

CB1: Key Concepts in Biology - Core Questions

	Question	Answer
1	What is the function of the cell membrane?	To control which substances enter and exit the cell.
2	Name three structures that you might find inside a plant cell but <i>not</i> inside an animal cell.	Cell wall, vacuole, chloroplast.
3	What is the function of the vacuole in plant cells?	Stores cell sap.
4	What is the function of the cell wall in plants?	Contains cellulose to provide support.
5	Prokaryotic cells (e.g. bacteria) differ from eukaryotic cells (e.g. animal) in what way?	Prokaryotic cells don't have a nucleus (<i>they have chromosomal and plasmid DNA instead</i>)
6	What are the small loops of DNA in bacteria called?	Plasmid DNA
7	How do you calculate the total magnification of a microscope?	Eyeiece lens magnification x objective lens magnification
8	What is 30 μm in mm?	0.03 mm
9	What is 1150000 m in standard form?	1.15×10^6 m
10	How do you calculate the actual length of a magnified image?	Actual length = magnified length \div magnification
11	What device can magnify an image up to 2,000,000x?	Electron microscope
12	How have developments in microscope technology helped us understand more about cells?	A higher magnification has allowed us to see more detail including more sub-cellular structures .
13	Why might a scientist add methyl blue to an animal cell sample before viewing it under a microscope?	It is a stain that makes objects in the slide more visible .
14	How are the cells that line the small intestine specialised for their function of absorbing food?	They have many tiny folds called microvilli that give them a large surface area .
15	Sperm cells and egg cells are both haploid cells. What does haploid mean?	They contain half the number of chromosomes as a normal body cell.
16	Sperm cells require a lot of energy for movement. What adaptation helps them with this?	They have lots of mitochondria .
17	What are proteins broken down into during digestion?	Amino acids
18	Adding carbohydrase enzymes to which substance will get you glucose molecules?	Starch
19	What is an enzyme that breaks down fat called?	Lipase
20	What are fats broken down into during digestion?	Fatty acids and glycerol
21	What two word phrase best describes enzymes?	Biological catalyst
22	What is the uniquely shaped 'pocket' on the outside of an enzyme called?	The active site
23	What do we call substances that fit into the active site for enzymes to work on?	Substrates
24	Which model do we use to explain how enzymes work?	Lock and key model
25	State three conditions that might affect the rate at which an enzyme works.	Temperature, pH and substrate concentration

26	Which two conditions could affect the shape of an enzyme's active site?	Temperature and pH
27	How do we describe an enzyme whose active site has changed shape so much it no longer works?	Denatured
28	Name the process by which substances move from an area of high concentration to an area of lower concentration.	Diffusion
29	Name the process by which water molecules move across a semi-permeable membrane from an area with low solute concentration to an area with high solute concentration.	Osmosis
30	Name the process by which substances move from an area of low concentration into an area of higher concentration.	Active transport