

NORTH DAKOTA STATE FFA CONTEST
MILK QUALITY AND DAIRY FOODS CONTEST
WRITTEN TEST
2011

USING A NUMBER 2 LEAD PENCIL, MARK THE CORRESPONDING LETTER ON THE ANSWER SHEET.

1. Which compartment of the ruminant stomach is commonly referred to as the "fermentation vat"?
a. Rumen b. Reticulum c. Omasum d. Abomasum
2. Which disease occurring in dairy cattle are "bangs" vaccinations given for?
a. Brucellosis b. Ketosis c. Mastitis d. Laminitis
3. The actual name of the disease commonly referred to as Johne's Disease is?
a. Mastitis b. Tuberculosis c. Ketosis d. Paratuberculosis
4. The average gestation period for dairy cows is:
a. 21 days b. 15 days c. 383 days d. 283 days
5. The three primary entry points of a pathogen into the milk supply are:
a. cows, insects, pesticides b. cows, people, equipment c. herbicides, fungicides, insecticides d. None of the above
6. What is the term used to describe the physical characteristics and performance of an individual?
a. Genotype b. Phenotype c. Chromosome d. Gene typing
7. What is the bacterial infection that occurs in the eyes of dairy cattle that can cause blindness and is thought to be spread by flies?
a. Johne's b. Pinkeye c. Vitamin A deficiency d. Brucellosis
8. When injecting a drug into an animal, the wrong size needle size or drug amount per site can result in:
a. illegal drug residues b. reduced drug effectiveness c. tissue damage d. All of the above
9. _____ is a natural compound that when injected into dairy cattle has boosted milk production by 10 to 40 percent in trials.
a. Isoacid b. BST c. Urea d. Ralgro
10. Exposure of milk to fluorescent lighting can cause _____ off flavor.
a. flat b. cooked c. rancid d. light oxidized
11. Which of the following hormones is released when a cow is frightened?
a. progesterone b. estrogen c. adrenaline d. testosterone
12. The greatest damage to the udder due to mechanical milking results from:
a. too low of a vacuum b. removing the machine prematurely
c. leaving the machine on too long d. wrong pulsating ration
13. The _____ test measures the fat content of milk.
a. Kjeldahl b. Mohr titration c. Dumas d. Babcock
14. A somatic cell count above _____ in milk may indicate that a bacterial infection is present in one or more cows in the herd.
a. 500,000 b. 275,000 c. 300,000 d. 250,000
15. Which of the following is the name for milk that is remaining in the udder following the completion of milking?
a. Residual milk b. Skim milk c. Fore milk d. Calf milk
16. Poisonous compounds produced by molds are referred to as:
a. Pathogens b. Mycotoxins c. Allergens d. Vaccinations
17. A Holstein dairy cow that weighs 690 Kg will weigh:
a. 1000 lbs. b. 1200 lbs. c. 1500 lbs. d. 1700 lbs.

18. A gallon of milk weighs _____ lbs.
 a. 5.6 b. 7.2 c. 8.6 d. 9.4
19. The Dairy Herd Improvement Association (DHIA) provides:
 a. payment for lost production b. premiums for high quality milk
 c. milk testing and record keeping d. none of the above
20. _____ is the process of pumping raw milk through spinning cone-shaped discs to remove sediment.
 a. standardization b. pasteurization c. clarification d. separation
21. If a 1400 pound cow is eating an amount of feed dry matter equivalent to 4% of its body weight, how many pounds of feed dry matter is the cow eating?
 a. 28 pounds b. 40 pounds c. 56 pounds d. 18 pounds
22. Feed generally accounts for _____ of the cost of producing milk.
 a. 15% b. 50% c. 25% d. 85%
23. A freemartin heifer is:
 a. free of defects b. highly efficient c. sterile 90% of the time d. a twin heifer born to a heifer
24. _____ is the general name for the class of bacteria that causes mastitis in dairy cattle.
 a. lactobacillus b. lactococcus c. Ecoli d. staphylococcus
25. How many amino acids are considered to be essential in the dairy cow, and therefore are required in the diet?
 a. 15 b. 21 c. 5 d. 10

MILK MARKETING

26. The most important variety of cheese produced from skim milk is:
 a. Cottage Cheese b. Colby Cheese
 c. Swiss Cheese d. American Cheddar
27. A food that contain less than _____ grams of fat per serving is considered a low fat food.
 a. 10 b. 40
 c. 1 d. 3
28. What is the justification of government involvement in the marketing of milk:
 a. provide farmers price and income support
 b. reduce price and income variability
 c. improve market power of farmers
 d. all of the above
29. Market equilibrium is reached when the quantity supplied is _____ the quantity demanded.
 a. greater than b. less than
 c. equal to d. none of the above
30. In order to reduce the bacteria count of milk, the producer should:
 a. filter the milk to remove bacteria
 b. add chlorine at a rate of 22 ppm
 c. cool the milk quickly
 d. all of the above
31. The milk from cows being treated with antibiotics should be withheld from the supply because:
 a. antibiotics curdle the milk
 b. people are sensitive to antibiotics
 c. antibiotics create high bacteria counts
 d. antibiotics prevent proper cooling
32. Most bulk milk coolers are designed for every other day (EOD) pickup and must cool _____ of the volume of the bulk tank to 50 degrees within one hour and to 40 degrees within the second hour after milking.
 a. 15% b. 25% c. 35% d. 50%

