Final Exam Review

1) The term *central nervous system* refers to the:
   A) autonomic and peripheral nervous systems
   B) brain, spinal cord, and cranial nerves
   C) brain and cranial nerves
   D) spinal cord and spinal nerves
   E) brain and spinal cord
   Answer: E

2) Small collections of nerve cell bodies found in a small number of locations outside the central nervous system are called:
   A) nuclei
   B) nerves
   C) ganglia
   D) tracts
   E) neuroglia
   Answer: C

3) A neuron with a cell body located in the CNS whose primary function is connecting other neurons is called a(n):
   A) efferent neuron
   B) afferent neuron
   C) association neuron
   D) glial cell
   E) satellite cell
   Answer: C

4) Impulse conduction is fastest in neurons that are:
   A) myelinated
   B) unmyelinated
   C) sensory
   D) motor
   E) cerebral
   Answer: A

5) Immediately after an action potential is propagated, which one of the following ions rapidly diffuses out of the cell into the tissue fluid:
   A) sodium
   B) chloride
   C) calcium
   D) potassium
   E) magnesium
   Answer: D

6) When a nerve fiber is polarized, the concentration of:
   A) sodium and potassium ions is higher on the inside of its membrane
   B) sodium and potassium ions is higher on the outside of its membrane
   C) sodium ions is higher on the inside of its membrane and potassium is higher on the outside
   D) sodium ions is higher on the outside of its membrane and potassium is higher on the inside
   E) sodium and potassium ions are in equal concentrations on the inside and outside of the membrane
   Answer: D

7) The point at which an impulse from one nerve cell is communicated to another nerve cell is the:
   A) cell body
   B) synapse
   C) receptor
   D) effector
8) The substance that is released at axonal endings to propagate a nervous impulse is called:
   A) an ion
   B) nerve glue
   C) a neurotransmitter
   D) the sodium-potassium pump
   E) an action potential

Answer: C

9) The three major parts of the brain stem are:
   A) cerebrum, cerebellum, and diencephalon
   B) thalamus, epithalamus, and hypothalamus
   C) dura mater, arachnoid mater, and pia mater
   D) midbrain, pons, and medulla oblongata
   E) basal nuclei, pineal body, and choroid plexus

Answer: D

10) Elevated ridges located on the surface of the cerebral hemispheres are called:
    A) ganglia
    B) fissures
    C) gyri
    D) sulci
    E) white matter

Answer: C

11) The central sulcus separates which lobes:
    A) parietal lobe from occipital lobe
    B) frontal lobe from temporal lobe
    C) temporal lobe from parietal lobe
    D) frontal lobe from parietal lobe
    E) temporal lobe from occipital lobe

Answer: D

12) If the specialized area of the cerebral hemisphere corresponding to Broca's area is damaged, what is the result:
    A) memory is lost
    B) motor control of the right leg is impaired
    C) eyesight is lost
    D) motor control of the speech muscles is lost
    E) hearing is impaired

Answer: D

13) Control of temperature, endocrine activity, metabolism, and thirst are functions associated with the:
    A) medulla oblongata
    B) cerebellum
    C) hypothalamus
    D) thalamus
    E) cerebrum

Answer: C

14) The vital centers for the control of visceral activities such as heart rate, breathing, blood pressure, swallowing, and vomiting are located in:
    A) pons
B) medulla oblongata
C) midbrain
D) cerebrum
E) hypothalamus

Answer: B

15) Which one of the following represents the correct sequence from outermost to innermost layers of the meninges:

A) pia mater, dura mater, arachnoid mater
B) pia mater, arachnoid mater, dura mater
C) arachnoid mater, dura mater, pia mater
D) dura mater, pia mater, arachnoid mater
E) dura mater, arachnoid mater, pia mater

Answer: E

16) The cerebrospinal fluid:

A) is secreted by the arachnoid villi
B) enters the four ventricles after filling and circulating through the subarachnoid space
C) is secreted mostly by the ependymal cells lining the brain ventricles
D) is continually formed mostly by the choroid plexuses
E) is identical in composition to whole blood

Answer: D

17) Which one of the following is the correct sequence in connective tissue sheaths, going from outermost to innermost layer:

A) epineurium, endoneurium, perineurium
B) epineurium, perineurium, endoneurium
C) perineurium, epineurium, endoneurium
D) perineurium, endoneurium, epineurium
E) endoneurium, epineurium, perineurium

Answer: B

18) Afferent nerves are called ____________, and motor nerves are called ____________.

