Milk Quality and Products FFA CDE Exam - KEY

This exam consists of two parts: Quality Milk Production and Milk Marketing. Each section will be composed of thirty question, all questions are valued at one point each. Do not mark answers on this exam. Please mark all responses on the appropriate section of the answer sheet. For true and false responses be sure to mark A for True or B for False.

Quality Milk Production

1. Which variety of cheese is distinguished by being very hard?

A. Brick B. Cheddar C. Swiss D. Parmesan

2. Which breed of dairy cattle has the highest average milk fat production by percentage?

A. Brown Swiss B. Jersey C. Holstein D. Ayrshire

3. What is the primary protein in milk involved in the manufacture of cheese?

A. α - Casein B. α - Lactalbumin C. β - Lactoglobulin D. Calcium

4. What happens to the somatic cell level in milk from a cow with a clinical case of mastitis?

A. Increases by 10% B. Decreases by 15% C. No detectable difference

D. Increases in direct proportion to the severity of infection

5. Which classification of mastitis will show visible signs of infection?

A. Clinical B. Acute C. Subclinical D. Chronic

6. What temperature must a farm bulk tank, or cooling plate, have the capacity to cool milk down to within two hours of the end of a milking?

A. ≥50°F B. ≈40° C C. ≤45° F D. ≤50° K

7. What is the off flavor in milk resulting from an excess of Sodium ions?

A. Cooked B. Oxidized C. Rancid D. Salty

8. Which of the components in milk is the least abundant?

A. Milk fat B. Protein C. Water D. Lactose

9. What is the name of the process of stabilizing the milk fat in the milk serum so that the last drink from the container is just like the first?

A. Pasteurization B. Separation C. Homogenization D. Packaging

10. Which action is most likely to cause the development of a foreign flavor in milk?

A. Feeding haylage

B. Entrainment in the bulk tank after cleaning

C. Exposing the milk to excessive light

D. Over agitating raw milk during cooling and storage

11. What is the maximum permissible level of somatic cells in Grade “A” milk?

A. ≥100,000 B. ≈300,000 C. ≤400,000 D. ≤750,000

12. Approximately how many pounds of milk are required to produce a pound of cheddar cheese?

A. 11 B. 9 C. 10 D. 12

13. Sour milk is caused by bacterial growth converting milk sugar into \_\_\_\_\_\_.

A. Ketones B. Lactic Acid C. Aldehydes D. Citrates

14. What is the maximum bacteria count allowed for a tanker load of Grade “A” milk, obtained from 2 producers?

A. ≥20,000 CFU/ml B. ±100,000 CFU/ml C. ≤10,000 CFU/ml D. ≤300,000 CFU/ml

15. Approximately half of the mineral stone accumulation on dairy equipment comes

from milk solids. What is the source of the other half?

A. Water B. Caustic C. Sanitizer D. Heating

16. What percent of the total proteins in milk are represented by the whey or serum proteins?

A. 14% B. 18% C. 25% D. 40%

17. The Kjeldahl test is used to determine:

A. Milk fat B. Protein C. Minerals D. Solids-not-fat

18. When cream is pasteurized by the High Temperature Short Time (HTST) method,

each particle of milk must be heated to \_\_\_\_\_\_\_\_.

A. 143°F for 15 minutes B. 143°F for 30 minutes

C. 161°F for 15 seconds D. 175°F for 25 seconds

19. The activity/inactivity of which enzyme is the basis for confirming the adequacy of the milk

pasteurization process?

A. lactase B. phosphatase C. protease D. catalase

20. The specific gravity of milk is 1.032 at 60°F. Which of the following may be determined by knowing the specific gravity of a milk sample?

A. Freezing point B. Water addition

C. Bacteria count D. Somatic cell count

21. Which material is most often a causative agent leading to a flavor defect in milk?

A. Iron B. Copper C. Aluminum D. Stainless Steel

22. What type of off-flavor typically develops based on the action of lipase enzyme in raw milk?

A. Oxidized B. Foreign C. Rancid D. Malty

23. Which of the following chemical sanitizing agents is active against bacteriophage across the broadest range of pH conditions?

A. Steam B. Acid Anionic cleaners

C. Iodine Compounds D. Chlorine Compounds

24. Which of the following conditions is most likely to cause an acid flavor defect in milk?

A. Elevated levels of somatic cells B. Exposure to sunlight

C. Contamination with Chlorine D. Elevated storage temperature

25. Salty flavor in milk can be attributed to two things:

A. Too much salt in the ration and impaired kidney function of the cow

B. Excessive feeding of minerals and dry roughage

C. Cows with mastitis and milk produced late in a cow’s lactation period

1. Salt based sanitizers or alkaline water for drinking.

26. Since the legal minimum milk-solids-not-fat content is 8.25%, richer milk may be

diluted to that percent by addition of water.

A. True B. False

27. Hot and cold running water must be provided in the milk room of a Grade “A” dairy.

A. True B. False

28. Pasteurization of milk reduces the protein and calcium content of the milk.

A. True B. False

29. All milk may be filtered to remove bacteria which could be present.

A. True B. False

30. Milk from cows treated with antibiotics may be returned to the bulk tank after 48 hours.

A. True B. False

Milk Marketing

31. Which of the following documents sets forth the regulatory standards that all milk suitable for

marketing as a beverage must meet?

