1. Your orchard grass hay contains 8.7% crude protein on an as fed basis. The hay is 88% dry matter. What is the crude protein content of this hay on a dry matter basis?
   a. 7.7%  
   b. 9.9%  
   c. 10.8%  
   d. 10.1%

2. Which organic acid is responsible for causing rumen acidosis in feedlot cattle and market lambs?
   a. Butyric acid  
   b. Lactic acid  
   c. Acetic acid  
   d. Propionic acid

3. How would you use EPDs to compare a Hereford bull to an Angus bull?
   a. Directly compare the values  
   b. Only use actual data  
   c. Use an across-breed adjustment factor  
   d. You cannot compare these bulls with EPDs

4. Which of the following feedstuffs would be the best source of protein for a growing hog?
   a. Urea  
   b. Cracked corn  
   c. Soybean meal  
   d. Barley

5. You saw that your ewe was marked by the ram on September 10. If she does not get pregnant today, what day will she be in heat again?
   a. September 12  
   b. September 27  
   c. September 20  
   d. October 1

6. A beef tenderloin is cut from which muscle on the animal?
   a. Triceps brachii  
   b. Gluteus medius  
   c. Psoas Major  
   d. Trapezius

7. Which of the following is the best example of a seasonally polyestrous female?
   a. Cow  
   b. Ewe  
   c. Sow  
   d. All of these are seasonally polyestrous

8. In addition to Selenium, a deficiency of which of these can cause white muscle disease in growing lambs?
   a. Vitamin E  
   b. Fluorine  
   c. Copper  
   d. Niacin

9. What structure closes due to the suckling reflex and allows milk to bypass the rumen and reticulum to escape fermentation?
   a. Rumen tube  
   b. Omasum  
   c. Esophagus  
   d. Reticular groove

10. If a cow is observed to be in heat in the evening, she should be inseminated right away.
   a. True  
   b. False

11. Reproductive traits tend to have very low heritability.
   a. True  
   b. False

12. Which beef cattle breed was developed in Texas and is a combination of the Shorthorn and Brahman breeds?
   a. Santa Gertrudis  
   b. Beefmaster  
   c. Brangus  
   d. Beefmaker

13. Developmental duplication (DD) has recently become an issue in the cattle industry. It is simply inherited, but has incomplete penetrance. Given this information, if you bred a carrier cow to a carrier bull, what percentage of the calves will show clinical signs of DD?
   a. 50%  
   b. less than 25%  
   c. 25%  
   d. over 50%
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14. How many chromosomes does a pig have?
   a. 60     c. 34
   b. 38     d. 46

15. Dark cutting beef refers to meat that doesn’t brighten or bloom when it is cut and exposed to air. This is due to an abnormal pH level in the meat cut. At what meat pH could this phenomenon occur?
   a. 4.2     c. 5.6
   b. 5.1     d. 6.3

16. A hog was slaughtered at 260 pounds and has a carcass that weighed 184 pounds. Which of the following is closest to the dressing percentage of this hog?
   a. 76%     c. 71%
   b. 1.4%    d. 68%

17. What device would you use to synchronize heats in your herd of Suffolk ewes?
   a. CVDR     b. SPI
   b. GHRH     d. CIDR

18. FAMACHA scoring is commonly used in the sheep and goat industry. Which two FAMACHA scores would indicate little to no anemic condition?
   a. 0 and 1     c. 4 and 5
   b. 1 and 2     d. 9 and 10

19. Which grass is commonly infected with the endophyte fungus, which causes problems for grazing cattle?
   a. Orchard grass     c. Timothy
   b. Bermuda grass     d. Fescue

20. Ionophores are fed to feedlot cattle to increase feed efficiency and weight gain. Which of the following is NOT an example of an ionophore?
   a. Bovatec     c. Zilmax
   b. Rumensin     d. Cattlyst

21. A steer is eating 24 pounds of feed per day and is gaining 3.0 pounds per day. The cost of his feed each day is $2.15. What is the feed cost per pound of gain for this steer?
   a. $0.72     c. $0.09
   b. $11.2     d. $1.4

For Questions 22 – 25, match the hormone with its function in the reproductive system. (Answers may be used more than once or not at all)

22. Estrogen
   a. Makes the follicle rupture during ovulation, formation of corpus luteum
   b. Maintains pregnancy and prepares uterus for fertilized egg
   c. Responsible for regression of corpus luteum if egg is not fertilized
   d. Responsible for the outward signs of behavioral estrus
   e. Stimulates spermatogenesis at puberty and responsible for development of secondary sex characteristics

23. Progesterone

24. Testosterone

25. Prostaglandin