1. All carbohydrates are made up of what three elements EXCEPT.
   a. carbon       c. nitrogen
   b. oxygen       d. hydrogen

2. Fat has how many times more energy per gram than carbohydrate?
   a. 1.25        c. 3.25
   b. 2.25        d. 4.25

3. What part of the horse’s digestive tract is also known as the “Functional Appendix”?
   a. stomach     c. cecum
   b. small intestine d. large intestine

4. How much water does a 1000 pound horse drink on an average day?
   a. 6-8 gallons   c. 10-12 gallons
   b. 8-10 gallons  d. 12-14 gallons

5. What two parts of the horse does the deep digital flexor tendon connect?
   a. coffin bone to muscles of the back of the upper leg
   b. distal phalanx to carpus
   c. distal phalanx to the tarsus
   d. proximal phalanx to muscles of the upper leg

6. Where can you determine the capillary refill time on a horse?
   a. Inner eyelids     c. In the jugular groove
   b. Inner lips & gums d. Side of the neck

7. What piece of tack prevents the saddle from flipping forward when the rope is pulled tight by a fighting steer or calf.
   a. front girth      c. flank cinch
   b. tapadaro         d. chambone

8. Which of these hays generally has the highest % of crude protein?
   a. Orchard grass    c. Timothy
   b. Rye grass        d. Alfalfa

9. Three things whose lengths are determined by shoulder angle include all of the following EXCEPT.
   a. Length of neck   c. Length of back
   b. Length of stride d. Length of underline

10. A mare that not pregnant, but was bred in previous or current season is called
    a. open        c. maiden
    b. wet         d. barren

11. What breed is a descendant of the great horse of Flanders?
    a. Percheron      c. Belgium
    b. Haflinger      d. Shire

12. Untreated fence posts made from what type of wood have the longest life expectancy?
    a. Osage orange   c. Maple
    b. Red oak        d. Cedar

13. What type of martingale allows the rider to maintain contact with the bit at all times?
    a. Standing Martingale c. Irish martingale
    b. Running Martingale  d. Chambon

14. In the stallion the hormone FSH exerts its effects on which cells?
    a. Sertoli Cells c. Sperm cells
    b. Epidydimus  d. Scrotum

15. In reference to way-of-going, “Winging” occurs in horses with what conformational defect?
    a. Base wide and toed-in
    b. Base wide and toed-out
    c. Base narrow and toed-in
    d. Base narrow and toed-out

16. What color are the eggs of the nose bot fly?
    a. Cream                c. Blackish
    b. Yellowish             d. White

17. In reference to tetanus, which type of vaccine will provide for short-term protection and is usually given in cases where the immunization status of an animal is unknown.
    a. toxoid                c. antitoxin
    b. prophylaxis            d. immunoglobulin

18. Approximately how much blood does a 1000 lb. adult horse have?
19. What type of pack saddle is rigged with a center-fire or single cinch?
   a. Saw buck   c. Cross bow
   b. Pannier   d. Decker

20. For a horse that has quarter cracks, what type of shoe can be used to transfer weight from the wall of the hoof to the frog?
   a. rocker toe   c. square toe
   b. slider   d. bar shoe

21. Which of the following is NOT an accessory sex gland of the stallion?
   a. Bulbourethral   c. Epididymis
   b. Prostate   d. Vesicular

22. In reference to racing – what is a “blow-out”?
   a. a short fast run – usually 4-5 furlongs
   b. finishing last in a race
   c. winning by more than 5 lengths
   d. when a horse sustains an injury in a race

23. Which of the following is NOT one of the three distinct layers of the uterus.
   a. serous   b. myometrium
   c. endometrium   d. fundus

24. In what part of the horse’s digestive tract are soluble carbohydrates digested to simple sugars?
   a. Stomach   b. Small intestine
   b. Cecum   d. Large intestine

25. What is the primary cause of “Foal Heat Diarrhea”?
   a. the parasite Strongyloides westi
   b. the parasite Strongylus vulgarus
   c. a change in the bacteria in the GI tract
   d. the mare comes into “foal heat”

26. At a walk, a base-narrow horse will land on what part of the hoof?
   a. the toe   c. the heel
   b. “outside” hoof wall   d. “inside” hoof wall

