

**2019 Minnesota FFA Milk Quality and Products CDE Exam**  
*Bubble in the most correct answer in the exam section on your scantron.*

**MILK PRODUCTION**

1. Poor quality forage will cause \_\_\_\_\_ in milk to decrease significantly.
  - A. somatic cells
  - B. bacteria counts
  - C. casein percentage
  - D. fat percentage
  
2. To what temperature must a farm bulk tank, or cooling plate, have the capacity to chill milk within two hours of the end of milking?
  - A. greater than or equal to 50 degrees F
  - B. less than or equal to 45 degrees F
  - C. about equal to 40 degrees C
  - D. less than or equal to 42 degrees K
  
3. The California Mastitis Test (CMT) test detects \_\_\_\_\_ in raw milk.
  - A. bacteria
  - B. red blood cells
  - C. somatic cells
  - D. antibiotics
  
4. The off-flavor in milk generally caused by exposure to sunlight or fluorescent light is \_\_\_\_\_.
  - A. rancid
  - B. oxidized
  - C. acid
  - D. malty
  
5. Post dipping a cow's teats helps control \_\_\_\_\_.
  - A. contagious pathogens
  - B. milk flow
  - C. hair growth
  - D. antibiotics
  
6. What milk quality test measures organisms that grow at low temperatures, called psychrotrophic organisms, which often cause premature milk spoilage?
  - A. Standard Plate Count
  - B. Coliform Count
  - C. Preliminary Incubation Count
  - D. Lab Pasteurization Count
  
7. By volume, milk consists of approximately \_\_\_\_\_ percent water?
  - A. 3.7
  - B. 50
  - C. 87
  - D. 92
  
8. What is the greatest milk production cost on most dairies?
  - A. feed
  - B. labor
  - C. milking supplies
  - D. A.I. breeding supplies

9. The ability of lipase to attack milk fat and produce a rancid off-flavor is enhanced by
- A. feeding cows moldy hay
  - B. excessive agitation of warm raw milk
  - C. exposing milk to sunlight
  - D. poorly cleaned milking equipment
10. The document used by the U.S. dairy industry that contains the rules for producing today's fresh pasteurized milk supply is
- A. The Code of Federal Regulations
  - B. Standard Methods for the Examination of Dairy Products
  - C. The Grade A Pasteurized Milk Ordinance (PMO)
  - D. The Codes Alimentarius of the World Health Organization
11. The two most important diseases of cattle transmissible to man through milk are
- A. scarlet fever and Q fever
  - B. tuberculosis and anthrax
  - C. brucellosis and scarlet fever
  - D. tuberculosis and brucellosis
12. Even when there are no clinical signs, a cow's milk production begins to decline when its somatic cell count is greater than how many cells/ml?
- A. 100,000 cells/ml
  - B. 200,000 cells/ml
  - C. 400,000 cells/ml
  - D. 750,000 cells/ml
13. The major result of storing milk cold is the
- A. stopping of all bacterial growth
  - B. slowing of bacterial growth
  - C. killing of all bacteria
  - D. killing of all microorganisms
14. For most dairies in the U.S. the value of milk is primarily based upon the pounds of milk components (milkfat and protein). Milkfat depression can be caused by feed with \_\_\_\_\_ in a cow's diet.
- A. too much unsaturated fats
  - B. not enough unsaturated fats
  - C. too much fiber
  - D. too much fatty acids
15. Milk is a major nutritional source of which mineral that combined with vitamin D and exercise builds strong bones and teeth?
- A. calcium
  - B. iron
  - C. phosphorous
  - D. potassium
16. Which portion of milking procedure is recommended because it flushes potential mastitis-causing bacteria from the end of the teat canal, allows you to observe early signs of clinical mastitis and helps promote milk letdown?
- A. predipping
  - B. forestripping
  - C. postdipping
  - D. drying

17. Antibiotics are not permitted in milk because
- A. they artificially lower bacteria counts
  - B. off flavors are produced
  - C. fat becomes rancid
  - D. some persons are hypersensitive to certain antibiotics
18. Adulteration of milk with water is unlawful and can be detected by testing for
- A. titratable acidity
  - B. total milk solids
  - C. a high freezing point
  - D. somatic cells
19. The ideal cleaning agent for removing milkstone from equipment surfaces is
- A. acidic detergent
  - B. phosphate
  - C. chelating agent
  - D. surfactant
20. The microbiological standard for unpasteurized Grade A milk is \_\_\_\_\_ bacteria or less per milliliter of milk.
- A. 50,000
  - B. 75,000
  - C. 100,000
  - D. 750,000
21. The principal protein in milk is \_\_\_\_\_.
- A. whey protein
  - B. casein
  - C. crude protein
  - D. lactoglobulin
22. Raw milk somatic cell count must be \_\_\_\_\_ or less to meet Grade A government standards in the United States.
- A. 100,000
  - B. 250,000
  - C. 400,000
  - D. 750,000
23. The activity/inactivity of the enzyme \_\_\_\_\_ is the basis for confirming the adequacy of pasteurization of milk.
- A. phosphatase
  - B. lipase
  - C. peroxidase
  - D. catalase
24. Aflatoxins sometimes found in milk are produced on corn by
- A. bacteria
  - B. viruses
  - C. molds
  - D. yeast

