

Please do not write on the test. All answers should be placed on the scantron. It has been a pleasure teaching you all, and I hope the very best for you in the future. Do not forget me when you become rich and famous. Good luck!!!!

**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

- 1) Swallowing and peristalsis both assist in:
  - A) propulsion
  - B) absorption
  - C) ingestion
  - D) mechanical digestion
  - E) chemical digestion
- 2) The ovary is part of which of the following two systems:
  - A) digestive and endocrine systems
  - B) reproductive and endocrine systems
  - C) reproductive and respiratory systems
  - D) digestive and respiratory systems
  - E) endocrine and respiratory systems
- 3) Which of the following categories of bones is generally cube-shaped:
  - A) flat bone
  - B) irregular bone
  - C) long bone
  - D) compact bone
  - E) short bone
- 4) Which of the following is NOT a subdivision of the large intestine:
  - A) colon
  - B) rectum
  - C) appendix
  - D) duodenum
  - E) cecum
- 5) Which of the following groupings is INCORRECT:
  - A) skeletal muscle, arrhythmic, variable contraction speed, multinucleated
  - B) striated muscle, cylindrical cells, attached to the skeleton, involuntary
  - C) striated muscle, intercalated discs, branching cells, heart
  - D) cardiac muscle, slow contraction speed, rhythmic, uninucleated
  - E) smooth cells, single nucleus, walls of hollow organs, involuntary

- 6) Which of the following is NOT true of the stomach:
- A) its mucosa is simple columnar epithelium
  - B) its chief cells produce numerous protein-digesting enzymes
  - C) it contains longitudinal and circular muscle layers
  - D) starch digestion begins here
  - E) it contains a third obliquely arranged layer in the muscularis externa
- 7) A decrease in venous return to the heart causes:
- A) an increase in stroke volume and cardiac output
  - B) a decrease in stroke volume and an increase in cardiac output
  - C) a decrease in stroke volume and cardiac output
  - D) an increase in stroke volume and a decrease in cardiac output
  - E) no change in stroke volume and cardiac output
- 8) In describing the relationship of the lungs to the heart:
- A) the lungs are lateral to the heart
  - B) the lungs are cephalad to the heart
  - C) the lungs are intermediate to the heart
  - D) the lungs are superficial to the heart
  - E) the lungs are caudal to the heart
- 9) The plasma membrane:
- A) is the gene-containing control center that directs all cellular activities
  - B) defines the limits of the nucleus
  - C) is the site of most cellular activities
  - D) regulates the entry and exit of cell materials
  - E) is the site where ribosomes are assembled prior to their migration into the cytoplasm
- 10) Which of the following orientation terms have opposite meanings (in humans):
- A) lateral and distal
  - B) posterior and intermediate
  - C) superficial and proximal
  - D) medial and distal
  - E) superficial and deep

- 11) Which set of terms best describes an electron:
- A) neutral, 1 amu, located in the nucleus
  - B) neutral, 1 amu, located in the orbitals
  - C) positive charge, 1 amu, located in the nucleus
  - D) positive charge, 1 amu, located in the orbitals
  - E) negative charge, 0 amu, located in the orbitals
- 12) The amount of gastric juice produced every day is:
- A) 1 - 2 liters
  - B) 2 - 3 gallons
  - C) 1 - 2 gallons
  - D) 3 - 4 liters
  - E) 2 - 3 liters
- 13) Which of the following is NOT a function of the muscular system:
- A) hematopoiesis
  - B) generating heat
  - C) producing movement
  - D) stabilizing joints
  - E) maintaining posture
- 14) The muscle tissue that consists of single, very long, cylindrical, multinucleate cells with very obvious striations is:
- A) skeletal muscle only
  - B) smooth muscle only
  - C) cardiac and skeletal muscle
  - D) cardiac muscle only
  - E) cardiac and smooth muscle
- 15) Ninety-six percent of the human body is composed of the elements:
- A) carbon, calcium, sodium, and oxygen
  - B) carbon, oxygen, hydrogen, and nitrogen
  - C) calcium, magnesium, potassium, and iron
  - D) sodium, potassium, hydrogen, and sulfur
  - E) carbon, oxygen, iron, and potassium
- 16) The building up of larger molecules or structures from smaller ones is called:
- A) anabolism
  - B) glycolysis
  - C) metabolism
  - D) carbolysis
  - E) catabolism
- 17) Intrinsic factor is a stomach secretion needed for absorption of:
- A) vitamin A
  - B) vitamin C
  - C) vitamin K
  - D) vitamin B12
  - E) vitamin D