27. Identify the breed from the following description:
   The small sturdy horse of Spanish origin is 12 – 12.2 hands and comes in all solid colors. Albinos and pintos are not eligible for registration. This breed has a running walk similar to that of the Tennessee Walking Horse and the Pasos.
   a. Galiceno   c. Knapstrab
   b. Andalusian   d. Lusitano

28. Arthritis of the coffin joint is commonly known as:
   a. osslets   c. low ringbone
   b. navicular   d. high ringbone

29. Where are the sebaceous glands located?
   a. mare’s reproductive tract
   b. stallion’s reproductive tract
   c. digestive system
   d. integumentary system

30. The “1st digital phalanx” is just below what bone.
   a. cannon   c. long pastern
   b. tarsus   d. navicular

31. In reference to farrier tools, at a quick glance, what tool has knobs on the ends of the handles?
   a. pull offs   c. hoof testers
   b. nippers   d. hoof knife

32. Which internal parasite larvae cause the skin lesions known as “summer sores”?
   a. Habronema   c. Strongyloides
   b. Strongylus   d. Gastrophilus

33. Lethal white foal syndrome is a genetic lethal associated with which specific color pattern?
   a. Frame overo   c. Sabino overo
   b. Tovero   d. Tobiano

34. In regards to evolution, which ancestor of the horse was the first to have the 2 side toes transformed into splint bones?
   a. Eohippus   c. Merychippus
   b. Mesohippus   d. Pliohippus
35. What term describes a splotch of dark color on a base coat color?
   a. Dapple  c. Bird catcher
   b. Blood mark  d. Blanket

36. Which endocrine gland is responsible for the maintenance of calcium levels in the blood?
   a. thymus  c. parathyroid
   b. pituitary  d. adrenal

37. What is the correct category for the behavior described as contagious or infectious behavior?
   a. Allelomimetic  c. Agnostic
   b. Epimeletic  d. Et-Epimeletic

38. What is the common term for the disease Borreliosis?
   a. EPM  c. EEE
   b. Lyme Disease  d. Potomac horse fever

39. What mineral is essential for the synthesis of vitamin B12?
   a. Cobalt  c. Copper
   b. Iodine  d. Iron

40. What term refers to the team of horses behind the lead team in an 8-horse hitch?
   a. swing team  c. wheel team
   b. troika team  d. point team

41. Where on the horse would you find an enarthrosis joint?
   a. Hip  c. Hock
   b. Skull  d. Elbow

42. In general, what does the prefix “cysto” refer to?
   a. infection  c. bladder
   b. liver  d. kidney

43. Which type of melanin controls the expression of red and yellow pigment?
   a. Pheomelanin  c. Eumelanin
   b. Neuromelanin  d. Isomelanin

44. There are 5 walk gaits in a dressage test. Which of these would have a footfall pattern where the hind feet touch the ground behind the footprints of the forefeet?
   a. Free walk  c. Medium walk
   b. collected walk  d. Extended walk

45. A feed containing 10% crude protein and 15% crude fiber would be appropriate for what type of horse?
   a. foal  c. lactating mare
   b. mature horse in training  d. mature idle horse

46. What anatomical structure in the horse is described as a diverticulum of the auditory tube?
   a. Guttural pouch  c. Pharynx
   b. Cecum  d. Bronchioles

47. When fox hunting, what does the cry “holloa” indicate?
   a. The fox has been sighted
   b. The hounds have picked up a scent of a fox
   c. One of the riders has fallen
   d. The fox escaped from the covert

48. What is unique in the horse in regards to respiratory frequency and stride frequency, especially at the gallop?
   a. two respirations per stride
   b. two strides per respiration
   c. three strides per respiration
   d. respiratory rate equals number of strides

49. What specific term refers to the prophylactic surgical procedure that would be used for a pregnant broodmare with pneumovagina?
   a. Tubal Ligation  c. Caesarian section
   b. Caslick’s  d. Spay (remove the ovaries)

50. What is the diploid number of chromosomes for a donkey?
   a. 62 chromosomes  c. 64 chromosomes
   b. 31 chromosomes  d. 32 chromosomes

51. What phase of the stride occurs when all 4 feet are off the ground?
   a. Period of suspension  c. Period of animation
   b. Period of ballatade,  d. Period of capriole

