

Answers

Chapter 1

- 1 Medial: toward the midline
Rostral: toward the front of the face
Dorsal: upward
- 2 The thoracic limb
- 3 Palmar
- 4 False
- 5 The anatomy of the parts of an organ or area compared to the whole.

Chapter 2

- 1 Dermis and epidermis
- 2 Anal, interdigital, suborbital
- 3 Yes
- 4 Dermatophytes
- 5 Digital pad
- 6 A condition where the layers making up the hoof are separated by inflammation, leading to severe pain
- 7 Tactile hairs are thicker and stiffer.
- 8 Antlers shed, horns do not.
- 9 Ringworm
- 10 Shortening the primary contour feathers

Chapter 3

- 1 Scapula, pelvis, ribs
- 2 Diaphysis
- 3 Three, except in the dewclaw, which has two
- 4 Atlas
- 5 Sesamoid

Chapter 4

- 1 Pennate, spindle, strap, sphincter
- 2 Skeletal muscle is associated with voluntary movement, smooth muscle with involuntary movement.
- 3 Superficial and deep pectoral muscles
- 4 It runs caudal to cranial from origin to insertion.
- 5 External and internal abdominal oblique muscles
- 6 Semimembranosis and semitendinosus. We need to identify them to be sure we know where the sciatic nerve is.
- 7 Crus; gastrocnemius and cranial tibial
- 8 Dorsal
- 9 Infraspinatus
- 10 Biceps brachii
- 11 An aponeurosis that joins the superficial abdominal muscles
- 12 Lateral thorax, deep to the latissimus dorsi

Chapter 5

- 1 Metacarpophalangeal
- 2 Nuchal
- 3 Capsule, collateral ligaments, cranial and caudal cruciate ligaments, menisci, fat pad, patella
- 4 Synovial, fibrous, cartilaginous
- 5 White or pink
- 6 Stifle, TMJ, shoulder
- 7 A suture is an immobile joint on the skull; a symphysis is a fibrous joint elsewhere on the body, which may flex slightly.
- 8 A fibrocartilagenous lip that surrounds a part of the joint, present on the bone; acetabulum
- 9 A test to check the cranial cruciate ligament, checking to see if the tibia moves abnormally compared to the femur
- 10 Atlantoaxial

Chapter 6

- 1 Radial and median
- 2 Collection of nerve bodies outside of the brain
- 3 Spinal accessory
- 4 Myelin
- 5 Ischiatic nerve
- 6 Epidural space
- 7 Foramen magnum
- 8 Cisterna magna or lumbar puncture
- 9 Auriculopalpebral
- 10 Fasciculus

Chapter 7

- 1 Renal medulla
- 2 Hilus
- 3 True
- 4 Dorsal
- 5 It curves around before it exits the body, leaving it vulnerable to obstruction.

Chapter 8

- 1 Pericardium
- 2 Left ventricle
- 3 Aortic bulb
- 4 Pulmonary trunk or pulmonary artery
- 5 Celiac artery
- 6 False
- 7 Arterioles
- 8 Cranial vena cava
- 9 It stores red blood cells.
- 10 Popliteal

Chapter 9

- 1 Palatoglossal arch
- 2 Dog
- 3 Left cranial
- 4 Duodenum
- 5 Ascending, transverse, and descending
- 6 the pancreas has a duct that opens into the duodenum.
- 7 Reticulum, rumen, omasum, abomasum
- 8 cecum

Chapter 10

- 1 Pituitary gland
- 2 Neck (near larynx)
- 3 Contributes to wake/sleep cycle, is light sensitive
- 4 Craniomedial to the kidney
- 5 Pancreas (specifically, islets of Langerhans); yes; digestion

Chapter 11

- 1 Pleura
- 2 Cartilage
- 3 Philtrum
- 4 Seven
- 5 Glottis

Chapter 12

- 1 Queen
- 2 Ovary
- 3 Infundibulum
- 4 horn of the uterus
- 5 Yes
- 6 False (it is ventral to the rectum)
- 7 An S-shaped curve, present in the penis of some ruminants

Chapter 13

- 1 Phospholipid
- 2 No
- 3 Breaking of ATP bonds releases energy.
- 4 False
- 5 No
- 6 It refers to the balance of addition and subtraction of oxygen during chemical reactions.