A) motor nerves; sensory nerves
B) peripheral nerves; cranial nerves
C) mixed nerves; motor nerves
D) sensory nerves; efferent nerves
E) cranial nerves; peripheral nerves

Answer: D

19) The sympathetic and parasympathetic nervous systems are subdivisions of the:

A) central nervous system
B) voluntary nervous system
C) autonomic nervous system
D) somatic nervous system
E) peripheral nervous system

Answer: C

20) Which one of the following is NOT one of the major processes controlled by hormones:

A) body coordination
B) mobilizing body defenses against stressors
C) maintaining electrolyte balance
D) regulating cellular metabolism
E) growth and development
Answer: A

21) Hormone concentrations in the blood under normal conditions are USUALLY regulated by: 27) _____
   A) positive feedback mechanisms
   B) negative feedback mechanisms
   C) neurological control
   D) hypothalamic control
   E) tropic hormone control
Answer: B

22) Which one of the following is NOT typical of the changes that follow the binding of a hormone to its target cells: 28) _____
   A) plasma membrane permeability changes
   B) cellular mutations occur
   C) enzymes are activated or inactivated
   D) mitosis is stimulated
   E) proteins are synthesized in the cell
Answer: B

23) Prostaglandins are: 29) _____
   A) amino acid-based hormones
   B) steroid hormones
   C) lipid hormones manufactured in cell plasma membranes
   D) glycerol hormones
   E) target organs
Answer: C

24) The pituitary gland is located: 32) _____
   A) at the brain stem
   B) within the "Turk's saddle" of the sphenoid bone
   C) below the Adam's apple
   D) within the mediastinum
   E) within the temporal lobe
Answer: B

25) Hypersecretion of growth hormone in adulthood after long bone growth has ended leads to: 34) _____
   A) dwarfism
   B) gigantism
   C) acromegaly
   D) cretinism
   E) exophthalmos
Answer: C

26) The hormone that triggers ovulation of an egg from the female ovary is: 36) _____
   A) luteinizing hormone
   B) prolactin
   C) follicle-stimulating hormone
   D) progesterone
   E) interstitial cell-stimulating hormone
Answer: A

27) In men, luteinizing hormone is also called: 37) _____
   A) follicle-stimulating hormone
   B) adrenocorticotropic hormone
   C) testosterone
   D) androgen
   E) interstitial cell-stimulating hormone
28) An enlargement of the thyroid gland resulting from a deficiency of dietary iodine is called: 39) ______
   A) exophthalmos
   B) goiter
   C) cretinism
   D) myxedema
   E) acromegaly
Answer: B

29) Which one of the following is NOT a function of oxytocin: 40) ______
   A) stimulation of uterine contractions
   B) stimulation of breast milk ejection
   C) stimulation of menstruation
   D) postpartum bleeding control
   E) labor induction
Answer: C

30) Another name for antidiuretic hormone is: 41) ______
   A) prolactin
   B) vasopressin
   C) aldosterone
   D) adrenaline
   E) melatonin
Answer: B

31) Hyposecretion of antidiuretic hormone may lead to: 43) ______
   A) Graves' disease
   B) diabetes insipidus
   C) Cushing's disease
   D) diabetes mellitus
   E) Addison's disease
Answer: B

32) The thyroid gland is located: 44) ______
   A) above the kidneys
   B) below the Adam's apple
   C) within the mediastinum
   D) within the pancreas
   E) within the parathyroid glands
Answer: B

33) Which one of the following is NOT a thyroid hormone: 45) ______
   A) thyroxine
   B) calcitonin
   C) T3
   D) parathormone
   E) T4
Answer: D

34) Insulin is produced by cells of the pancreatic islets called: 58) ______
   A) alpha cells
   B) beta cells
C) delta cells  
D) gamma cells  
E) theta cells  
Answer: B

35) Insulin has a:  
   A) hypoglycemic effect  
   B) hyperglycemic effect  
   C) enzymatic effect  
   D) neurologic effect  
   E) tropic effect  
Answer: A

36) Insulin causes:  
   A) a decrease in the concentration of blood glucose  
   B) an increase in the concentration of blood glucose  
   C) an increase in blood pressure  
   D) an increase in the production of glucagon  
   E) a decrease in blood pressure  
Answer: A

37) Estrogens do all of the following EXCEPT:  
   A) stimulate the development of secondary sex characteristics in females  
   B) stimulate growth of facial hair  
   C) stimulate menstruation  
   D) help maintain pregnancy  
   E) prepare the uterus to receive a fertilized egg  
Answer: B

38) The secondary sex characteristics brought about by testosterone secretion do NOT include:  
   A) growth of facial hair  
   B) development of heavy bones  
   C) development of breasts  
   D) lowering the voice  
   E) development of heavy muscles  
Answer: C

39) Blood is a type of which kind of body tissue:  
   A) nonliving  
   B) epithelial  
   C) adipose  
   D) connective  
   E) musculoskeletal  
Answer: D

40) Which one of the following formed elements is the most abundant:  
   A) erythrocytes  
   B) eosinophils  
   C) platelets  
   D) basophils  
   E) lymphocytes  
Answer: A
41) Which one of the following does NOT describe erythrocytes:  
A) they are anucleate  
B) they contain hemoglobin  
C) they are packed with organelles  
D) they lack mitochondria  
E) they are shaped like biconcave disks  
Answer: C

