

Essay Questions On Cell Biology

1. Describe each cell organelle and its function.
2. What is the difference between the nuclear envelope and the cell membrane in terms of structure and function?
3. Which organelle has its own DNA? How does this relate to maternal genetics?
4. Describe the molecular components of ATP. How do ADP and P relate to ATP and energy generation and energy storage?
5. Name some types of proteins and give examples.
6. Diagram DNA, RNA, transcription, and translation in protein synthesis
7. What do hydrophobic, hydrophilic, lipophobic, and lipophilic mean?
8. How is the cell membrane organized? Include lipids and proteins.
9. Describe the structure of phospholipids.
10. What is osmosis and hydrostatic pressure.
11. Describe Donnan Equilibrium when there is a semi-permeable membrane and a non-diffusible anion. Show the electrochemical gradient.
12. What would a red blood cell do in an isotonic, hypotonic, or hypertonic solution?
13. What is the difference between passive, facilitated, active, and coupled transport?
14. Show how the Na/P pump works in terms of cell concentrations and transport mechanisms.
15. What is the difference between exo-, endo-, pino-, and phago-cytosis? (normally there is no hyphen).