Chapter 14

- 1 The transfer of cooler temperature to the skin from nearby cold air
- 2 An animal whose core temperature depends on ambient temperature, and thus is not constant
- 3 Arrector pili
- 4 Vibrissae
- 5 Sweat
- 6 An odor that only animals of the same species can sense
- 7 Horns are permanent, while antlers are shed and regrow every year.
- 8 Dog, cat, horse

Chapter 15

- 1 False
- 2 Yes, it would be in the same position. Bones grow from the ends, not the middle.
- 3 Cartilage
- 4 periosteum
- 5 Mature, fully developed bone
- 6 They are cells that break down bone cells.
- 7 No
- 8 Hyaline cartilage
- 9 True

Chapter 16

- 1 True
- 2 acetylcholine
- 3 sarcoplasmic reticulum
- 4 autonomic, norepinephrine
- 5 Smooth muscle
- 6 Smooth muscle

Chapter 17

- 1 Gustatory
- 2 The adjective associated with the sense of balance and orientation in space
- 3 False
- 4 Middle ear
- 5 The reflective layer of the choroid that enhances the brightness of light
- 6 Sclera
- 7 True
- 8 An area of soft tissue that makes odors stronger when air is pulled across the organ

Chapter 18

- 1 Underdevelopment of the cerebellum
- 2 -75 mV
- 3 As a demyelinated area, the action potential can jump across it and speed up.
- 4 the electrical charge of the cell is less negative.
- 5 A gap between one neuron and another
- 6 The stimulation would continue, and the response would be continuous, even to the point of damaging the organism.
- 7 A voltage-gated channel is one that opens in response to a change in electrical charge; a ligand-gated channel is one that opens because either the transmitter or an accompanying molecule fits into the channel specifically.
- 8 Speeds it up
- 9 The brain and the spinal cord
- 10 The patellar or "knee jerk" reflex

Chapter 19

- 1 Glomerulus, proximal convoluted tubule, loop of Henle (ascending loop and descending loop), distal tubule, collecting duct
- 2 If the material coming out of the glomerulus is the same as the material that exits the kidney, the nephron has not changed it at all and therefore is not working.
- 3 False
- 4 The kidney produces a hormone, EPO, that signals the bone marrow to produce more red blood cells.
- 5 Makes it resorb more water
- 6 False
- 7 True

Chapter 20

- 1 Stroke volume times heart rate
- 2 The heartbeat would be unorganized or irregular.
- 3 Starling's law says that stroke volume increases as preload increases.
- 4 ventricles
- 5 afterload
- 6 pressure or stretching in the blood vessels
- 7 When the heartbeat and the pulse of the arteries are not synchronous
- 8 It decreases.
- 9 Yes
- 10 Veins

Chapter 21

- 1 Aggression/defense, amplifying sound, thermoregulation
- 2 To increase the surface area for digestion
- 3 It comes into the digestive tract at the duodenum and helps digest fats.
- 4 Resorb water
- 5 Rise
- 6 Abomasum

Chapter 22

- 1 Fall
- 2 Uterine contraction, milk letdown; causes smooth muscle to constrict
- 3 A series of events that lead to the endocrine system decreasing the output of a hormone when its blood levels get too high
- 4 Yes, because they inhibit the work of fibroblasts, which are part of the healing process.
- 5 The endocrine cells within the pancreas that produce insulin
- 6 The glucose levels would rise.
- 7 Adrenal medulla
- 8 No, they are secreted directly into the bloodstream.
- 9 Stimulates gluconeogenesis, glycogen breakdown, and increases serum glucose levels

Chapter 23

- 1 The amount of air that moves in and out in one breath cycle
- 2 The amount of inactive area in the alveoli during respiration plus the amount of space that does not actually exchange gases (usually, from the nose to the main bronchus)
- 3 When the tidal volume does not match up with the amount of perfusion in the alveoli, and gas exchange is inefficient
- 4 An area of cells that are sensitive to blood pH
- 5 False
- 6 Atelectasis
- 7 How easily oxygen can leave the hemoglobin that is carrying it so that it can enter the cells of the body
- 8 Decrease it
- 9 Passive
- 10 Air sacs

Chapter 24

- 1 When the female is sexually receptive to the male
- 2 Proestrus, estrus, diestrus, anestrus
- 3 The follicle after it has ruptured
- 4 False
- 5 Progesterone
- 6 False
- 7 Cortisol
- 8 Umbilicus
- 9 A chemical change that allows the sperm to penetrate the ovum.
- 10 A condition in which the animal does not ovulate until copulation occurs. It is found in cats but in not dogs.