42) There are an average of __________ WBCs per cubic millimeter of whole blood.  
A) 100–1,000  
B) 4,000–11,000  
C) 10,000–20,000  
D) 50,000–100,000  
E) 1 million – 3 million  
Answer: B

43) Which one of the following groups consist of granulocytes:  
A) neutrophils, eosinophils, and basophils  
B) lymphocytes and monocytes  
C) eosinophils and monocytes  
D) basophils and eosinophils  
E) neutrophils, lymphocytes, and eosinophils  
Answer: A

44) The type of leukocytes that would increase rapidly during allergy attacks and infections of parasitic worms are:  
A) eosinophils  
B) basophils  
C) neutrophils  
D) lymphocytes  
E) monocytes  
Answer: A

45) The type of leukocytes that contain large amounts of the vasodilator histamine are:  
A) neutrophils  
B) eosinophils  
C) basophils  
D) lymphocytes  
E) monocytes  
Answer: C

46) The type of leukocytes that become macrophages in the tissues are:  
A) neutrophils  
B) eosinophils  
C) basophils  
D) lymphocytes  
E) monocytes  
Answer: E

47) Platelets are fragments of multinucleate cells called:  
A) erythrocytes  
B) eosinophils
C) basophils
D) megakaryocytes
E) macrophages

Answer: D

48) The average functional lifespan of an RBC is:
   A) 20–30 days
   B) 50–75 days
   C) 100–120 days
   D) one year
   E) the body’s lifetime

Answer: C

49) The hormone that regulates the rate of erythrocyte production is called:
   A) renin
   B) leukopoietin
   C) vasopressin
   D) erythropoietin
   E) thrombopoietin

Answer: D

50) The series of reactions that stop blood flow following a cut is called:
   A) homeostasis
   B) coagulation
   C) hemostasis
   D) erythropoiesis
   E) agglutination

Answer: C

51) Blood normally clots in approximately:
   A) 1 minute
   B) 3 to 6 minutes
   C) 5 to 10 minutes
   D) 15 minutes
   E) 30 minutes

Answer: B

52) A clot that breaks away from a vessel wall and circulates freely within the bloodstream is called a(n):
   A) embolus
   B) fibrin
   C) thromboplastin
   D) thrombus
   E) clotting cascade

Answer: A

53) A substance that stimulates the immune system to release antibodies:
   A) antigen
   B) antibody
   C) interleukin
   D) fibrinogen
   E) prothrombin activator

Answer: A

54) The thick layer of the heart wall that contains contractile cardiac muscle tissue is the:
   A) VISCERAL PERICARDIUM
B) PARIETAL PERICARDIUM
C) ENDOCARDIUM
D) EPICARDIUM
E) MYOCARDIUM

Answer: E

55) The atria of the heart are the chambers that are:
A) located superiorly and are the receiving chambers of the heart
B) located inferiorly and are the receiving chambers of the heart
C) located superiorly and are the discharging chambers of the heart
D) located inferiorly and are the discharging chambers of the heart
E) located posteriorly and are the discharging chambers of the heart

Answer: A

56) Which one of the following areas receives blood directly from the four pulmonary veins:
A) lungs
B) right atrium
C) right ventricle
D) left atrium
E) left ventricle

Answer: D

57) When the ventricles contract, the bicuspid (mitral) valve prevents blood from flowing from the:
A) right ventricle to the right atrium
B) left ventricle to the left atrium
C) left atrium to the right atrium
D) right atrium to the left atrium
E) left ventricle to the right ventricle

Answer: B

58) The tricuspid valve is located between the:
A) right atrium and left atrium
B) right atrium and right ventricle
C) left ventricle and pulmonary artery
D) left ventricle and aorta
E) right ventricle and the pulmonary trunk

Answer: B

59) The superior vena cava empties:
A) oxygenated blood into the left atrium
B) oxygenated blood into the left ventricle
C) deoxygenated blood into the right atrium
D) deoxygenated blood into the right ventricle
E) deoxygenated blood into the left atrium

Answer: C

60) Which one of the following blood vessels carries oxygenated blood:
A) superior vena cava
B) inferior vena cava
C) coronary sinus
D) pulmonary artery
E) pulmonary vein

Answer: E

61) The crescent–shaped pacemaker of the heart that initiates depolarization under normal conditions is the:
A) sinoatrial (SA) node
B) atroventricular (AV) node
62) Into which one of the following vessels does blood enter during ventricular systole:  
A) aorta 
B) pulmonary veins 
C) pulmonary trunk 
D) both A and B 
E) both A and C  
Answer: E  

63) The carotid artery is located in the:  
A) armpit 
B) groin 
C) neck 
D) abdomen 
E) leg  
Answer: C  

64) Lymph flows:  
A) in a circular pattern within the tissues 
B) away from the heart only 
C) toward the heart only 
D) both toward and away from the heart 
E) into the capillaries  
Answer: C  

