Section I – True/False (explain if false)

_____ The mitochondria is the site of energy production in the cell.

_____ The correct order of structural organization is: chemical, cells, tissues, organs, organisms, organ systems.

_____ Rostral means “toward the tail.”

_____ Palmar orientation refers to the walking surface of the front limb.

_____ Homeostasis means the complete elimination of change in the body.

_____ Positive feedback loops reduce the original stimulus and bring the body back to equilibrium.

_____ The ribs are medial to the lungs.

_____ The fetlock is proximal to the hoof.

_____ The dorsal cavity in animals contains both the cranial and spinal cavities.

_____ Somatic cells reproduce through meiosis.

Section II – Multiple Choice

Which connective tissue connects muscle to bone and expresses locomotion?
a) Tendons
b) Ligaments
c) Cartilage
d) Areolar tissue

Which plane divides the body into left and right halves?
a) Transverse
b) Sagittal
c) Dorsal
d) Frontal

Which of the following is not a class of tissue?
a) Epithelial
b) Connective
c) Nervous
d) Membranes

Which of the following best describes physiology?
a) The study of structure of the body
b) The study of tissues and cells with a microscope
c) The study of function of the body and its parts
d) The classification of bones

Which of the following is a homologous structure?
a) Bird wings and insect wings
b) Front Cat leg bones and human arm bones
c) Fish gills and human lungs
d) Cow horns and rhino horns

Which type of epithelial cell is taller than wide and often found in the digestive tract?
a) Cuboidal
b) Columnar
c) Squamous
d) Transitional

Which of the following is NOT a necessary life function?
a) Maintaining balance
b) Excretion
c) Reflexes
d) Atmospheric pressure

Which of the following is avascular?
a) Muscle tissue
b) Nervous tissue
c) Epithelial tissue
d) Both b and c

Which connective tissue protects the articulating surfaces of long bones?
a) Bone

b) Cartilage
c) Adipose tissue
d) Dense regular connective tissue

The cell membrane is primarily made of:
a) Carbohydrates
b) Nucleotides
c) Phospholipid bilayer
d) Polypeptides

Which epithelial tissue appears multilayered but is actually one layer?
a) Stratified squamous
b) Transitional
c) Simple columnar
d) Pseudostratified columnar

“Oseo” refers to:
a) Bone
b) Muscle
c) Nerve
d) Fat

Which feedback mechanism downregulates or counteracts the stimulus?
a) Positive feedback
b) Negative feedback
c) Homeostatic imbalance
d) Neutral feedback

Which loose connective tissue is classified as CT proper?
a) Adipose
b) Areolar
c) Reticular
d) All of the above

Section III – Matching
Match the term with its best definition/association:

A. Ligaments
B. Endocrine glands
C. Cartilage
D. Osteoblasts
E. Adipose tissue
F. Areolar tissue
G. Reticular fibers
H. Serous membranes

_____ Loose CT proper found under skin and around organs

_____ Bone-forming cells

_____ Found in joint coverings, kidneys, liver, and spleen

_____ Connect bone to bone, stabilizing locomotion

_____ Net-like collagen fiber framework

_____ Ductless glands that secrete hormones

_____ Covers thoracic, abdominal, and pelvic cavities

_____ Protects articulating surfaces of long bones

Section IV – Short Answer

Explain the difference between positive and negative feedback loops. Give one example of each.

Why are epithelial tissues considered avascular, and how do they still receive nutrients?

What are two ways you can classify glands

What are the two types of bones?

What are the functions of Cartilage?

What is the function of Osseous Tissue?

There are three types of Muscle Tissue: what are they and what are their Functions?

Define proximal and distal. Provide an example in relation to an animal limb.

What are two characteristics of nervous tissue?

Why is reproduction considered the “least necessary” function of life, yet still important for species survival?

What are the types of tissues?

What are the 4 types of Connective Tissue?

What are the 3 types of fibers found in Connective Tissue?

Section V – Extended Response

What are the properties of a connective tissue ?

Describe the regeneration process of epithelial tissue.

Is blood classified as a connective tissue, why?

What is the keratinization process?

Explain the importance of homeostasis in animal physiology. What happens if homeostasis is disrupted?

List the five survival needs of animals. Which is most important and why?

Compare and contrast epithelial tissue and connective tissue in terms of structure, function, and location

Name as many Connective Tissue Cells and their Functions.