

Biology – Cell biology

1. What type of cells are plant and animal cells?
Eukaryotic
2. What type of cells are bacterial cells?
Prokaryotic
3. Name five sub cellular structures found in animal cells.
Nucleus, cytoplasm, cell membrane, mitochondria, ribosomes
4. Plant cells have all the sub-cellular structures that animal cells have, but they often have two additional structures as well. Name them.
Chloroplasts and vacuole (also cell wall)
5. What is the name of microscopes that have a higher magnification and resolving power than light microscopes?
Electron microscopes
6. What is the calculation for magnification?
Magnification = $\frac{\text{size of image}}{\text{size of real object}}$
7. Why is cell division by mitosis important?
Growth and repair in eukaryotes
8. What is the name given to an undifferentiated cell of an organism which is capable of giving rise to many more cells of the same type?
Stem cell
9. State three places stem cells are found.
Embryos, adult bone marrow & meristem tissue in plants
10. Describe the spreading out of particles of any substance in solution or a gas by diffusion.
There is a net movement of particles from an area of high concentration to an area of low concentration.
11. Name three substances that either diffuse into or out of the blood.
Oxygen, carbon dioxide and urea
12. Describe the movement of water in osmosis.
Osmosis is the diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane
13. What is the name given to the movement of a substance from a more dilute solution to a more concentrated solution which requires energy from respiration?
Active transport

Biology - Organisation

14. What name is given to a group of cells with a similar structure and function?
Tissue
15. What name is given to an aggregation of tissues performing specific functions?
Organ
16. What feature of enzymes enables them to catalyse specific reactions in living organisms?
The shape of their active site
17. Where is amylase produced and what does it do?
In saliva and the pancreas to break down starch
18. Where are proteases produced and what do they do?
In the stomach and pancreas to break down proteins into amino acids
19. Where are lipases produced and what do they do?
In the pancreas to break down lipids to glycerol and fatty acids

Biology Paper 1 Key Knowledge Questions

20. What is made in the liver and stored in the gall bladder?

Bile

21. Where does the right ventricle pump blood to?

The lungs

22. Where does the left ventricle pump blood to?

The whole body

23. Where are the aorta, vena cava, pulmonary artery, pulmonary vein and coronary arteries found?

Connected to the heart

24. Name the three types of blood vessel.

Arteries, veins and capillaries

25. What is the blood made up of?

Plasma, RBCs, WBCs and platelets

26. What is the state of physical and mental well-being?

Health

27. State four causes of ill health.

Diseases, diet, stress and life situations

28. State a proven risk factor for type 2 diabetes.

Obesity

29. State three risk factors for cardiovascular disease.

Diet, smoking and exercise

30. What is the result of changes in cells that lead to uncontrolled growth and division?

Cancer

31. State four factors that affect the rate of transpiration.

Temperature, humidity, air movement and light intensity

32. Which cells are adapted for efficient uptake of water by osmosis, and mineral ions by active transport?

Root hair cells

33. What does xylem tissue transport?

Water

34. What do stomata and guard cells control in leaves?

Gas exchange and water loss

35. What does phloem tissue transport?

Dissolved sugars (food)

36. What is the movement of food molecules through phloem tissue called?

Translocation