65) Which one of the following is NOT true of lymph nodes:  
A) they remove foreign materials from the lymph fluid 
B) they have valves similar to those found in veins 
C) they contain lymphocytes 
D) they act as filters along the lymphatic vessels 
E) they contain macrophages  
Answer: B  

66) Which one of the following is NOT a type of lymphoid organ:  
A) spleen 
B) thymus gland 
C) tonsils 
D) appendix 
E) Peyer’s patches  
Answer: D  

67) The lymph organ that programs T cells and functions at peak levels only during youth is the:  
A) thymus 
B) spleen 
C) appendix 
D) tonsils 
E) Peyer’s patches  
Answer: A  

68) The lymph tissues found within the walls of the small intestine are called:  
A) tonsils 
B) appendix 
C) Peyer’s patches 
D) thymus tissues 
E) intestinal nodes  
Answer: C  

69) The immune system is also called the:  

Answer: A
A) nonspecific defense system
B) surface defense system
C) bloodborne system
D) specific defense system
E) cell-mediated system

Answer: D

70) Fever has the effect of doing all of the following EXCEPT:  
A) denaturing (scrambling) proteins  
B) stimulating the liver and spleen to gather up iron and zinc  
C) increasing metabolic rate of tissue cells  
D) stimulating complement fixation  
E) speeding up repair processes

Answer: D

71) What specific type of acquired immunity do vaccines provide:  
A) naturally acquired active immunity  
B) naturally acquired passive immunity  
C) artificially acquired active immunity  
D) artificially acquired passive immunity  
E) naturally acquired artificial immunity

Answer: C

72) Which one of the following is NOT true of vaccines:  
A) they are made from dead or weakened pathogens  
B) they are derived from immune serum or gamma globulin  
C) they prevent most signs and symptoms of the disease that they are given for  
D) they promote immunological memory  
E) boosters are sometimes available to intensify a later immune response

Answer: B

73) Which one of the following is NOT true of basic antibody structure:  
A) they consist of four amino acid chains  
B) they are linked together by disulfide bonds  
C) the heavy chains are identical  
D) the heavy chains are about 400 amino acids long  
E) the light chains are often of differing lengths

Answer: E

74) Which one of the following is NOT one of the antibody classes:  
A) IgA  
B) IgB  
C) IgD  
D) IgG  
E) IgE

Answer: B

75) The "troublemaker" antibodies that mediate inflammation and certain allergic responses are:  
A) IgA  
B) IgB  
C) IgD  
D) IgG  
E) IgE

Answer: E

76) Which one of the following is NOT a method by which antibodies inactivate antigens:  
A) agglutination  
B) chemotaxis  
C) complement fixation  
D) neutralization  
E) precipitation

Answer: B

77) The specific antibody class that has the ability to cross the placental barrier and provide immunity
to the fetus is:

A) IgM  B) IgA  C) IgD  D) IgG  E) IgE
Answer: D

78) Tissue grafts that can only be donated by a genetically identical person (identical twin) are called:

A) autografts  B) isografts  C) allografts  D) clonal grafts  E) xenografts
Answer: B

79) The respiratory conducting passageways perform all of the following functions EXCEPT:

A) allow air to reach the lungs  B) purify air  C) humidify air  D) exchange gases  E) warm incoming air
Answer: D

80) Which one of the following terms does not apply to the nose:

A) external nares  B) nasopharynx  C) nostrils  D) nasal cavity  E) nasal septum
Answer: B

81) Which of the following functions do cilia of the nasal mucosa perform on contaminated mucus:

A) move the mucus toward the pharynx for swallowing  B) move the mucus toward the nasal septum to be absorbed  C) move the mucus toward the mouth to be spit out  D) move the mucus toward the nares to be sneezed out  E) move the mucus toward the trachea to be coughed out
Answer: A

82) The nasal cavity is separated from the oral cavity by:

A) the hard palate  B) the nasal conchae  C) the soft palate  D) both the hard and soft palate  E) both the nasal conchae and hard palate
Answer: D

83) Which one of the following is NOT a function of the paranasal sinuses:

A) they lighten the skull  B) they act as resonance chambers for speech  C) they produce mucus  D) they are olfactory receptors for smell  E) they help to moisten air
Answer: A
Answer: D

84) Air from the nasal cavity enters the superior portion of the pharynx called the:
   A) nasopharynx
   B) oropharynx
   C) palatopharynx
   D) laryngopharynx
   E) tracheopharynx
Answer: A

85) Adenoids located high in the nasopharynx are also called the:
   A) pharyngeal tonsils
   B) palatine tonsils
   C) buccal tonsils
   D) lingual tonsils
   E) submandibular tonsils
Answer: A

86) Vibration due to exhaled air that results in speech is a function of the:
   A) complete voice box
   B) true vocal cords
   C) false vocal cords
   D) glottis
   E) epiglottis
Answer: B

87) Cilia of the trachea that beat continually propel contaminated mucus:
   A) toward the throat to be swallowed or spat out
   B) toward the nose to be sneezed out
   C) toward the epiglottis to be coughed out
   D) toward the lungs to be encapsulated
   E) toward the glottis to be hiccupped out
Answer: A

