blood vessel to let blood through.

07.6 Smoking increases your risk of cardiovascular disease.

07.7 *[Student completes the graph fully and correctly.]*

07.8 lack of exercise.

08.1 nucleus

08.2 B, C and D

08.3 CF means less enzymes are made like lipase and protease. This means that fat and protein in food is not digested. This means it can't be absorbed. So the person won't get enough energy from their food so they can't gain weight. They will also have less energy for things like movement because of less respiration.

08.4 big surface area, thin walls, good blood supply.

08.5 Less oxygen means less aerobic respiration so less energy is released. The body will do anaerobic respiration instead which is less efficient.