33. Class I milk is used in:
 a. Fluid milk order b. Butter c. Ice Cream d. Cheddar Cheese
34. Cheese manufacturers realize greater yield from their milk when protein content is high and _____.
 a. Carbohydrate content is low b. Carbohydrate content is high
 c. Somatic cell counts are low d. Somatic cell counts are high
35. USDA has established a phased-in approach to the NAIS to register premises such as farms, ranches, veterinary clinics, livestock markets and slaughter houses. What do the initials NAIS represent?
 a. National Animal Identification System b. National Agriculture Identification System
 c. Nutritional Animal Identification System d. National Agriculture Identification Service.
36. The code of federal regulations stipulates that whole milk must contain _____ fat and 8.25% solids non-fat.
 a. 3.25% b. 8.25% c. 11.50% d. 10.75%
37. The agency responsible for the development of standards and grades for milk and dairy products is:
 a. FDA b. USDA c. APHIS d. DHIA
38. Milk prices are often discussed in this term of measurement.
 a. bu b. oz c. cwt d. ton
39. Mathematical equations that use economic data to establish a minimum regulated price are:
 a. Futures contract b. Hedge c. Price formula d. Milk contract
40. The PPD (Producer Price Differential) is the value of milk above and beyond the _____ value:
 a. Class I b. Class II c. Class III d. none of the above
41. On the average dairy farmers receive what percent of the money from fluid milk sales sold in stores?
 a. 55% b. 35% c. 85% d. 10%
42. The detection of added water in milk is easily determined by conducting the _____ test.
 a. acidity b. phosphatase c. freezing point d. ADV
43. Milk has a buffering capacity that maintains its PH at about:
 a. 3.1 to 3.4 b. 4.1 to 4.4 c. 6.5 to 6.7 d. 8.2 to 8.6
44. To produce one pound of whole milk cheese takes about _____ pounds of whole milk of average milkfat test.
 a. 5 b. 20 c. 10 d. 30
45. Dairy herds with somatic cell counts are more likely to produce a _____ favor of milk.
 a. cooked b. rancid c. feed d. garlic/onion
46. Who regulates dairy farms in North Dakota?
 a. ND Department of Ag b. ND Department of Health
 c. Environmental Protection Agency d. All of the above
47. Which product contains the most calcium?
 a. butter b. skim milk c. cottage cheese d. cheddar cheese
48. The MILC program is administered by which government agency?
 a. NRCS b. EXT c. DHIA d. FSA
49. The CME operates a daily wholesale market for cheddar cheese in two styles: 40 pound blocks and 500 pound barrels. What do the initials CME represent?
 a. Chicago Mercantile Exchange b. County Marketing Expo
 c. Cargo Marketing Extension d. Columbus Marketing Exchange
50. In the United States, milk production is currently _____ and the number of dairy cows is _____.
 a. decreasing, decreasing b. increasing, increasing c. decreasing, increasing d. increasing, decreasing

ANSWER KEY

- | | | | |
|-----|----|-----|----|
| 1. | a. | 26. | c. |
| 2. | a. | 27. | d. |
| 3. | d. | 28. | d. |
| 4. | d. | 29. | c. |
| 5. | b. | 30. | c. |
| 6. | b. | 31. | b. |
| 7. | b. | 32. | b. |
| 8. | d. | 33. | b. |
| 9. | b. | 34. | c. |
| 10. | d. | 35. | a. |
| 11. | c. | 36. | a. |
| 12. | c. | 37. | b. |
| 13. | d. | 38. | c. |
| 14. | d. | 39. | c. |
| 15. | a. | 40. | c. |
| 16. | b. | 41. | a. |
| 17. | c. | 42. | c. |
| 18. | c. | 43. | c. |
| 19. | c. | 44. | c. |
| 20. | c. | 45. | b. |
| 21. | c. | 46. | d. |
| 22. | b. | 47. | d. |
| 23. | c. | 48. | d. |
| 24. | d. | 49. | a. |
| 25. | d. | 50. | b. |

KEY
2011 North Dakota FFA Convention
Dairy Food Contest
Part II Individual Problem Solving

Work individually to answer the following multiple choice and True/False [T/F] questions.