- 18) The atria of the heart:
- A) are located inferiorly and are the receiving chambers of the heart
  - B) are located inferiorly and are the discharging chambers of the heart
  - C) are located superiorly and are the discharging chambers of the heart
  - D) are located posteriorly and are the discharging chambers of the heart
  - E) are located superiorly and are the receiving chambers of the heart
- 19) The part of the cell (mostly cytoplasm) that is external to the myelin sheath:
- A) neurilemma
  - B) white matter
  - C) gray matter
  - D) axolemma
  - E) Nissl substance
- 20) Which of the following terms describes the location of the kidneys:
- A) suprarenal
  - B) adrenal
  - C) retroperitoneal
  - D) retroperineal
  - E) intraperitoneal
- 21) Intercalated disks are found in:
- A) smooth muscle tissue only
  - B) skeletal muscle tissue only
  - C) both cardiac and smooth muscle tissue
  - D) both skeletal and smooth muscle tissue
  - E) cardiac muscle tissue only
- 22) Which of the following is NOT a function of the skeletal system:
- A) production of blood cells (hematopoiesis)
  - B) storage of minerals
  - C) movement
  - D) support
  - E) protection

- 23) Which of the following is not a serous membrane:
- A) the parietal
  - B) the cutaneous membrane
  - C) the visceral pericardium
  - D) the parietal peritoneum
  - E) the visceral peritoneum
- 24) The study of the structure and shape of the body and body parts is called:
- A) anatomy
  - B) homeostasis
  - C) physiology
  - D) irritability
  - E) negative feedback
- 25) A neuron whose primary function is connecting other neurons is called a(n):
- A) afferent neuron
  - B) efferent neuron
  - C) glial cell
  - D) association neuron
  - E) satellite cell
- 26) The structural and functional unit of life is:
- A) the organism      B) a molecule      C) an organ      D) a tissue      E) a cell
- 27) In describing the relationship of the thoracic and spinal cavities:
- A) the thoracic cavity is inferior to the spinal cavity
  - B) the thoracic cavity is superior to the spinal cavity
  - C) the thoracic cavity is medial to the spinal cavity
  - D) the thoracic cavity is proximal to the spinal cavity
  - E) the thoracic cavity is ventral to the spinal cavity
- 28) The kidneys are aided in excretion by the:
- A) lungs and skin
  - B) lungs
  - C) skin and hair
  - D) skin
  - E) hair

- 29) The region that contains the navel is the:
- A) umbilical region
  - B) carpal region
  - C) orbital region
  - D) inguinal region
  - E) anterior knee
- 30) The movement of ions across cell membranes is an example of:
- A) electrical energy
  - B) mechanical energy
  - C) radiant energy
  - D) chemical energy
  - E) potential energy
- 31) Muscle tissue that is involuntary:
- A) smooth muscle only
  - B) cardiac muscle and smooth muscle
  - C) skeletal muscle only
  - D) cardiac muscle only
  - E) cardiac muscle and skeletal muscle
- 32) The categories of epithelial tissue membranes are:
- A) synovial, mucous, and cutaneous membranes
  - B) synovial, cutaneous, and serous membranes
  - C) synovial, cutaneous, and mucous membranes
  - D) synovial, mucous, and serous membranes
  - E) mucous, cutaneous, and serous membranes
- 33) Which of the following is NOT a modification of the small intestine, designed to increase surface area for absorption:
- A) circular folds
  - B) plicae circulares
  - C) Peyer's patches
  - D) microvilli
  - E) villi

