

Cell Structure Questions

1. What is usually found in the cytoplasm of a plant cell?
2. True or false. If the eyepiece lens of a microscope is marked X10 and the objective lens is marked X4, the total magnification is X14.
3. If the magnification of a microscope eyepiece is X 10 and the magnification of the objective lens is X 40, what magnification results when a slide is viewed using both of these lenses?
4. What stain did you use for viewing plant cells on the slide?
5. State **two** features visible under a light microscope that indicate that cells are typical plant cells.
6. Name the stain that you used when examining an animal cell under the microscope.
7. Describe the difference in colour or depth of colour, if any, between the nucleus and cytoplasm when the stained cell was viewed under the microscope.
8. Where in a cell would you expect to find phospholipids?
9. State a function of each of the following components of a cell. (i) Ribosome, (ii) Cell membrane.
10. State **two** ways in which red blood cells differ from typical body cells e.g. from the cheek lining.
11. Name **two** features of a plant cell which are not normally associated with an animal cell.
12. The liquid in which chemical reactions take place in the cell is ...
13. True or false. Plant cells have chloroplasts; animal cells do not have chloroplasts.
14. True or false. Cell membranes let only some molecules pass through.
15. Name a cell organelle, apart from the nucleus, in which DNA is found.
16. Where in the cell would you expect to find most DNA?
17. State a function of the cell membrane
18. Name the organelle (component) of the cell in which photosynthesis takes place.
19. How do phospholipids differ from other lipids?
20. True or false. RNA is not found in ribosomes
21. What is a selectively permeable (semi-permeable) membrane?
22. State **one** feature that would allow you to identify an eukaryotic cell
23. Where in the cells of a leaf is chlorophyll found?
24. Give **two** characteristic features of eukaryotic cells. What corresponding term is used to describe bacterial cells?

25. Name a powerful type of microscope that is used to show what cells are made of in much greater detail (cell ultrastructure).
26. Name a substance found in the vacuole of a plant cell.
27. Give **two** locations in a cell at which there is a selectively permeable membrane.
28. In relation to membranes in cells, explain what is meant by *selective permeability*
29. For which purpose did you use methylene blue or iodine solution when examining cells with the microscope?
30. What is a tissue?
31. Name **two** tissues found in animals.
32. What is meant by tissue culture?
33. Suggest a reason why sterile conditions are needed in tissue culture.
34. Name the gas needed to release energy to make a skin graft.
35. Suggest the most suitable temperature to make skin cells grow for a skin graft.
36. What type of cell division, mitosis or meiosis, is involved in tissue culture?
37. Give **one** other application of tissue culture apart from skin grafting.
38. Name the parts of a microscope
39. For what purpose in an experiment did you use a cover slip?
40. For what purpose in an experiment did you use methylene blue?
41. Answer the following questions in relation to obtaining and staining a sample of plant cells and viewing them under the microscope.
 - (i) From what plant did you obtain the cells?
 - (ii) How did you obtain a thin piece of a sample of the cells **and** prepare it for examination?
 - (iii) What stain did you use on the cells?
 - (iv) Describe how you applied the stain.
42. The objective lenses on a microscope are usually labelled 40X, 10X, and 4X.
 1. Which objective lens should you begin with when using the microscope?
 2. Give **one** cell structure that you observed that indicated that the cells were plant cells.
43. State two different uses of the iodine solution in biological investigations.
44. State the precise location of the cell membrane in plant cells.
45.
 1. With what type of cell do you associate membrane-bound organelles?
 2. What corresponding term is used to describe bacterial cells?

46. The cell membrane is described as being selectively permeable. What does this mean?