1. C. 20
2. B. Guernsey
3. D. Whole Milk
4. C. 20
5. A. Spring
6. B. 101.5 to 102.5
7. A. Abomasum
8. D. 45 degrees
9. A. pneumonia
10. D. All of the above
11. A. Mastitis
12. B. Herringbone
13. B. Feed costs
14. A. 60%
15. D. White Muscle Disease
16. C. Bovine Viral Diarrhea
17. A. Directly behind them
18. B. 4 to 14 hours
19. B. 10
20. D. Rennin

21. T
22. T
23. T
24. F
25. F
26. T
27. F
28. T
29. T
30. T

2011 North Dakota FFA Convention
Dairy Food Contest
Individual Problem Solving Part II

Work individually to answer the following multiple choice and True/False questions.

1. On the PDCA Dairy Cow Unified Scorecard, how many points do "Feet and Legs" receive?
 - a. 15
 - b. 25
 - c. 20
 - d. 40
2. Which breed is known for a high concentration of beta-carotene in the milk?
 - a. Jersey
 - b. Guernsey
 - c. Holstein
 - d. Brown Swiss
3. Milk that has 3.25% butterfat is called what?
 - a. Half and Half
 - b. Raw Milk
 - c. Skim Milk
 - d. Whole Milk
4. Milk replacer should be made from milk solids and contain at least what percent fat?
 - a. 10
 - b. 15
 - c. 20
 - d. 22
5. In what season is ringworm usually the worst?
 - a. Spring
 - b. Summer
 - c. Fall
 - d. Winter
6. What is the rectal temperature of a healthy dairy animal?
 - a. 100.5 to 101.5
 - b. 101.5 to 102.5
 - c. 99.5 to 100.5
 - d. 98.5 to 99.5
7. Which is the only stomach compartment that secretes enzymes to help digest food?
 - a. Abomasum
 - b. Omasum
 - c. Rumen
 - d. Reticulum

8. On the farm, milk stored in the bulk tank should be maintained below what temperature?
 - a. 30 degrees
 - b. 35 degrees
 - c. 40 degrees
 - d. 45 degrees
9. What is the second most common health problem in calves?
 - a. pneumonia
 - b. scours
 - c. coccidia
 - d. foot rot
10. Which of the following describes functions of the dairy cow's digestive system?
 - a. Food intake and storage
 - b. Digestion and absorption
 - c. Elimination of waste
 - d. All of the above
11. High somatic cell counts in milk indicate what?
 - a. Mastitis
 - b. Metritis
 - c. Protein
 - d. Fat inversion
12. What type of milking parlor has a zigzag design in which cows are stationed at an angle to the milking pit or alley?
 - a. Parallel
 - b. Herringbone
 - c. Rotary
 - d. Carousel
13. What is the major expense when raising dairy cattle?
 - a. Veterinarian expenses
 - b. Feed costs
 - c. Equipment
 - d. Water
14. Approximately, what percentage of all dairy calves born in the US are the results of artificial insemination?
 - a. 60%
 - b. 65%
 - c. 70%
 - d. 75%
15. What is the condition caused by a Vitamin D deficiency?
 - a. Scurvy
 - b. Rickets
 - c. Pellagra
 - d. White Muscle Disease

16. Most calves are vaccinated against BVD, what do these initials stand for?
 - a. Bovine Viral Disease
 - b. Basic Viral Decongestant
 - c. Bovine Viral Diarrhea
 - d. Bovine Vaccine Disorder
17. Where is the blind spot in a dairy animal's field of vision?
 - a. Directly behind them
 - b. Parallel to them
 - c. Directly to the right
 - d. Directly to the left
18. What is the period of time that represents the highest conception rate after the onset of heat in healthy dairy cattle?
 - a. 2 to 10 hours
 - b. 4 to 14 hours
 - c. 16 to 18 hours
 - d. 20 to 24 hours
19. As of May 2006, how many Federal Milk Marketing Orders are in the U.S.?
 - a. 7
 - b. 10
 - c. 20
 - d. 32
20. What active enzyme used to coagulate milk when making cheese?
 - a. Reno coagulase
 - b. Chimosimplex
 - c. Rennin
 - d. Rennet
21. True or False. A Body Condition Score of 5 indicates that a cow is fat and over-conditioned.
22. True or False. Active immunity is when an animal's immune system manufactures its own antibodies.
23. True or False. The pH of a healthy rumen is 5.9 to 6.5.
24. True or False. Lutalyse and Estrumate are naturally occurring prostaglandins in the bovine.
25. True or False. Diagnosis of clinical mastitis is more difficult than subclinical mastitis.
26. True or False. Vaccinations can come in either killed or modified live forms.
27. True or False. The oldest cows on the farm usually hold the best genetic potential.
28. True or False. Sperm can only live in the reproductive tract for 18 to 24 hours.
29. True or False. The major buffer for maintaining optimum rumen pH is saliva.
30. True or False Johne's Disease is caused by the bacterium Mycobacterium paratuberculosis.