- 34) The triangular regions of the kidneys that are separated by the renal columns are the:
- A) medullary pyramids
  - B) calyces
  - C) renal cortex
  - D) renal medulla
  - E) renal pelvis
- 35) Which of the following solutions is the weakest acid:
- A) a solution with a pH of 6.4
  - B) a solution with a pH of 10.1
  - C) a solution with a pH of 2.4
  - D) a solution with a pH of 8.6
  - E) a solution with a pH of 5.2
- 36) Isotopes have:
- A) the same number of neutrons and electrons but they differ in the number of protons
  - B) the same number of protons and electrons but they differ in the number of neutrons
  - C) the same number of protons but they differ in the number of neutrons and electrons
  - D) the same number of neutrons but they differ in the number of protons and electrons
  - E) the same number of protons and neutrons but they differ in the number of electrons
- 37) Energy that is directly involved in moving matter is termed:
- A) radiant energy
  - B) chemical energy
  - C) mechanical energy
  - D) electrical energy
  - E) potential energy
- 38) The most abundant element in the human body is:
- A) carbon
  - B) nitrogen
  - C) oxygen
  - D) calcium
  - E) hydrogen
- 39) Transport of digested end products from the GI tract to the blood or lymph is called:
- A) absorption
  - B) digestion
  - C) defecation
  - D) propulsion
  - E) ingestion

- 40) Which of the following areas receives blood directly from the four pulmonary veins:
- A) left atrium
  - B) right atrium
  - C) left ventricle
  - D) lungs
  - E) right ventricle
- 41) Which of the following is an anterior body landmark:
- A) vertebral region
  - B) gluteal region
  - C) antecubital region
  - D) popliteal region
  - E) sural region
- 42) Which of the following is NOT one of the carbohydrates that our digestive system breaks down to simple sugars:
- A) maltose
  - B) starch
  - C) sucrose
  - D) cellulose
  - E) lactose
- 43) Which of the following is NOT connective tissue:
- A) blood
  - B) adipose
  - C) bone
  - D) skeletal muscle
  - E) cartilage
- 44) Which of the following is NOT one of the functions of the kidneys:
- A) produce hormones that aid in digestion
  - B) manufacture urine
  - C) convert vitamin D to its active form
  - D) dispose of wastes
  - E) regulate blood volume



- 45) Which of the following is the correct sequence, going from simplest to most complex, in the levels of structural organization of the human body:
- A) cellular level, tissue level, chemical level, organ level, organ system level, organismal level
  - B) chemical level, tissue level, cellular level, organ system level, organ level, organismal level
  - C) cellular level, chemical level, tissue level, organ system level, organismal level, organ level
  - D) cellular level, chemical level, tissue level, organ level, organ system level, organismal level
  - E) chemical level, cellular level, tissue level, organ level, organ system level, organismal level
- 46) The number of permanent teeth in the adult dentition is:
- A) 36
  - B) 24
  - C) 32
  - D) 28
  - E) 20
- 47) Which of the following is NOT involved in the swallowing reflex:
- A) tongue
  - B) pharynx
  - C) soft palate
  - D) esophagus
  - E) larynx
- 48) Which of the following orientation and directional terms have the same meaning (in humans):
- A) anterior and dorsal
  - B) inferior and cephalad
  - C) inferior and cranial
  - D) anterior and ventral
  - E) superior and caudal
- 49) Which of the following is NOT true of the sensors involved in digestive reflexes:
- A) they start reflexes that activate or inhibit digestive glands
  - B) they respond to pH of the organ contents
  - C) they activate or inhibit lacteal absorption
  - D) they respond to the presence of breakdown products of digestion
  - E) they respond to stretch of the organ by food in its lumen
- 50) Which of the following is a dorsal body landmark:
- A) patellar region
  - B) thoracic region
  - C) pubic region
  - D) scapular region
  - E) sternal region

- 51) Which of the following activities represents physiological studies:
- A) observing the parts of a reproducing cell
  - B) making a section through the heart to observe its interior
  - C) drawing blood from laboratory animals to determine their blood sugar levels
  - D) viewing muscle tissue through a microscope
  - E) examining the surface of a bone
- 52) A prominent narrow ridge on a bone is a:
- A) crest
  - B) spine
  - C) tubercle
  - D) tuberosity
  - E) trochanter
- 53) When relaxed, the alimentary canal is approximately:
- A) 50 feet long
  - B) 40 feet long
  - C) 10 feet long
  - D) 30 feet long
  - E) 20 feet long
- 54) The sequence of steps in which large food molecules are broken down to their building blocks by enzymes is called:
- A) absorption
  - B) propulsion
  - C) mechanical digestion
  - D) ingestion
  - E) chemical digestion
- 55) A sarcomere is:
- A) the wavy lines on the cell, as seen in a microscope
  - B) the area between two intercalated discs
  - C) the nonfunctional unit of skeletal muscle
  - D) the area between two Z lines
  - E) a compartment in a myofilament
- 56) Nutrients detour through the liver via:
- A) hepatic portal circulation
  - B) glycogenesis
  - C) the electron transport chain
  - D) the circle of Willis
  - E) Bowman's capsule
- 57) In which of the following blood vessels is the blood pressure the highest:
- A) arteries
  - B) capillaries
  - C) veins
  - D) vena cava
  - E) arterioles