52. What would be the general location of the manubrium and xiphoid process?
   a. sternum  c. front leg
53. What type of electric fence is considered to be safer because it is more visible and less injurious to the horse?
   a. smooth wire  c. barbed wire
   b. 2x4 mesh  d. tape

54. Which virus that causes Rhinopneumonitis can result in respiratory and neurologic symptoms as well as abortion in pregnant mares?
   a. EHV – 1  c. EHV-3
   b. EHV- 2  d. EHV-4

55. You do the math... If the cardiac output is 35 liters and the heart rate is 35 beats per minute...What is the stroke volume?
   a. 35 liters  c. 70 liters
   b. 1 liter  d. 10 liters

56. What hormone is primarily responsible for diestrus?
   a. Follicle Stimulating hormone  c. Progesterone
   b. Lutenizing hormone  d. Estrogen

57. What is the common term for the tuber coxae?
   a. hock  c. top of the skull
   b. sternum  d. hip

58. What term refers to the condition that occurs when the collateral cartilages become infected?
   a. Quittor  c. Ringbone
   b. Sidebone  d. Navicular

59. At what age are all of the permanent incisors in place?
   a. 2 years  c. 4 years
   b. 3 years  d. 5 years

60. The breeding of a sire with a daughter would be an example of what specific type of breeding?
   a. line breeding  c. in-cropping
   b. inbreeding  d. out-cropping

61. What two breeds were combined in the development of the Azteca?
   a. Andalusian and Quarter Horse
   b. Arabian and Saddlebred
   c. Mustang and Appaloosa
   d. Morgan and Arabian

62. A “red bag delivery” is most commonly observed in mares that have been grazed on what type of pasture?
   a. clover  c. fescue
   b. brome grass  d. Bermuda grass

63. What is the main purpose of the close contact saddle?
   a. Jumping  c. Dressage
   b. Trail riding  d. Equitation

64. The orbatid mite is the intermediate host for which internal parasite?
   a. Tapeworm  c. Habronema
   b. strongylus  d. Gastrophilus

65. What type of striding leg interference occurs when the toe of the forefoot strikes the hind leg at the pastern or fetlock?
   a. Speedy cutting  c. Forging
   b. Scalping  d. Interfering

66. In what anatomical structure of the stallion are sperm stored and matured?
   a. testes  c. epididymis
   b. vas deferens  d. ampulla

67. What would be the estimated age of a horse when the Galvayne’s groove extends to the wearing surface of the corner upper incisor?
   a. 10 years  c. 20 years
   b. 15 years  d. 25 years

68. Which external parasite usually feeds on the inside ear folds and may cause a horse to be head shy or head shakers?
   a. mosquitoes  c. horn flies
   b. black flies  d. stable flies

69. What is the common name for the medication flunixin meglumine?
   a. Banamine  c. Lasix
   b. “Bute”  d. Ivermectin
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70. What general term refers to a horse that eats unnatural substances such as wood, hair or dirt?
   a. pica          c. coprophagy
   b. depraved      d. abnormal

71. You do the math... You are judging a reining class and have indicated a total maneuver score of minus 1 and a total penalty score of minus 3 ½. What would be the final score for this competitor?
   a. score of 95 ½ points  c. score of 65 ½ points
   b. score of 75 ½ points  d. score of 45 ½ points

72. What breed was formerly known as the “Karster” horse?
   a. Lipizzan          c. Oldenburg
   b. Andalusian        d. Trakehner

73. For what specific equine competition would you have herd holders?
   a. calf roping   c. cutting
   b. team penning  d. bull riding

74. Cremello is a double dilution of what color?
   a. bay          c. palomino
   b. chestnut     d. buckskin

75. Which farrier tool is used to cut hot metal?
   a. pritchel     c. tongs
   b. nippers      d. hardy

76. What is the anatomical term for the hind cannon bone?
   a. first metatarsal   c. first metacarpal
   b. third metatarsal   d. third metacarpal

77. What does the term open bridle describe?
   a. A bridle without blinders or blinkers
   b. A bitless bridle
   c. A hackamore
   d. A bridle without a throatlatch

78. At how many days after ovulation would the embryo be collected from a donor mare for nonsurgical embryo transfer?
   a. 1-3 days           c. 6-8 days
   b. 4-6 days           d. 10-14 days

