

# 2023 NAILE 4-H Dairy Quiz Bowl

## Phase A – Written Exam

1. How many pounds does a standard bushel of corn weigh?  
**56 Pounds**
2. If a calf is fed 4 quarts of colostrum, how many grams of serum immunoglobulin-g (IgG) should there be?  
**200 grams (accept 175 to 225)**
3. If a cow was observed in heat on July 10th, what date should her next heat period be expected?  
**July 31st**
4. Once a straw of semen is thawed, it should be maintained at what temperature Fahrenheit to achieve the best results.  
**90 to 95 Degrees Fahrenheit**
5. Which stomach compartment removes water?  
**Omasum or manyplies**
6. In what structure in the udder is milk produced?  
**Alveoli**
7. Which major hormone is produced by the corpus luteum?  
**Progesterone**
8. How many traits are evaluated when using the linear evaluation scorecard?  
**15**
9. For the most profit and production from a dairy heifer, at what age is most ideal for calving?  
**22 to 24 months old**
10. Most off-flavors in whole milk are associated with which component?  
**Butterfat**
11. It takes how many pounds of whole milk to make 1 gallon of ice cream?  
**12 Pounds**
12. What type of immunity does a newborn calf receive from consuming colostrum?  
**Passive immunity**
13. White muscle disease of calves is caused by a deficiency of which mineral?  
**Selenium**
14. What organ is affected by endometritis?  
**Uterus**

15. What should the temperature of the water be when thawing semen?  
**90 to 95 Degrees Fahrenheit**
16. How much does an average Holstein calf weigh at birth?  
**85 Pounds (80 to 90 pounds)**
17. Leukocytes are also known as what cell type?  
**White blood cells**
18. What is the normal respiratory rate of the dairy cow?  
**30 Breaths per minute (28 to 32 acceptable)**
19. Which hormone maintains pregnancy?  
**Progesterone**
20. Calf scours are often caused by 3 major classes (not species) of organisms. Name 1 of them.  
**Bacteria; Parasite; Virus**
21. What vitamin is required for good night vision?  
**Vitamin A**
22. What is the average percent of water in milk from a Holstein cow to the nearest percent?  
**87 Percent (86 or 87 Percent)**
23. A farm's ROA is a measure of profitability and efficiency. What does the acronym ROA stand for?  
**Return On Assets**
24. What is the recommended width of a free stall for a cow weighing 1200 to 1500 lbs.?  
**45 to 48 Inches**
25. What percentage of the score is allocated to dairy strength in the Holstein association's classification system?  
**20 Percent**
26. If a feed contains 65% moisture, what is its percent dry matter?  
**35 Percent**
27. Cow's milk is what percent lactose to nearest tenth?  
**4.8 Percent (4.7 to 4.9)**
28. How many pounds of body weight are in one animal unit?  
**1000 pounds**
29. In terms of animal health, what does the acronym MLV stand for?  
**Modified live vaccine**

30. All farm equipment should have the slow-moving vehicle emblem. What 2 colors should it be?

***Orange and red (both required)***

31. When managing labor, the manager is encouraged to develop SOP's to help employees understand their responsibilities. What does SOP stand for?

***Standard Operating Procedures***

32. If you have 4 milking units and it takes you 2 hours to milk 48 cows, how many minutes is each cow at milking unit?

***10 min/cow***

33. What is the term for plants that are seeded each year and complete their growth in one crop year?

***Annuals***

34. What is the technical name given to the mass of membranes and blood cells that is expelled after a calving?

***Placenta***

35. Which udder trait receives the most emphasis in the Holstein Association Udder Composite Index?

***Udder depth***

36. What type of immunity is produced by an animal when an antigen enters the body as a disease or by a vaccine?

***Active immunity***

37. Which is the name of the volatile fatty acid that is produced in the rumen that is the precursor for glucose?

***Propionate***

38. What disease does the bacteria *Moraxella bovis* cause in dairy cattle?

***pinkeye***

39. What should be the cfu/ml of whole milk to be fed to calves after pasteurization?

***< 20000***

40. When scours occur in the first 24 to 48 hours of life, what bacteria usually causes the problem?

***E. coli***

41. Milk that is used to make butter is sold as what class of milk?

***Class IV***

42. What is the recommended feeding space for a pregnant heifer (18 mos. to calving)?

***24 Inches per head***

43. If a cow is in constant heat, what might this be a sign of?

***Cystic ovaries***

44. How many hours do sperm live after being deposited in the cow's reproductive tract?

***24 to 30 hours***

45. Which county in the United States produces the most milk?  
***Tulare County, California***
46. For every 100 pounds of milk marketed, how much money is deducted from the producer's milk check for dairy promotion and product research?  
***15 Cents***
47. You purchased a ton of 8-12-10 fertilizer. How many pounds of phosphate are in the fertilizer?  
***240 Pounds***
48. If calves have received enough high quality colostrum, how many grams of serum total protein should be found per deciliter of blood?  
***10 grams or greater***
49. If 2 black and white cows are mated that are both carriers of the red gene, what percentage of the offspring will be red and white?  
***25 Percent***
50. Which anion has the greatest impact on urine pH?  
***Chloride***