- 58) Which of the following does NOT describe the bladder:
- A) muscular
  - B) collapsible
  - C) anterior to the pubic symphysis
  - D) retroperitoneal
  - E) smooth
- 59) Digestion is primarily controlled by:
- A) the fight-or-flight mechanism
  - B) the somatic nervous system
  - C) the central nervous system
  - D) the enterogastric reflex
  - E) the autonomic nervous system
- 60) The umbilical vein carries:
- A) oxygen and foods from the placenta to the fetus
  - B) metabolic wastes and carbon dioxide from the fetus to the placenta
  - C) metabolic wastes and carbon dioxide from the placenta to the fetus
  - D) oxygen and foods from the fetus to the placenta
  - E) blood from the navel into the inferior vena cava
- 61) The tissue that is usually well vascularized and has an extensive intercellular matrix is called:
- A) muscle tissue
  - B) nervous tissue
  - C) connective tissue
  - D) epithelial tissue
  - E) brain tissue
- 62) Elimination of metabolic wastes from the body is the function of the:
- A) endocrine system
  - B) lymphatic system
  - C) urinary system
  - D) cardiovascular system
  - E) nervous system

63) Muscles and glands are:

- A) part of the peripheral nervous system
- B) receptors
- C) effectors
- D) part of the central nervous system
- E) myelinated

64) The part of the neuron that normally receives stimuli is called a(n):

- A) Schwann cell
- B) dendrite
- C) axon
- D) neurolemma
- E) satellite cell

65) Which of the following is a compound:

- A) lithium
- B) sodium chloride
- C) hydrogen gas
- D) chlorine gas
- E) oxygen gas

66) The lymphatic system:

- A) responds to internal and external changes by activating appropriate muscles and glands
- B) picks up fluid leaked from blood vessels and returns it to the blood
- C) produces heat
- D) secretes hormones that regulate processes such as growth, reproduction, and nutrient use (metabolism) by body cells
- E) synthesizes vitamin D

67) Which of the following is NOT a structural feature of a neuron:

- A) synaptic cleft
- B) axon
- C) node of Ranvier
- D) dendrites
- E) cell body

68) Vertebrae are considered \_\_\_\_\_ bones, whereas ankle bones are considered \_\_\_\_\_.

- A) irregular; short
- B) compact; spongy
- C) short; irregular
- D) flat; short
- E) short; flat

69) In anatomical position:

- A) the body is erect with the feet parallel and the arms hanging at the sides with the palms facing backward
- B) the body is laying face up with the feet parallel and the arms at the sides with the palms facing forward
- C) the body is laying face up with the feet parallel and the arms at the sides with the palms facing backward
- D) the body is erect with the feet parallel and the arms hanging at the sides with the palms facing forward
- E) the body is laying face down with the feet parallel and the arms at the sides with the palms facing backward

70) In describing the relationship between the patellar and femoral regions:

- A) the patellar region is superior to the femoral region
- B) the patellar region is dorsal to the femoral region
- C) the patellar region is lateral to the femoral region
- D) the patellar region is proximal to the femoral region
- E) the patellar region is distal to the femoral region

71) The site where ribosomes assemble prior to their migration into the cytoplasm is the:

- A) nuclear membrane
- B) chromatin
- C) nucleolus
- D) plasma membrane
- E) chromosomes

72) The deltoid region is the:

- A) buttock
- B) curve of the shoulder
- C) shoulder blade region
- D) posterior knee area
- E) area of the spine

