

# Lecture Exam 1 Objectives

## Performance Objectives

On completion of this unit the student should be able to achieve the following performance objectives:

Utilize a vocabulary containing the following terms:

acid	hypertrophy	pH
acidosis	inorganic	physiology
alkalosis	insertion	pleura
anatomy	lyse	pleurisy
aponeurosis	melanin	posture
articulation	organic	regeneration
atrophy	origin	salt
base	ossification	sinus
buffer	paralysis	stimulus
crenation	parietal	subcutaneous
enzyme	pectoral girdle	tendon
fatigue	pelvic girdle	tone
goblet cell	pericardium	visceral
hemolysis	peritoneum	
hemopoiesis	peritonitis	

On completion of this unit the student should be able to achieve the following performance objectives:

1. Name the two body cavities and the subdivisions of each.
2. List the four abdominopelvic quadrants and nine abdominopelvic regions.
3. Define homeostasis, and by giving examples explain its role in maintaining normal body function.
4. Explain the structure of the atom, including the subatomic particles. Define isotope, ion, anion, cation and electrolytes.
5. Differentiate between elements, molecules and compounds.
6. Differentiate between ionic, polar covalent, nonpolar covalent and hydrogen bonds.
7. Describe the classes of macromolecules: carbohydrates, lipids, nucleic acids, and proteins.
8. Explain the properties of water.
9. Explain metabolism and relate it to examples of the following chemical reactions: anabolism, catabolism, dehydration synthesis, hydrolysis, and reversible.
10. Describe and give the function of the following organelles: plasma membrane, nucleus, chromatin, chromosome, nucleolus, mitochondria, endoplasmic reticulum, ribosome, Golgi body, lysosome, peroxisome, filament, microtubule, centriole, flagellum, cilia, and microvilli.
11. Describe the ways in which substances normally enter and leave cells using the following terms: active and passive transport, diffusion, facilitated diffusion, selectively permeable,

- osmosis, hypertonic, isotonic, hypotonic, equilibrium, dialysis, filtration, exocytosis, endocytosis, phagocytosis, pinocytosis, and sodium/potassium pump.
12. Describe stages, importance and result of the cell cycle, mitosis, and meiosis.
  13. Describe protein synthesis as it involves DNA, RNA, and amino acids.
  14. Identify the organic molecule which is the most immediate source of energy for chemical reactions.
  15. Describe the events and significance of cellular respiration, separately describing glycolysis, the Krebs' cycle and the electron transport system (ETS). Explain the production of lactic acid and oxygen debt.
  16. List the four major categories of tissues and discuss the functions of each type.
  17. Classify epithelial tissue types using both cell shape and number of cell layers; relate them to epithelial functions in the body.
  18. Discuss glandular epithelium and compare endocrine and exocrine glands in terms of structure, method of secretion, and location in the body.
  19. Discuss the structure and function of connective tissues, and list the various types of connective tissues, indicating body regions of structures where each type is found, cells commonly found in connective tissue, and the three types of fibers found in the matrix.
  20. Compare bone and cartilage in terms of generalized function, cell types, organizational structure, and blood supply.
  21. Identify the three specialized types of cartilage and give examples of each.
  22. Compare and contrast epithelial and connective tissue.
  23. Compare and contrast three types of muscle tissue and describe body regions or structures where each type may be found.
  24. Describe nervous tissue with regard to structure and function.
  25. Describe each of the following membranes, and give examples of each: mucous, serous, synovial and cutaneous.
  26. Discuss the generalized functions of the skin as an organ.
  27. Describe the three cell types and five cell layers of the epidermis.
  28. Describe the layers, structural components, and functions of the dermis.
  29. Compare the structure and function of sudoriferous (sweat), sebaceous (oil), and ceruminous (wax) glands.
  30. List the functions of the skeletal system.
  31. Identify the major structures of a typical long bone.
  32. Describe the microscopic structure of bone using the following: lamellae, lacunae, canaliculi, osteocyte, Volkmann's canal, central or Haversian canal, Haversian system and osteon.
  33. Compare compact bone with spongy cancellous bone as to embryology, location, and histology.
  34. Compare and contrast the development of intramembranous and endochondral bone formation.
  35. List the types of arthroses (structural and functional) and give an example of each.
  36. Discuss the structures that characterize diarthrotic joints and identify six types, based upon the relative strength and range of motion in each joint type.
  37. Describe each of the following movements: flexion, extension, dorsiflexion, plantarflexion, supination, pronation, abduction, adduction, circumduction, and rotation.

38. State the basic divisions of the human skeleton.
39. Name the vertebral regions and give the number of vertebrae in each.
40. Describe the shape of the normal adult vertebral column (viewed laterally).
41. Describe the stages in fracture healing and general bone maintenance, using the following terms: osteoblast, osteocyte, osteoclast, calcium, calcification, phosphorus, callus, osteoporosis, and vitamins A,C,D
42. Describe the structural components of skeletal muscle tissue from the organ to the molecular level.
43. Describe the structure, function, and importance of sarcomeres.
44. Identify the energy sources required for muscle contraction.
45. List, in the correct order, the steps in muscle contraction beginning with nervous stimulation of the muscle cell surface.
46. Compare and contrast the following types of muscle contractions: twitch, isotonic, isometric, tetanic, tonic, treppe, and fibrillation.
47. List the names and functions of major chemical compounds found in muscle tissue.
48. Describe the various chemical activities taking place in muscle tissue during periods of rest and during periods of vigorous contraction.
49. Describe the production and subsequent fate of lactic acid during muscular activity.
50. Explain the roles of agonists, antagonists, synergists, and fixation muscles in body movement.