88) Which one of the following is NOT true of the lungs:
   A) the narrower portion of each lung is called the apex
   B) the bases rest on the diaphragm
   C) the left lung has two lobes
   D) the right lung has three lobes
   E) both lungs have two lobes
Answer: E

89) Which one of the following is NOT true of the pleurae:
   A) they produce a slippery serous secretion
   B) they usually cling together
   C) they produce sticky mucus
   D) they glide easily against each other but resist being pulled apart
   E) pleurisy can be caused by decreased secretion of pleural fluid
Answer: C

90) The walls of the alveoli are composed largely of:
   A) simple squamous epithelium
   B) stratified squamous epithelium
   C) simple cuboidal epithelium
   D) simple columnar epithelium
   E) none of the above
Answer: A
D) stratified cuboidal epithelium  
E) pseudostratified epithelium  
Answer: A

91) Exchange of both oxygen and carbon dioxide through the respiratory membrane occurs by: 
A) osmosis  
B) simple diffusion  
C) facilitated diffusion  
D) active transport  
E) passive transport  
Answer: B

92) The lipid molecule critical to lung function that coats the gas-exposed alveolar surfaces is called:  
A) surfactant  
B) interferon  
C) kinin  
D) renin  
E) lecithin  
Answer: A

93) An emotionally-induced response during which air movement is similar to crying is:  
A) coughing  
B) sneezing  
C) laughing  
D) hiccupping  
E) yawning  
Answer: C

94) A very deep inspiration that ventilates all alveoli is:  
A) coughing  
B) sneezing  
C) crying  
D) hiccupping  
E) yawning  
Answer: E

95) The respiratory movement representing the total amount of exchangeable air is the:  
A) tidal volume  
B) inspiratory reserve volume  
C) expiratory reserve volume  
D) vital capacity  
E) dead space volume  
Answer: D

96) The amount of air remaining in the lungs even after the greatest possible expiratory effort is the:  
A) expiratory reserve volume  
B) residual volume  
C) dead space volume  
D) vital capacity  
E) tidal volume  
Answer: B

97) Most carbon dioxide is transported within blood plasma as:  
A) carbohemoglobin  
B) bicarbonate ion  
C) oxyhemoglobin  
D) hydrogen ion  
E) carbonic acid  
Answer: B
98) The bluish cast that results from inadequate oxygenation of the skin and mucosa is called:
   A) cyanosis   B) xanthosis   C) melanosis   D) albinism   E) erythema
   Answer: A

99) Which one of the following is NOT a factor influencing respiratory rate and depth:
   A) physical exercise
   B) volition
   C) emotional factors
   D) enzymatic factors
   E) levels of oxygen and carbon dioxide
   Answer: D

100) Cessation of breathing is called:
   A) apnea
   B) dyspnea
   C) eupnea
   D) hyperpnea
   E) tachypnea
   Answer: A

101) Hyperventilation leads to all of the following EXCEPT:
   A) brief periods of apnea
   B) cyanosis
   C) dizziness
   D) fainting
   E) build up of carbon dioxide in the blood
   Answer: E

102) Which one of the following is NOT a feature of COPD:
   A) most patients have a genetic predisposition to COPD
   B) dyspnea becomes progressively more severe
   C) frequent pulmonary infections are common
   D) most COPD victims are hypoxic
   E) most patients have a history of smoking
   Answer: A

103) Emphysema results in all of the following EXCEPT:
   A) enlarged alveoli
   B) lung fibrosis
   C) expanded barrel chest
   D) decreased lung elasticity
   E) moon face
   Answer: E

104) The molecule that prevents lung collapse by lowering the surface tension of the water film lining
     each alveolar sac is called:
     A) resorbin   B) renin   C) lecithin   D) surfactant   E) fibrosin
     Answer: D

105) Which one of the following is NOT true of cystic fibrosis:
     A) it is the most common lethal genetic disease in the U.S.
     B) it causes oversecretion of thick mucus that clogs the respiratory passages
     C) it impairs food digestion
     D) it causes sweat glands to produce an extremely salty perspiration
     E) it is rarely fatal
     Answer: E
106) The homeostatic imbalance associated with the death of many full-term newborn infants is called:  
A) CF  
B) SIDS  
C) CTRL  
D) COPD  
E) IRDS  
Answer: B

68) ______

107) Which one of the following are currently the most damaging and disabling respiratory diseases in the U.S.:  
A) tuberculosis and COPD  
B) COPD and lung cancer  
C) lung cancer and asthma  
D) asthma and tuberculosis  
E) tuberculosis and pneumonia  
Answer: B

70) ______

108) Which one of the following represents the correct order through which food passes in the alimentary canal:  
A) mouth, pharynx, esophagus, stomach, large intestine, small intestine  
B) mouth, esophagus, pharynx, stomach, small intestine, large intestine  
C) pharynx, mouth, esophagus, stomach, large intestine, small intestine  
D) mouth, pharynx, esophagus, stomach, small intestine, large intestine  
E) mouth, pharynx, esophagus, small intestine, stomach, large intestine  
Answer: D

