**Zoology Questions**

**Cells (10)**

1. Compare and contrast prokaryotic and eukaryotic cells.
2. Describe the structure and function of the cell membrane.
3. Explain the role of the nucleus in cell function.
4. What are the functions of ribosomes in cells?
5. How do mitochondria contribute to cellular energy production?
6. What is the endoplasmic reticulum and what are its two main types?
7. Describe the structure and function of the Golgi apparatus.
8. Explain the role of lysosomes in cellular digestion.
9. What are the functions of centrioles in cell division?
10. How do chromosomes play a role in heredity?

**Tissues (10)**

1. What are the four main types of tissues in animals, and what are their functions?
2. Describe the structure and function of epithelial tissue.
3. Explain the different types of connective tissue and their functions.
4. How is muscle tissue specialized for contraction?
5. What are the different types of nervous tissue and their functions?
6. Compare and contrast stratified and simple epithelium.
7. Describe the role of adipose tissue in energy storage and insulation.
8. How does cartilage differ from bone tissue?
9. Explain the role of smooth muscle tissue in the digestive system.
10. What are the functions of neuroglia in the nervous system?

**Systems (10)**

1. Describe the structure and function of the integumentary system.
2. Explain how the skeletal system provides support and movement.
3. Describe the role of the muscular system in contraction and movement.
4. How does the nervous system control and coordinate body functions?
5. Explain the function of the endocrine system and how hormones work.
6. Describe the structure and function of the circulatory system.
7. How does the respiratory system function in gas exchange?
8. Explain the role of the digestive system in breaking down food and absorbing nutrients.
9. Describe the structure and function of the excretory system.
10. How does the reproductive system ensure the continuation of a species?

**Hormones (10)**

1. What is a hormone, and how does it differ from an enzyme?
2. Describe the different types of hormones based on their chemical structure.
3. Explain the role of the hypothalamus in hormone regulation.
4. How does the pituitary gland function as the "master gland" of the endocrine system?
5. Describe the function of thyroid hormones in metabolism.
6. Explain the role of parathyroid hormone in calcium regulation.
7. How do adrenal hormones respond to stress?
8. Describe the function of insulin and glucagon in blood sugar regulation.
9. Explain the role of sex hormones in development and reproduction.
10. How do hormones regulate growth and development?

**Classic Zoology (10)**

1. Describe the process of mitosis and its importance in cell division.
2. Explain the difference between sexual and asexual reproduction in animals.
3. How do adaptations help animals survive in their environment?
4. Describe the process of natural selection and its role in evolution.
5. Explain the concept of homeostasis and its importance in maintaining a stable internal environment.
6. What are the different types of animal symmetry?
7. Describe the process of embryonic development.
8. Explain the concept of invertebrate and vertebrate animals.
9. How do animals classify organisms based on their taxonomic hierarchy?
10. Describe the importance of biodiversity in the natural world.