25. Bulk tanks are used to store raw milk should have what mechanical component to assure thorough mixing of the milk to prevent fat separation?
- A. thermometer
  - B. agitator
  - C. air vent
  - D. automated control box
26. Cracked and blistered rubber parts of milking machine are likely to cause
- A. high bacteria counts of milk
  - B. oxidation of milk
  - C. rancid flavor in milk
  - D. high freezing point of milk
27. When feeding distillers grains in dairy feed rations, there are concerns regarding the supply of protein building blocks. What are the building blocks of protein?
- A. DNA
  - B. nitrogen
  - C. amino acids
  - D. carbohydrates
28. Loud noise, shouting, clapping or whistling creates stress for cows and causes the release of the hormone adrenaline that \_\_\_\_\_ milk let down.
- A. stimulates
  - B. increases
  - C. maximizes
  - D. blocks
29. The two most common tests used for determination of unpasteurized milk quality are \_\_\_\_\_ and \_\_\_\_\_.
- A. standard plate count and color
  - B. somatic cell count and standard plate count
  - C. flavor and titratable acidity
  - D. somatic cell count and color.
30. After the first touch of the udder the milking unit should be attached within \_\_\_\_\_ seconds for optimal milking time.
- A. 10-25 seconds
  - B. 30-50 seconds
  - C. 60-90 seconds
  - D. 120-160 seconds

### **Milk Marketing**

31. What is the process called that disintegrates fat globules in milk in order to reduce the separation of cream? The fat globules are typically broken down by forcing the milk through a small passage at a high velocity.
- A. pasteurization
  - B. ultra-pasteurization
  - C. homogenization
  - D. standardization

32. To make one pound of butter requires approximately \_\_\_\_ pounds of whole milk.
- A. 8
  - B. 12
  - C. 22
  - D. 44
33. What piece of legislation made farmer cooperatives legal?
- A. Sherman Act
  - B. Capper-Volstead Act
  - C. Farm Bill
  - D. Barkley Act
34. Over half of the top 50 U.S. dairy cooperatives belong to a federation that is a dairy farmers' chief lobbying voice in the nation's capital. What is the name of the federation?
- A. International Dairy Federation
  - B. Dairy Farmers of America Federation
  - C. National Milk Producers Federation
  - D. International Dairy Foods Association
35. Milk used to make ice cream would be priced in what Federal Order class?
- A. Class I
  - B. Class II
  - C. Class III
  - D. Class IV
36. The actual cost of producing dairy products that is used in the Class III and IV pricing formula is called the \_\_\_\_\_.
- A. milk-feed ration price
  - B. cooperative bonus premium
  - C. Federal Order price
  - D. make allowance
37. Dividing the total dollars a dairy has in assets by the number of cows determines which economic indicator?
- A. equity
  - B. total investment per cow
  - C. debt per cow
  - D. debt to asset ration
38. A mixture of milk and cream containing not less than 10.5 percent milkfat, but less than 18 percent milkfat is defined as
- A. light whipping cream
  - B. half and half
  - C. light cream
  - DD. heavy cream
39. Federal Milk Marketing Orders are a \_\_\_\_\_ program that defines the terms under which handlers of milk within a specific marketing order purchase milk from dairy farmers.
- A. mandatory
  - B. congressionally required
  - C. elected
  - D. voluntary

40. Which variety of cheese represents in the largest wholesale sales volume, annually, in the U.S.?
- A. Swiss
  - B. Cheddar
  - C. Mozzarella
  - D. Process American
41. Since 1984, when President Ronald Reagan proclaimed National Ice Cream Month, it has been celebrated annually, every \_\_\_\_\_.
- A. June
  - B. July
  - C. August
  - D. September
42. The reason Federal Milk Market Administrators test Grade A milk for composition and audit records of purchases by handlers is to
- A. ensure an adequate supply of pure and wholesome milk for the consumer
  - B. ensure a market for milk
  - C. help handlers with their business affairs
  - D. keep government informed
43. A Federal Milk Marketing Order is not authorized unless two-thirds of the affects \_\_\_\_\_ milk to the proposed marketing area approves its implementation.
- A. dairy cooperatives supplying
  - B. producers supplying
  - C. cheese processors manufacturing
  - D. handlers processing
44. To make one gallon of ice cream requires approximately \_\_\_\_ pounds of whole milk.
- A. 8
  - B. 12
  - C. 22
  - D. 44
45. Which of the following flavors of ice cream is the most popular, by sales volume?
- A. Raspberry
  - B. Strawberry
  - C. Vanilla
  - D. Chocolate
46. Milk has more protein than you may think. An 8 ounce glass of real milk has \_\_\_\_ times more protein than plant-based beverages, like almond milk. In addition, milk protein is a complete protein, while most plant protein sources are missing some of the amino acids your body needs.
- A. 2
  - B. 8
  - C. 20
  - D. 31
47. The Cooperatives Working Together (CWT) Program focuses on sales of what two dairy products?
- A. cheese and butter
  - B. yogurt and milk
  - C. ice cream and cheese
  - D. butter and milk