37) ______

109) When relaxed and stretched out, the average adult alimentary canal is approximately:  
A) 10 feet long  
B) 20 feet long  
C) 30 feet long  
D) 40 feet long  
E) 50 feet long  
Answer: C

38) ______

110) Which one of the following is continuous with the esophagus:  
A) nasopharynx  
B) oropharynx  
C) linguopharynx  
D) laryngopharynx  
E) esophagopharynx  
Answer: D

40) ______

111) When full, the average adult stomach can hold approximately:  
A) 1 liter of food  
B) 2 liters of food  
C) 3 liters of food  
D) 4 liters of food  
E) 2 gallons of food  
Answer: D

43) ______

112) Which one of the following is NOT true of the stomach:  
A) it contains both longitudinal and circular muscle layers  
B) it contains a third obliquely arranged layer in the muscularis externa  
C) its mucosa is simple columnar epithelium  
D) its chief cells produce numerous protein-digesting enzymes  
E) starch digestion begins here  
Answer: D

44) ______
113) Which one of the following is the middle section of the small intestine:  
A) duodenum  
B) ascending colon  
C) jejunum  
D) descending colon  
E) ileum  
Answer: C

114) The "gatekeeper" of the small intestine that regulates food movement into it is called the:  
A) cardioesophageal sphincter  
B) jejunum  
C) pyloric sphincter  
D) ileum  
E) hepatopancreatic ampulla  
Answer: C

115) The primary function of the small intestine is:  
A) absorption of nutrients  
B) absorption of water  
C) waste secretion  
D) vitamin conversion  
E) mineral secretion  
Answer: A

116) Which one of the following is NOT a subdivision of the large intestine:  
A) cecum  
B) appendix  
C) duodenum  
D) colon  
E) rectum  
Answer: C

117) Amylase is an enzyme that is only able to digest:  
A) protein  
B) starch  
C) fat  
D) vitamins  
E) minerals  
Answer: B

118) The number of permanent teeth within a full set of adult teeth is:  
A) 20  
B) 24  
C) 28  
D) 32  
E) 36  
Answer: D

119) The anterior chisel-shaped teeth that are adapted for cutting are called:  
A) incisors  
B) canines  
C) premolars  
D) molars  
E) wisdom teeth  
Answer: A

120) Buildup of bile within the liver leading to bile pigments circulating through the body could cause tissues to turn yellow and a condition called:  
A) cyanosis  
B) erythematosis  
C) jaundice  
D) hepatitis  
E) cirrhosis  
Answer: C
The sequence of steps by which large food molecules are broken down into their respective building blocks by catalytic enzymes within hydrolysis reactions is called:  
A) ingestion  
B) propulsion  
C) mechanical digestion  
D) chemical digestion  
E) absorption  
Answer: D

Which one of the following is NOT one of the carbohydrates that the human digestive system is able to break down to simple sugars:  
A) cellulose  
B) sucrose  
C) lactose  
D) maltose  
E) starch  
Answer: A

Proteins are digested to their building blocks which are called:  
A) peptides  
B) amino acids  
C) polypeptides  
D) fatty acids  
E) glycerol  
Answer: B

The first nutrient to be chemically digested is:  
A) starch  
B) protein  
C) fat  
D) minerals  
E) vitamins  
Answer: A

Which one of the following alimentary segments has no digestive function:  
A) stomach  
B) ascending colon  
C) ileum  
D) esophagus  
E) duodenum  
Answer: D

The amount of gastric juice produced every day by an average-sized adult is:  
A) 1–2 liters  
B) 2–3 liters  
C) 3–4 liters  
D) 1–2 gallons  
E) 2–3 gallons  
Answer: B

The chemical found within the stomach that is necessary to activate pepsinogen to pepsin is:  
A) rennin  
B) gastrin  
C) secretin  
D) hydrochloric acid  
E) butyric acid  
Answer: D

The journey of chyme through the small intestine takes:  
A) 2–4 hours  
B) 3–6 hours
C) 6–8 hours  
D) 8–10 hours  
E) 10–12 hours  

Answer: B

129) Which one of the following is NOT absorbed by the human large intestine:  
   A) water  
   B) vitamin K  
   C) some of the B vitamins  
   D) ions  
   E) protein  

Answer: E

130) The energy value of foods commonly counted by dieters is measured in units called:  
   A) ATP  
   B) calories  
   C) kilocalories  
   D) coenzymes  
   E) carb units  

Answer: C

131) Inorganic substances necessary to body functioning that must be ingested through the diet are:  
   A) vitamins  
   B) coenzymes  
   C) carbon  
   D) minerals  
   E) complete proteins  