79. What is the common term for Enterotoxemia?
   a. spasmatic colic    c. overeating disease
   b. intersusception colic    d. maple leaf poisoning

80. What type of parasite is only a problem for horses that are being grazed with ruminants?
   a. Ascarids          c. Gastrophilus
   b. Habronema        d. Trichostrongylus

81. What is the country of origin for the New Forest Pony?
   a. England          c. Germany
   b. Scotland        d. France

82. Common signs of ocular disease include color changes such as redness or cloudiness, increased tearing and blepharospasm. What is blepharospasm?
   a. rednesses          c. increased tearing
   b. cloudiness         d. Squinting or closing the eye

83. What is the common term for alpha tocopherol?
   a. a toxin produced by blister beetles
   b. a hormone used to synchronize estrus in mares
   c. Vitamin E
   d. an anthelminitic used to treat tapeworms

84. Which equine disease is NOT caused by protozoa.
   a. Equine Piroplasmosis (Babesiosis)
   b. Equine Protozoal Myeloencephalitis (EPM)
   c. Giardia Infection (Giardiasis)
   d. Potomac Horse Fever (PHF)

85. Which bacterial disease is called “shaker foal syndrome” when it affects foals?
   a. Botulism          c. West Nile Virus
   b. Rabies            d. Tetanus

86. A hackamore bit does NOT exert pressure on what part of the horse’s head?
   a. Nose          c. jaw
   b. mouth         d. poll
87. You do the math... A foal normally weighs 9-10% of the mare’s body weight. A foal that weighs 50 pounds would indicate that its dam weighs how much?
   a. 450-500 pounds  
   b. 950-1000 pounds
   c. 1400-1500 pounds  
   d. 1950-2000 pounds

88. What mineral imbalance results in the loss of tail hair and results in a condition commonly referred to as “bob-tail disease”?
   a. Excess selenium  
   b. Excess magnesium
   c. Excess copper  
   d. Excess iron

89. In general, what does the term viscera describe?
   a. Internal organs  
   b. Brain and spinal cord
   c. Skin, hair, hooves  
   d. Inside of the eye

90. Horses that are stalled 24 hours a day are more likely to be deficient in which vitamin?
   a. Vitamin A  
   b. Vitamin B
   c. Vitamin C  
   d. Vitamin D

91. You do the math... Water hemlock ingestions results in sudden death in horses. Death results after ingestion of as little as 0.1 ounce for each 100 pounds of body weight. A horse that weighs 1000 pounds would be fatally poisoned after consuming how many ounces of water hemlock?
   a. 0.01 ounce  
   b. 0.1 ounce
   c. 1 ounce  
   d. 10 ounces

92. What type of knot is used on the end of a rope to keep it from unraveling?
   a. Crown knot  
   b. Ravel Knot
   c. End knot  
   d. Quick release knot

93. You do the math... You are feeding a weanling that weighs approximately 400 pounds. If you are feeding twice a day and need to feed a total of 1% of the body... How many pounds would you feed for the morning feeding?
   a. 1 pound  
   b. 2 pounds
   c. 4 pounds  
   d. 8 pounds

94. Which is NOT a gait of the Paso Fino horse?
   a. Paso largo  
   b. Paso encino
   c. Paso corto  
   d. Paso fino

95. What is the anatomical name for a natural passageway or opening in the body that blood vessels and nerves pass through?
   a. Fossa  
   b. Foramen
   c. Condyle  
   d. Sulcus

96. What part of a decker saddle is described as a heavy canvas or poly cover with a wooden bar at the bottom?
   a. Pannier  
   b. Manta
   c. Decker  
   d. Half breed

97. What function do the superior labii levator muscles provide?
   a. Open the eye lid  
   b. Raise the head
   c. Move the ears  
   d. Raise the upper lip

98. In the zoological classification of the horse, what phylum includes the horse?
   a. Animalia  
   b. Mammalia
   c. Chordata  
   d. Perissodactyla

99. What is the anatomical term for the coffin joint?
   a. Distal interphalangeal joint  
   b. Proximal interphalangeal joint
   c. Metacarpophalangeal joint  
   d. Metatarsophalangeal joint

100. Which hormone is needed for “milk let down” and parturition?
    a. Oxytocin  
    b. Estrogen
    c. Lutenizing Hormone  
    d. Progesterone