# ***CELL STRUCTURES QUESTIONS***

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1. List and discuss the characteristics of living things.
2. (a) What is a cell?
   (b) Cells are often very different from one another. What kinds of differences are there between cells?
3. (a) What is meant by noncellular material?
   (b) Is noncellular material gaseous, liquid or solid? Give examples.
4. (a) What is the "cell theory"?
   (b) Explain the link between the development of microscopes and our understanding of the cell theory.
   (c) What are the similarities and differences between light microscopes and electron microscopes?
5. What is meant by *in vivo* and *in vitro* experiments? Give an example of each.
6. What factors may limit the size of a cell?
7. What is meant by the term "organelle"?
8. Describe the 2 basic types of cells.
9. What are the chief differences between animal and plant cells?
10. (a) What are the functions of the nucleus?
    (b) What is the evidence that indicates the role of the nucleus in control of the cell?
11. What are the functions of: (a) mitochondria (b) ribosomes (c) endoplasmic reticulum (d) Golgi bodies?
12. Find the origins of the words "amyloplast", "chromoplast" and "elaioplast".
13. What types of cells have an abundance of: (a) ribosomes (b) mitochondria?
14. Cells without nuclei do not usually live very long. Explain why.
15. Using the electron micrographs in your textbook, describe how to recognise: (a) a mitochondrion (b) a chloroplast (c) the endoplasmic reticulum (d) Golgi apparatus.
16. What is the difference between chromatin and chromosomes?
17. What structural differences are there between prokaryotic and eukaryotic cells?
18. Prokaryotic cells lack most of the organelles found in eukaryotic cells. Suggest how prokaryotes are able to function without them.
19. Explain the term "cell differentiation" using examples in both animals and plants.
20. What is the advantage of cell specialisation in multicellular organisms?

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