A. Code of Federal Regulations

B. Grade ‘A’ Pasteurized Milk Ordinance and Code

C. Standard Methods for the Examination of Dairy Products

D. Codex Alimentarius of the World Health Organization

32. Milk controlled under federal orders must qualify as \_\_\_\_\_\_\_\_.

A. Grade A B. Class I

C. Free of adulterating chemicals D. All Grades

33. What are the federal minimum legal levels for milk fat and total milk solids in milk marketed as ‘whole milk’?

A. 3.5% and 8.5% B. 3.25% and 11.5% C. 3.5% and 11.75% D. 3.25% and 8.25%

34. 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

35. What was the average annual per capita consumption of beverage milk in the United States in 2012, in gallons per person?

A. 25 B. 20 C. 35 D. 50

36. Which of the following is not a cause of poor retail shelf life in pasteurized milk products?

A. Thermoduric bacteria B. Psychrotrophic bacteria

C. Storage at ≥40°F D. Fluorescent lighting

37. What is the maximum number of viable microorganisms that may be present in pasteurized milk made available for retail sale?

A. 5,000 CFU/ml B. 10,000 CFU/ml

C. 20,000 CFU/ml D. 100,000 CFU/ml

38. Milk marketing cooperatives

A. Are not permitted by Federal Orders

B. Provide marketing power for dairy farmers

C. Control Federal Orders

D. Operate only outside Federal Orders.

39. What was the primary reason set forth for the initial establishment of the Federal Milk Marketing Orders (FMMO)?

A. Make dairying profitable

B. Improve the overall nutrition of consumers

C. Assure an adequate supply of milk for consumers over the long-term

D. Act to determine the prices consumers pay for bottled milk in the retail market

40. What Federal Marketing Order class would be utilized to price milk being processed into Greek style yogurt?

A. Class I B. Class II C. Class III D. Class IV

41. A Producer Price Differential may be applied to which class of milk under FMMO?

A. Class I B. Class II C. Class III D. Class IV

42. When did the FMMO first come into existence?

A. 1927 B. 1937 C. 1965 D. 1973

43. What item of federal legislation authorized the legality of farmer cooperatives and provided them with legal rights of negotiation for their members in matters related to the pricing structures and marketing of milk products?

A. Morrill Act B. Sherman Act C. Capper-Volstead Act D. Casper-Volker Act

44. What is the average annual per capita consumption of Italian-style cheeses marketed in the United States?

A. 14.9 pounds B. 42 pounds C. 13.2 pounds D. 33.5 pounds

45. During the 2011-2012 timeframe, which beverage milk product experienced the smallest total sales volume on a per capita basis?

A. Flavored Milk B. Whole Milk C. Nonfat milk D. Reduced Fat Milk

46. Air incorporation into frozen dairy desserts is legal. What is the minimum weight, in pounds per finished gallon, for a frozen dessert marketed as sherbet?

A. 9.2 lb./gal. B. 4.5 lb./gal. C. 8.6 lb./gal. D. 6.0 lb./gal.

47. What is the smallest quantity of NFDM that can be traded in the spot market at the Chicago Mercantile Exchange?

A. 44,000 pounds B. 10,000 pounds C. 100,000 pounds D. 20,000 pounds

48. Which beverage milk category maintains the highest per capita consumption rate?

A. Whole Milk B. Reduced Fat Milk C. Low Fat Milk D. Nonfat milk

49. Which of the following cheese varieties has the highest annual per capita consumption rate?

A. Provolone B. Swiss C. Cream D. Parmesan

50. Which sales format for cheeses represented the largest dollar value in supermarket sales during 2012?

A. Stick/String B. Processed spreads C. Natural slices D. Natural shredded

51. According to the USDA Dairy Products summary, Wisconsin has the largest number of dairy manufacturing plants. Which state does not have any dairy manufacturing facilities?

A. Arkansas B. Mississippi C. Utah D. Wyoming

52. Which country is the world’s leading dairy exporter?

A. China B. United States C. Argentina D. New Zealand

53. 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

54. In matters pertaining to the adoption or alteration of a Federal Milk Marketing Order, producer cooperatives may vote their membership as a block rather than having individual members vote.

A. True B. False

55. Milk handlers are not permitted to pay producers more than the monthly prices announced and published by the Federal Milk Marketing Order administrators.

A. True B. False

56. Class III milk is used in the manufacture of frozen dairy desserts.

A. True B. False

57. Market pricing is the application of a schedule of prices which handlers pay for producer milk based on the final use of the milk.

A. True B. False

58. A milk fat differential is the amount a price is increased or decreased relative to variations in milk fat level compared to a baseline standard.

A. True B. False

59. All milk allocated for trading on the futures market at the Chicago Mercantile Exchange must be under jurisdiction of the Federal Milk Market Administration.

A. True B. False

60. The first milk obtained after calving is called colostrum. This product may be included, processed and marketed with all other milk for use at a bottling facility.

A. True B. False