1. Select the animal that uses gular fluttering during very warm weather.
   A  dog  B  cat
   C  cow  D  chicken
   E  sow  F  elephant

2. 17.9 dL = ____ cc.
   A  1790.0  B  179.00
   C  3523.0  D  358.0
   E  17.90  F  1.790

3. During surgery, small animals tend to _____________.
   A  experience hypothermia  B  undergo hyperkalemia
   C  undergo hypokalemia.  D  exhibit enhanced intestinal peristalsis
   E  exhibit enhanced immunotolerance  F  experience hyperthermia

4. An(n) ____________ directs the flow of blood away from the normal path.
   A  perioral valve  B  retrograde foramen
   C  retrograde fossa  D  paraoral vascular flap
   E  vascular shunt  F  orifice valve

5. The ovine carotid rete is found
   A  in the pericardial sac.  B  within the rumen.
   C  within the coccygeal artery.  D  in the lumbar region of the spine.
   E  in the infracardial sac.  F  at the base of the brain.

6. A human (or animal) loses heat ______ in water than in air of the same temperature.
   A  about 25 times faster  B  about 10 times slower
   C  about 5 times faster  D  about 3 times faster
   E  about 5 times slower  F  about 50 times faster

7. Temperature is a measure of the average amount of ______ possessed by the particles in a sample of matter.
   A  potential energy  B  radiant energy
   C  calories  D  kinetic energy
   E  osmotic pressure  F  hydrostatic pressure
8. ___________ is the process of heat transfer from one location to the next by the movement of fluids.
   A. Condensation
   B. Mass displacement
   C. Mass interia
   D. Radiation
   E. Conduction
   F. Convection

9. Which answer lists material in order of decreasing thermal conductivity?
   A. air, copper, wood
   B. air, concrete, foamed plastic
   C. aluminum, water, air
   D. steel, aluminum, copper
   E. wood, concrete, steel
   F. air, copper, steel

10. When ambient temps drop below the LCT for young calves, dietary energy is diverted away from growth and is directed toward _________.
    A. protein digestion
    B. producing more feces
    C. producing more urine
    D. producing rumen growth
    E. producing heat
    F. bacterial digestion

11. Thermoregulation in both ectotherms and endotherms is controlled mainly by the preoptic area of the ____________.
    A. corpus callosum
    B. anterior hypothalamus
    C. pineal gland
    D. thyroid gland
    E. posterior pituitary gland
    F. anterior pituitary gland

12. Given 80 ml of heparinized blood, how much _______ could you harvest?
    A. plasma, 0.83 dl
    B. plasma, 75 ml
    C. serum, 1.65 dl
    D. plasma, 44 ml
    E. serum, 10 ml
    F. serum, 0.83 dl

13. The LCT of a high-producing dairy cow is ____ while for a piglet it is ____.
    A. zero F, positive 40 F
    B. minus 40 F, positive 10 F
    C. positive 32 F, positive 32 F
    D. minus 93 F, positive 93 F
    E. zero F, zero F
    F. minus 40 F, positive 88 F

14. The feline ear drum can also be termed the
    A. transitional membrane.
    B. fusiform membrane.
    C. ossicle.
    D. tympanic membrane.
    E. enteric membrane.
    F. quasimodo membrane.
15. Condensation on a pipe transfers ______________ per gram of ________.
   A  60 kilocalories, water  B  20 amps, blood
   C  20 amps, pipe  D  60 hectares, pipe
   E  1 hectare, steam  F  600 calories, water

16. Nocturnal is a term that means:
   A  consuming heat  B  unable to "sense" changes in body temperature
   C  unable to control body temperature  D  unresponsive to "normal" hormone levels
   E  active at night  F  generating heat

17. Conductive heat flow involves the transfer of heat from one location to another in the absence of any ___________.
   A  matter  B  temperature differential
   C  solid objects  D  metal objects
   E  humidity differential  F  material flow

18. This animal has very large ears and is the smallest canid.
   A  red fox  B  semi-feral wild fox
   C  Fennec fox  D  5-striped gopher
   E  7-striped gopher  F  gray fox

19. Latent heat transfer includes
   A  conduction  B  radiation
   C  evaporation  D  natural convection
   E  wind chill  F  forced convection

20. During high ambient temperatures, ____________ is the most important heat transfer mechanism for cattle.
   A  conduction  B  convection
   C  radiation  D  condensation
   E  natural convection  F  evaporation

21. Within brown adipose tissue, this component directly produces thermal energy.
   A  mitochondria  B  nucleus
   C  thermogenic receptors  D  thermogenic myocytes
   E  macrophages  F  Kupffer units
22. Goosebumps in humans is the result of ______________.
   A olfactory inhibition  B involuntary gustation
   C gustation  D reverse gustation
   E peristalsis  F piloerection

23. Select the use of the BAIR system for dogs.
   A Counteracts retrograde blood flow during blood transfusions.
   B Used as an antidote when dogs have been exposed to CO.
   C Used as an antidote when dogs have been exposed to pet food containing aflatoxin.
   D Helps the female dog maintain pregnancy during extreme cold weather.
   E Helps maintain normal core body temperature during surgery.
   F Counteracts poisons that affect core body temperature.

24. Huddling changes what physical/chemical parameter of the animals involved?
   A postprandial thermogenesis  B lowers blood pH
   C effective surface area  D glucose levels in brain
   E preprandial thermogenesis  F increases heart rate

25. Which of the following is not a factor for heat transfer by convection.
   A surface roughness  B velocity of the medium
   C humidity  D velocity
   E effective surface area  F surface insulation thickness

26. Select the temperature of rumen fluid in the high-producing dairy cow.
   A 98 F  B 92.5 F
   C 101.5 F  D 105 F
   E 125 F  F 115 F

27. Minus 40 degrees F equals __________ degrees C.
   A 20  B zero
   C minus 40  D 10
   E 30  F minus 20