48. A milk producer would receive the maximum price for milk delivered within a milk marketing order if all of it was used to make
- A. dry whole milk
  - B. ice cream
  - C. mozzarella cheese
  - D. pasteurized milk
49. Under several Federal Milk Marketing Orders, milk is priced based on the amount of
- A. water and free fatty acids
  - B. mastitis and aflatoxins
  - C. bacteria counts of milk and antibiotics
  - D. fat, protein, and other solids
50. Federal Milk Market Orders provide \_\_\_\_\_ to distribute moneys fairly among producers supplying milk to a market
- A. a milk cooperative
  - B. a producer settlement fund
  - C. supply-demand equalization
  - D. a board of commissioners
51. What is the name given to the system utilized by the Federal Milk Marketing Orders that sets producer prices based on the finished dairy product in which the milk was used?
- A. market pricing
  - B. classified pricing
  - C. creative pricing
  - D. hedge pricing
52. Mastitis has severe economic consequences. The high somatic cell count causes a decrease in cheese yield and the bacteria causes a (an) \_\_\_\_\_ in the lactose (milk sugar).
- A. denaturation
  - B. decrease
  - C. increase
  - D. gram-negative infection
53. Most dairy cows are milked two to three times per day. On average, a cow will produce \_\_\_\_\_ gallons of milk each day.
- A. 1 to 2
  - B. 6 to 7
  - C. 15 to 16
  - D. 20 to 21
54. The actual milk check amount received by dairy farmers is called the \_\_\_\_\_.
- A. milk-feed ration price
  - B. cooperative bonus premium
  - C. Federal Order price
  - D. mailbox price

55. \_\_\_\_\_ is an effective natural choice exercise recovery drink due to its powerful nutrient package that supplies the nutrition the body needs after a workout. It has carbohydrates to help refuel the body; protein to help reduce muscle breakdown and stimulate growth; and fluid and electrolytes to aid in rehydration. Drinking it after resistance training has been shown to increase the body's ability to make new muscle and may help improve body composition.
- A. chocolate milk
  - B. Greek yogurt
  - C. Gatorade
  - D. Whey protein concentrate
56. The last 25 years have played host to a wide array of changes in the dairy industry. Which of the following is not considered one of the top 5 most important criteria causing changes?
- A. herd size and milk price
  - B. global warming
  - C. changing technology
  - D. organic farming
57. Organic food sales are on the rise. What food product is the top organic seller?
- A. butter
  - B. lettuce
  - C. fluid milk
  - D. bread
58. The top three milk producing states for 2017 in the U.S. were:
- A. Missouri, Illinois, and Wisconsin
  - B. Minnesota, California, and Wisconsin
  - C. California, Wisconsin, and New York
  - D. California, Wisconsin and Idaho
59. Minimum prices for which of the following is not established by Federal Milk Market Orders?
- A. over-order premium
  - B. Butterfat price
  - C. Class II price
  - D. Somatic Cell Count Adjustment
60. Prices paid by handlers are identical in all federal orders for milk utilized in the manufactured product categories, however milk used in Class I varies by location. The highest price paid for Class I milk is in the \_\_\_\_\_ region of the United States.
- A. Southeast
  - B. Midwest
  - C. Northwest
  - D. Northeast



## 2019 Minnesota FFA Milk Production Exam Key

### Milk Production

1. D
2. B
3. C
4. B
5. A
6. C
7. C
8. A
9. B
10. C
11. D
12. A
13. B
14. A
15. A
16. B
17. D
18. C
19. A
20. C
21. B
22. D
23. A
24. C
25. B
26. A
27. C
28. D
29. B
30. C

### Milk Marketing

31. C
32. C
33. B
34. C
35. B
36. D
37. B
38. B
39. D
40. C
41. B
42. A
43. B
44. B
45. C
46. B
47. A
48. D
49. D
50. B
51. B
52. B
53. B
54. D
55. A
56. B
57. C
58. D
59. A
60. A