Candidate evidence

Question 1(a)(i)

Response 1

(i) Cell membranes are found in all of these cell types.
Describe the function of the cell membrane.

to control / decide what enters or leaves the cell.

Question 5(c)

Response 1

(c) State a reason, other than growth, why cells continue to be produced throughout life.

to repair (damaged cells)

Response 2

(c) State a reason, other than growth, why cells continue to be produced throughout life.

so if they become damaged they can be repaired.

Question 5(d)

Response 1

(d) Lymphocytes and phagocytes are specialised white blood cells.

Describe the different ways in which these two types of cell destroy pathogens.

phagocytes eat the pathogens and destroy them

Lymphocytes kill the pathogens

Response 2

(d) Lymphocytes and phagocytes are specialised white blood cells.

Describe the different ways in which these two types of cell destroy pathogens.

lymphocytes produce antibodies which destroy pathogens. The antibodies are complementary to one type of pathogen. Phagocytes undergo the process phagocytis which engulfs pathogens and digests them using enzymes

Response 3

(d) Lymphocytes and phagocytes are specialised white blood cells.

Describe the different ways in which these two types of cell destroy pathogens.

Lymphocytes attack the pathogens with antibodies whereas phagocytes consume pathogens to destroy them.

Question 6(c)

Response 1

A response is triggered in the pancreas. pancreas transports the hormone glucagon thro blood stream as it is a chemical ~~that~~ to the liver. messenger. Hormone glugacon ~~it~~ turns glycogen into glucose, which is then used to return the glucose levels back to normal. Glucagon is target is the receptors ~~on~~ at the liver as they are complementry to each other. Hormones are released by the endocrine gland.

Response 2

Describe how blood glucose is returned from low to normal levels in the human body.

When blood glucose levels get to low the pancreas releases insulin which travels through the blood to the liver where ~~a series of enzyme controlled turn it from~~ The glucose is stored through a series of enzyme controlled reactions the glucose is turned to glucagen which raise the blood glucose levels to normal

Question 7(a)(i) and (ii)

Response 1

(i) Explain what is meant by the term homozygous. 1

Homozygous means the two phenotypes are the same.

(ii) The dwarf characteristic is recessive.

Using the information given, explain how this is known. 1

One of ~~The~~ the parent plants had two ~~vessesi~~ recessive phenotypes while the other plant had two dominant phenotypes. The dwarf characteristic is known to be recessive because the whole of the F_1 generation were tall. ~~which we were told was~~

Question 8(c)

Response 1

(c) Identify the structural feature of a single villus, that is also found in an alveolus, which increases the efficiency of absorption.

thin walls for gas exchange

Question 9(c)

Response 1

(c) The second injection caused a higher concentration of antibody to be produced than the first.

Give **two** other differences in the antibody production in response to the two injections.

1 Increased ~~ese~~ in concentration of antibody more rapidly after the second ~~ecn~~ injection than first injection

2 Took longer to decrease in concentration (after it's maximum) in injection 2 than injection 1

Question 12(d)(i)

Response 1

(d) (i) The students observed a species of lichen growing on some of the damper parts of the lawn.

Lichens are indicator species.

State what is meant by the term 'indicator species'.

An indicator species shows the level of pollution in an area.

Question 13(a)(ii)

Response 1

(ii) Explain the purpose of the control.

To prove that light and CO_2 are needed for photosynthesis to occur and for starch to be produced.

Question 13(a)(iii)

Response 1

(iii) Explain why experiment 2 is invalid.

has both CO_2 absorber and a black box.

Question 15(b)

Response 1

Stage 2: Plasmid is extracted from bacterial cell using enzymes.
Stage 3: Plasmid is cut open using enzymes.
Stage 4: Gene is inserted into plasmid
Stage 5: GM plasmid is inserted into host bacterial cell.
Stage 6: GM plasmids multiply

Response 2

(b) Describe the stages of the process that would be used to produce genetically engineered bacteria, after the required gene has been extracted from the source cell. 4

A section from the plasmid in the bacterial cell is extracted and the required gene from the source cell is the placed in the plasmid. The plasmid is placed back inside the bacterial cell. The process is carried out and multiplys with the gene still inside all the new cells.