Answer: D

132) Which one of the following is NOT a main role of the liver:  
   A) to detoxify drugs and alcohol  
   B) to degrade hormones  
   C) to make cholesterol  
   D) to process nutrients during digestion  
   E) to add ammonia to the blood  

Answer: E

133) Which one of the following is NOT one of the functions of the kidneys:  
   A) manufacture urine  
   B) convert vitamin D from its inactive to its active form  
   C) dispose of metabolic waste products  
   D) produce hormones that assist in digestion  
   E) regulate blood volume  

Answer: D

134) The kidneys are aided in the excretion of fluids by the:  
   A) lungs  
   B) skin  
   C) hair  
   D) lungs and skin  
   E) skin and hair  

Answer: D

135) The triangular regions of the kidneys that are striped in appearance and separated by the renal columns are the:  
   A) renal cortex
B) renal medulla
C) medullary pyramids
D) renal pelvis
E) calyces
Answer: C

136) Which one of the following is NOT true of urine under normal healthy conditions:
   A) it is sterile
   B) it is slightly alkaline
   C) it is more dense than water
   D) it is slightly aromatic
   E) it typically contains ammonia
Answer: B

137) Which one of the following substances is normally found in urine:
   A) blood proteins
   B) red blood cells
   C) hemoglobin
   D) white blood cells
   E) creatinine
Answer: E

138) The noninvasive treatment for kidney stones that uses ultrasound waves to shatter calculi is called:
   A) lithotripsy
   B) lithiasis
   C) lithectomy
   D) lithotomy
   E) lithoscopy
Answer: A

139) The bladder is able to expand as urine accumulates within it due to the presence of:
   A) rugae
   B) transitional epithelium
   C) segmentation
   D) pseudostratified epithelium
   E) sphincters
Answer: B

140) The average adult bladder is moderately full with ________ of urine within it.
   A) 100 mL
   B) 500 mL
   C) 1 liter
   D) 2 liters
   E) 1 gallon
Answer: B

141) In one 24-hour period, the kidneys of an average-sized healthy adult filter approximately ________ through their glomeruli into the tubules.
   A) 10–15 liters of blood plasma
   B) 50–75 liters of blood plasma
   C) 100–125 liters of blood plasma
   D) 150–180 liters of blood plasma
   E) 200–240 liters of blood plasma
Answer: D

142) Which one of the following is NOT one of the major roles of the kidneys in normal healthy adults:
   A) excretion of nitrogen-containing wastes
   B) maintenance of water balance of the blood
   C) maintenance of electrolyte balance of the blood
   D) conversion of ammonia to bicarbonate ion
   E) ensuring proper blood pH
Answer: D
143) Extracellular fluid is found everywhere in the body EXCEPT:
   A) within living cells
   B) blood plasma
   C) interstitial fluid
   D) cerebrospinal fluid
   E) humors of the eye and lymph
Answer: A

144) When blood pH begins to rise, the respiratory control centers in the brain are:
   A) accelerated
   B) depressed
   C) not effected
   D) shut off
   E) controlled by the kidneys
Answer: B

145) The most potent of all mechanisms and substances that the body uses to regulate blood pH are:
   A) the respiratory system controls
   B) the kidneys
   C) hormones
   D) the buffer system
   E) enzymes
Answer: B

146) Control of the voluntary urethral sphincter in normal children is related to:
   A) intelligence
   B) nervous system development
   C) enzymatic regulation
   D) hormone regulation
   E) muscular development
Answer: B

147) The male gonads have both sperm-producing and testosterone-producing functions and are called:
   A) testes
   B) sperm
   C) ovaries
   D) ovum
   E) gametes
Answer: A

A fertilized egg, which is the first cell of a new individual developing within the uterus is called a(n):

148) A) fetus
    B) embryo
    C) gamete
    D) zygote
    E) gonad
Answer: D

149) The exocrine function of the male testes is:
    A) testosterone production
    B) ovum fertilization
    C) sperm production
    D) embryo nutrition
    E) estrogen production
Answer: C

150) The correct descending order of the male duct system (from inside to outside) is:
A) epididymis, ductus deferens, urethra, ejaculatory duct  
B) ejaculatory duct, epididymis, ductus deferens, urethra  
C) ductus deferens, epididymis, ejaculatory duct, urethra  
D) epididymis, ductus deferens, ejaculatory duct, urethra  
E) ejaculatory duct, ductus deferens, epididymis, urethra

Answer: D

151) Maturing sperm gain their ability to swim while in the:  
   A) seminiferous tubules  
   B) epididymis  
   C) ductus deferens  
   D) ejaculatory duct  
   E) urethra

Answer: B

152) Which one of the following is NOT a component of semen:  
   A) sperm  
   B) seminal fluid  
   C) prostatic fluid  
   D) bulbourethral fluid  
   E) epididymal fluid

Answer: E

153) Milky-colored fluid secreted from the prostate gland:  
   A) nourish sperm  
   B) activate sperm  
   C) cleanse the urethra  
   D) neutralize urine  
   E) are endocrine only