- 73) Compact bone is characterized by \_\_\_\_\_, whereas spongy bone is characterized by \_\_\_\_\_.  
A) having epiphyses; having diaphyses  
B) having red marrow; having osteons  
C) its internal location in bones; its external location in bones  
D) dense tissue that looks smooth and homogenous; small needlelike pieces of bone and lots of open space  
E) small needlelike pieces of bone and lots of open space; dense tissue that looks smooth and homogenous
- 74) When a pair of electrons is shared unequally between two atoms, the bond formed is called a(n):  
A) ionic bond  
B) carbon bond  
C) polar covalent bond  
D) non-polar covalent bond  
E) hydrogen bond
- 75) Which of the following is continuous with the esophagus:  
A) oropharynx  
B) linguopharynx  
C) laryngopharynx  
D) nasopharynx  
E) esophagopharynx
- 76) Homeostasis in the human body is controlled *primarily* by which two organ systems:  
A) nervous and skeletal systems  
B) nervous and endocrine systems  
C) skeletal and endocrine systems  
D) cardiovascular and respiratory systems  
E) cardiovascular and integumentary systems
- 77) A shallow groove on the surface of the cortex is called a:  
A) tract                      B) furrow                      C) fissure                      D) sulcus                      E) gyrus

- 78) The primary lipids found in the cell membrane are:
- A) neutral lipids and phospholipids
  - B) fat-soluble vitamins and neutral lipids
  - C) neutral lipids and cholesterol
  - D) phospholipids and cholesterol
  - E) fat-soluble vitamins and cholesterol
- 79) Which of the following is an example of a physical change:
- A) fermenting grapes to make wine
  - B) the formation of DNA from its building blocks
  - C) ice melting to become water
  - D) the reaction of an acid with a base to form a salt and water
  - E) digestion of food
- 80) The tissue that is found lining body organs, covering the body surface, and in glandular tissue is:
- A) brain tissue
  - B) muscle tissue
  - C) epithelial tissue
  - D) connective tissue
  - E) nervous tissue
- 81) Varicose veins are caused by:
- A) a loss of elasticity in blood vessels
  - B) orthostatic hypotension
  - C) excessive production of the enzyme renin
  - D) incompetent valves
  - E) the accumulation of fatty substances in blood vessels
- 82) The three major components of the cytoplasm are the:
- A) organelles, inclusions, and ribosomes
  - B) organelles, inclusions, and nucleoli
  - C) cytosol, inclusions, and nucleoli
  - D) cytosol, organelles, and nucleoli
  - E) cytosol, organelles, and inclusions

83) Which of the following are touch receptors:

- A) Meissner's corpuscles
- B) Pacinian corpuscles
- C) Golgi tendon organs
- D) naked nerve endings
- E) muscle spindles

84) Hematopoiesis is the function of the:

- A) digestive system
- B) integumentary system
- C) nervous system
- D) endocrine system
- E) skeletal system

85) Tendons are:

- A) osseous tissue
- B) loose connective tissue
- C) dense connective tissue
- D) areolar tissue
- E) adipose tissue



Answer Key

Testname: FINAL EXAM.TST

**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

- 1) A
- 2) B
- 3) E
- 4) D
- 5) B
- 6) D
- 7) C
- 8) A
- 9) D
- 10) E
- 11) E
- 12) E
- 13) A
- 14) A
- 15) B
- 16) A
- 17) D
- 18) E
- 19) A
- 20) C
- 21) E
- 22) C
- 23) B
- 24) A
- 25) D
- 26) E
- 27) E
- 28) A
- 29) A
- 30) A
- 31) B
- 32) E
- 33) C
- 34) A
- 35) A
- 36) B
- 37) C
- 38) C
- 39) A
- 40) A
- 41) C
- 42) D
- 43) D
- 44) A
- 45) E
- 46) C
- 47) E
- 48) D

## Answer Key

Testname: FINAL EXAM.TST

- 49) C
- 50) D
- 51) C
- 52) A
- 53) D
- 54) E
- 55) D
- 56) A
- 57) A
- 58) C
- 59) E
- 60) A
- 61) C
- 62) C
- 63) C
- 64) B
- 65) B
- 66) B
- 67) A
- 68) A
- 69) D
- 70) E
- 71) C
- 72) B
- 73) D
- 74) C
- 75) C
- 76) B
- 77) D
- 78) D
- 79) C
- 80) C
- 81) D
- 82) E
- 83) A
- 84) E
- 85) C