10% for each question, 100% in total

1. List the differences of prokaryotic and eukaryotic cells in terms of cell size, cellular organization, organelles, RNA and protein synthesis.

2. List essential classes of nutrients for maintaining eukaryotic cell culture.

3. Explain how the uptake of ^{14}C-leucine introduced into the cytosol of a cell can eventually become localized in primary lysosomes.

4. It is necessary that biological membranes maintain a fluid-like structure in order to carry out a number of functions. List five of these functions.

5. List the three fundamental types of cytoskeleton and describe their functions in the cell.

6. Discuss the mechanisms involved in cell-extracellular matrix interactions.

7. How could you use an inhibitor of cyclic AMP phosphodiesterase to provide evidence that a particular hormone exerted its effect on a tissue by increasing cyclic AMP content?

8. Explain that the zygote has the ability to develop into a number of cell types, but that individual cells formed as the embryo develops usually lose this ability, particularly in animals.

9. List the various stages of the cell cycle and describe how progress through the cell cycle is regulated.

10. Describe how the trafficking and sorting of proteins are regulated.