B3.1 Pre-Unit Quiz Mark scheme

Qu	Answer	Marks	Supporting information for fix-it tasks
1a	C	1	Answering A is the common misconception that the cell wall and the cell membrane are the same or get confused. *Task: Showing different diagrams and micrographs of the cell wall and the cell membrane alongside comparing their functions should practise differentiating these parts.* Answering the distractor B shows a lack of understanding of the different key words. *Task: Practising labelling cell diagrams or identifying errors on mislabelled cell diagrams could address this.*
1b	B	1	Answering the distractor A shows that the term 'control' is confused when comparing the functions of the nucleus and cell membrane. *Task: Writing a paragraph to compare the functions of the cell membrane and the nucleus would reinforce the different functions.* Answering C shows that there is a lack of understanding that the largest, roughly circular structure is the nucleus rather than chloroplasts (which are smaller, numerous and rod shaped). *Task: Showing different diagrams and micrographs of plant cells comparing labelling of the chloroplasts and the nucleus will practice differentiating these parts.*
2	C	1	Answering A or B shows a lack of understanding of either the function of the cytoplasm or how to label the cytoplasm in cell diagrams. *Task: Completing a table listing the cell parts in both animal and plant cells and listing the parts only in plants would summarise and practise this key residual knowledge.*
3	A	1	Answering B shows a lack of understanding of the key words 'unicellular' and 'multicellular'.

			Task: Discussing that uni = one and multi = many in the context of more familiar words (e.g. unicycle, unicorn, uniform and multicolour, multiply) will reinforce this vocabulary. Answering C shows an issue with reading the question, since there is no information to suggest that this is a plant cell. Or it may demonstrate confusion in the new context of a 'yeast cell'.
4a	C	1	Answering A shows a lack of understanding about how to improve the scientific drawing since drawing more cells wouldn't improve the quality of the drawing. *Task: Practise another 'how would you improve…' question, since this is a challenging AO3 skill.* Answering B shows that students understand that increasing the magnification could improve the amount of detail seen but not how to specifically improve the quality of the drawing. *Task: Practise another 'how would you improve…' question, since this is a challenging AO3 skill.*
4b	B	1	Answering the distractor A shows confusion about why we stain of cells to make them visible in the microscope and why we use microscopes to see cells more generally. *Task: Show a micrograph of red blood cells without staining to show that not all cells need iodine/methyl blue stains to see them.* Answering the distractor C shows confusion about a functions of a different piece of equipment from the microscope practical; the slide. *Task: Comparing the functions of the slide, stage and focussing wheels should reinforce that the slide is just where the specimen is placed so that focussing can happen. This can be done as an annotation of a diagram following a discussion or as a written paragraph.*
4c	C	1	Answering the distractors A or B shows confusion about the functions of different parts of the microscope.

			Task: Comparing the functions of the objective lens, eyepiece lens and focussing wheels should reinforce the different functions. This can be done as an annotation of a diagram following a discussion or as a written paragraph.
4d	B	1	Answering A or C shows a lack of understanding that there are several chloroplasts per cell or a lack of understanding that there are 10 cells shown each containing a stained dot. *Task: The dot stained is actually the nucleus because iodine solution stains cell walls and nuclei. Asking students why we need to stain cells and discussing that not all parts will be stained could address this.*
5a	A	1	Answering B shows a lack of understanding of the difference between structure and function. B is the potential function of the tail structure. *Task: Practise by comparing the structure and function of adaptations in other cell types, e.g. tail (structure) in sperm cell to swim t egg (function) or lots of chloroplasts (structure) in leaf cells to carry out more photosynthesis (function).* Answering C shows a lack of ability to apply knowledge in a new context since 'sperm cell' is a cell type with a tail that has been taught, but is not the focus of this question. *Task: Underlining the key information in the question (e.g. Euglena, adapted, moving) could improve focus on the key information in the question.*
5b	B	1	Answering A potentially shows a confusion with the several new key words starting with 'c'. *Task: Showing different diagrams and micrographs of plant cell and labelling the cytoplasm and chloroplasts, alongside comparing their functions, should practice differentiating these parts.* Answering C potentially shows knowledge that plant cells make their own food and that the vacuole is only found in plants. *Task: Discussing functions of the chloroplasts and vacuole then writing a comparative paragraph should reinforce the very different functions of these parts.*