Answer: B

154) Normal healthy semen has an approximate pH level of:  
   A) 3.5–4  
   B) 4.0–5.7  
   C) 6.0–7.0  
   D) 7.2–7.6  
   E) 8.5–9.0

Answer: D

155) Spermatogenesis begins:  
   A) prior to birth  
   B) at birth  
   C) during puberty  
   D) during adulthood  
   E) during old age

Answer: C

156) The final outcome of meiosis within both the testicles and the ovaries is:  
   A) the formation of two identical daughter cells  
   B) one gamete  
   C) two gametes  
   D) three gametes  
   E) four gametes

Answer: E

157) Each spermatid and ovum have:  
   A) 23 pair of chromosomes  
   B) 23 chromosomes  
   C) 46 pair of chromosomes  
   D) 46 chromosomes  
   E) 2n chromosomes
158) Which one of the following is NOT true of spermatids:
   A) they are functional sperm
   B) they are nonmotile
   C) they have large amounts of cytoplasm
   D) they have no tail
   E) they have 23 chromosomes
Answer: A

159) The entire process of spermatogenesis takes approximately:
   A) 25–50 days
   B) 64–72 days
   C) 120 days
   D) 1 year
   E) 15 years
Answer: B

160) Fertilization usually occurs in the:
   A) ovary
   B) Graafian follicle
   C) uterine (fallopian) tubes
   D) uterus
   E) vagina
Answer: C

161) The journey of the oocyte through the uterine tubes to the uterus following ovulation normally takes:
   A) 1 hour
   B) 24 hours
   C) 3–4 days
   D) 1 week
   E) 10 days
Answer: C

162) The inner mucosal layer of the uterus that is sloughed off approximately every 28 days is called:
   A) endometrium
   B) myometrium
   C) perimetrium
   D) epimetrium
   E) hypometrium
Answer: A

163) The hormone responsible for ovulation is:
   A) estrogen
   B) progesterone
   C) follicle-stimulating hormone
   D) luteinizing hormone
   E) adrenocorticotropic hormone
Answer: D

164) The menstrual cycle is:
   A) 7 days long
   B) 14 days long
   C) 28 days long
   D) 40 days long
   E) 60 days long
Answer: C
165) The mammary glands are:
   A) modified ceruminous glands
   B) modified sebaceous glands
   C) modified sweat glands in both males and females
   D) modified lacrimal glands
   E) modified sweat glands in females only
Answer: C

166) The clusters of specific glands that produce milk when a woman is lactating are called:
   A) lactiferous ducts
   B) areolar glands
   C) mammary glands
   D) alveolar glands
   E) lactating glands
Answer: D

167) For a sperm cell to fertilize an ovum, sexual intercourse must occur no more than __________ hours before ovulation.
   A) 12
   B) 24
   C) 48
   D) 72
   E) 90
Answer: D

168) Many home pregnancy tests assay for __________ within a woman's urine.
   A) human chorionic gonadotropin
   B) estrogen
   C) progesterone
   D) luteinizing hormone
   E) testosterone
Answer: A

169) The placenta is usually functioning to deliver nutrients and oxygen to, and remove waste from, the embryonic blood by the __________ of pregnancy.
   A) first week
   B) second week
   C) third week
   D) fourth week
Answer: C

170) All the organ systems are laid down, at least in rudimentary form, and the embryo looks distinctly human by the __________ of embryonic development.
   A) first week
   B) second week
   C) fourth week
   D) eighth week
   E) twelfth week
Answer: D

171) The hormone produced by the placenta that causes the pelvic ligaments and pubic symphysis to relax, widen, and become more flexible to ease birth passage is called:
   A) renin
   B) relaxin
   C) progesterone
   D) chorion
   E) gonadotropin
Answer: B

172) The normal period of human gestation is calculated as __________ from the last menstrual period.
   A) 265 days
   B) 9 calendar months
   C) 9 lunar months
D) 280 days 
E) 295 days
Answer: D

173) Irregular uterine contractions called Braxton Hicks:
   A) signal impending labor 
   B) are also known as false labor 
   C) are a symptom of placenta previa 
   D) are a symptom of abruptio placenta 
   E) are a symptom of toxemia 
Answer: B

174) Labor is initiated by prostaglandins and __________. 
   A) renin 
   B) relaxin 
   C) oxytocin 
   D) progesterone 
   E) human chorionic gonadotropin 
Answer: C

175) Male sex chromosomes are represented by: 
   A) XX 
   B) XO 
   C) XY 
   D) XZ 
   E) YY 
Answer: C

176) The first menstrual period, which usually occurs at approximately age 13, is called: 
   A) menses 
   B) menstruation 
   C) menopause 
   D) menarche 
   E) menogen 
Answer: D

177) Menopause, which ends childbirth ability, is considered to have occurred when a woman: 
   A) misses her first period 
   B) misses two periods in a row 
   C) turns 50 
   D) has gone a year without menstruation 
   E) has had a hysterectomy 
Answer: D