

B1 – Cells Core Questions

	Question	Answer
1	What is a cell?	Cells are the basic building blocks of all living organisms
2	What is an organelle?	The small organ-like structures within a cell
3	What is a nucleus and what is its function?	The organelle that holds contains DNA which controls the cells activities
4	What is a cell membrane and what is its function?	Layer around the cell which controls substances moving in or out of the cell.
5	What is a cytoplasm and what is its function?	Jelly-like main component of cells where most chemical reactions happen
6	What is a mitochondria and what is its function?	A small cell organelle which is where respiration happens (energy release)
7	What is a ribosome and what is its function?	Small cell organelle that makes proteins
8	What is a cell wall and what is its function?	A tough outer layer of plant cells, made of cellulose that strengthens and supports the cell
9	What is a chloroplast and what is its function?	A small cell organelle where light is absorbed to carry out photosynthesis
10	What is a vacuole and what is its function?	A cell organelle that is filled with a sugary solution called sap to keep the cells turgid (firm)
11	What are the key structural differences between an animal cell and a plant cell?	Plant has cell wall, chloroplast and vacuole, which the animal cell does not
12	Give three examples of specialised cells in animals	Red Blood Cell, Nerve Cell, Muscle Cell
13	Give two examples of specialised cells in plants	Root Hair Cell, Palisade Cell
14	What are the three key structural features of a Nerve Cell which enable the cell to carry out its specialised function?	Thin and long, lots of connections, insulation around it.
15	How does a nerve cell's insulation support its function?	To help it keep electrical signals (impulses) travelling quickly
16	How does a nerve cell's length support its function?	Allows electrical signals (impulses) to be transmitted over long distances
17	How does a nerve cell's many connections support its function?	To transmit signals (impulses) to lots of other nerve cells
18	What are the two key structural features of a Muscle Cell which enable the cell to carry out its specialised function?	Lots of mitochondria for energy release and cells can slide over each other so they can contract
19	What is the function of a muscle cell?	To contract, to bring about movement, usually of a part of the skeleton
20	How do the number of mitochondria in a muscle cell support its function?	Many mitochondria for lots of energy release
21	What is surface area?	Is the measure of how much exposed area an object like a cell has
22	In a cell, what are the effects of large surface area?	Substances can enter and leave the cell at a greater rate
23	What are the three key structural features of a Red Blood Cell which enable the cell to carry out its specialised function?	Biconcave shape, no nucleus, lots of haemoglobin
24	How does the structure of the red blood cell support its function?	Maximises surface area. Maximises space for haemoglobin. Has haemoglobin to carry oxygen
25	How does the shape of the Red Blood Cell support its function?	Biconcave shape which maximises surface area

26	How does Haemoglobin support the function of the Red Blood Cell?	Haemoglobin carries oxygen
27	Why does a Red Blood Cell not have a nucleus?	To maximise space for haemoglobin
28	What are the two key structural features of a Root Hair Cell which enable the cell to carry out its specialised function?	Large Surface area, thin walls
29	How does a Root Hair Cell's surface area support its function?	Large surface area to maximise water absorption
30	What feature of a typical plant cell will we NOT find in a Root Hair Cell?	Chloroplasts
31	Why does the Root Hair Cell not contain chloroplasts?	It does not carry out photosynthesis (No light underground)
32	What are the two key structural features of a Palisade Cell which enable the cell to carry out its specialised function?	Lots of chloroplasts, forms a layer of cells near the top of the leaf
33	Why are Palisade Cells found at the top of the leaf?	So they can absorb as much light as possible (for photosynthesis)
34	Why do Palisade Cells contain many chloroplasts?	To absorb as much light as possible
35	Where in the leaf are palisade cells found?	At the top of the leaf
36	How does the structure of a palisade cell support its function?	The structure helps it absorb light to carry out photosynthesis efficiently
37	What is the 'Principle of Organisation' of living things?	Cells < Tissues < Organs < Organ Systems < Organism
38	What is a 'tissue'?	A tissue is a group of cells with a similar structure and function.
39	What is an organ?	Organs are groups of tissues performing specific functions
40	How do organs make up organisms?	Organs are organised into organ systems, which work together to form organisms.
41	What does Magnification mean?	The process of using a microscope to make something look bigger than it is
42	Name the parts of a microscope	Eyepiece lens, objective lens, stage, lamp, focusing control
43	What does focus mean?	Adjusting controls to make an image sharp and clear
44	How do you focus an image using microscope?	By turning the focussing control
45	How do you record an image from a microscope?	Draw what can be seen through the eyepiece lens