

**2017 Virginia FFA Milk Quality and Products Career Development Event
Written Exam**

Name: _____ FFA Chapter: _____

Instructions: This exam consists of 60 multiple-choice questions. Each question is worth two points. Choose the single best answer to each question and mark your answer on the back of your Scantron form in the "Written Exam" sections. Time limit is 40 minutes.

Milk Production

1 The milk of which breed is known for its golden color?

- A. Ayrshire
- B. Brown Swiss
- C. Guernsey
- D. Holstein
- E. Jersey

2 What name is given to milk that is secreted during the first two to three days after calving?

- A. Colostrum
- B. Milk replacer
- C. Raw milk
- D. Residual milk
- E. Ropy milk

3 What name is given to the process in ruminants when semi-liquid ingested feed is regurgitated into the esophagus, re-chewed, and re-swallowed for further digestion?

- A. Eructation
- B. Mastication
- C. Metabolization
- D. Rumination
- E. None of the above

4 Fats and carbohydrates are major sources of _____ for the dairy cow.

- A. Energy
- B. Minerals
- C. Protein
- D. Vitamins
- E. Water

5 Lysine and methionine are the most limiting _____ in dairy cattle nutrition.

- A. Amino acids
- B. Fatty acids
- C. Minerals
- D. Peptides
- E. Proteins

6 What mineral is needed by the dairy cow in the largest quantity?

- A. Chlorine
- B. Magnesium
- C. Phosphorus
- D. Potassium
- E. Sodium

7 The average dairy cow drinks 30 to 50 _____ of water each day.

- A. Gallons
- B. Liters
- C. Pints
- D. Pounds
- E. Quarts

8 What is generally considered to be the best material for covering a bunker silo?

- A. Hay
- B. Newspaper
- C. Plastic
- D. Sawdust
- E. Straw

9 What is the largest cost associated with milk production?

- A. Feed
- B. Insurance
- C. Labor
- D. Replacement heifers
- E. Taxes

10 What are the spherical clusters of secretory cells in the mammary gland that are arranged in grape-like structures called?

- A. Alveoli
- B. Gland cistern
- C. Keratin
- D. Myoepithelium
- E. Teat cistern

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11 What is the period of time when a cow is in milk called?

- A. Dry period
- B. Estrus
- C. Gestation
- D. Lactation**
- E. Parturition

12 What is the cyclic opening and closing of a teat cup liner called?

- A. Agitation
- B. Pulsation**
- C. Pulsation rate
- D. Pulsation ration
- E. Vacuum regulation

13 Bulk tanks are usually made of _____.

- A. Aluminum
- B. Copper
- C. Iron
- D. Plastic
- E. Stainless steel**

14 What is the milk-mineral deposit found on milk handling equipment called?

- A. Hardware
- B. Milk stone**
- C. Osteoporosis
- D. Plaque
- E. Residual milk

15 What are the first streams of milk that are stripped from the udder prior to milking called?

- A. Colostrum
- B. Foremilk**
- C. Raw milk
- D. Ropy milk
- E. None of the above

16 What type of mastitis continues over a long period of time, with progressive development of scar tissue and simultaneous reduction in milk yield?

- A. Acute
- B. Chronic**
- C. Clinic
- D. Subclinical
- E. None of the above

17 What hormone is responsible for milk letdown?

- A. Estrogen
- B. Oxytocin**
- C. Progesterone
- D. Prolactin
- E. Prostaglandin

18 What is the most frequent cause of high bacteria counts in milk?

- A. Contaminated wells
- B. Dirty equipment**
- C. Flies
- D. Liner slips
- E. Poor ventilation

19 Which of the following is an on-farm screening test used to detect mastitis?

- A. California Mastitis Test (CMT)
- B. Conductivity
- C. Strip cup
- D. All of the above**
- E. None of the above

20 High numbers of somatic cells in milk are generally an indicator of what?

- A. Acidosis
- B. Brucellosis
- C. Estrus
- D. Hardware disease
- E. Mastitis**

21 The legal limit for bacteria counts in raw milk is _____ cfu/ml.

- A. 1,000
- B. 5,000
- C. 100,000**
- D. 400,000
- E. 750,000

22 When is the most effective time to treat mastitis infections?

- A. At 150 days in milk
 - B. At drying off**
 - C. Just prior to calving
 - D. When clinical signs are observed
 - E. None of the above
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23 Organic dairy production is a method of production that uses which of the following?

- A. Antibiotics
- B. Hormones to promote growth
- C. Mammalian or poultry by-products in feed
- D. All of the above
- E. **None of the above**

24 In 2016, U.S. dairy farmers produced how many pounds of milk?

- A. 212.4 thousand
- B. 212.4 million
- C. **212.4 billion**
- D. 212.4 trillion
- E. 212.4 quadrillion

25 What state ranked first for milk per cow in 2016?

- A. Arizona
- B. California
- C. **Colorado**
- D. Washington
- E. Wisconsin

26 What is the standard length of a DHIA record?

- A. 90 days
- B. 150 days
- C. **305 days**
- D. 365 days
- E. 400 days

27 Which dairy breed has the longest gestation period?

- A. **Brown Swiss**
- B. Guernsey
- C. Holstein
- D. Jersey
- E. Milking Shorthorn

28 What is the number one reason for culling in U.S. dairy herds?

- A. Disposition
- B. Feet and legs
- C. Injury
- D. Mastitis
- E. **Reproductive failure**

29 What term describes management practices that protect the herd from entry of new diseases and minimize the spread and/or adverse effects of diseases in the herd?

- A. **Biosecurity**
- B. Immunity
- C. Pasteurization
- D. Sanitation
- E. Zoonoses

30 What is the common name for hypocalcemia?

- A. Calving difficulty
- B. Circling disease
- C. Ketosis
- D. **Milk fever**
- E. Shipping fever

Milk Marketing

31 The first commercial cheese factory was established in 1851 in what state?

- A. Connecticut
- B. **New York**
- C. Ohio
- D. Pennsylvania
- E. Virginia

32 In what year was the milk bottle invented?

- A. 1611
- B. 1810
- C. **1884**
- D. 1906
- E. 1950

33 What legislation was passed by Congress in 1922 to empower farmers and agricultural producers to market, price, and sell their products through cooperative means?

- A. Agricultural Marketing Agreement Act
 - B. **Capper-Volstead Act**
 - C. Hatch Act
 - D. Morrill Act
 - E. Smith-Lever Act
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34 In what year did the commercial introduction of the plastic milk jug happen?

- A. 1900
- B. 1914
- C. 1925
- D. 1964**
- E. 2001

35 What company is the largest processor and distributor of milk and dairy products in the U.S.?

- A. Kraft Foods
- B. Kroger
- C. Land O'Lakes
- D. Nestlé USA**
- E. Sargento

36 What company is the world's largest yogurt maker?

- A. Chobani
- B. Danone**
- C. Oikos
- D. Stonyfield Farms
- E. Yoplait

37 What is the primary protein found in milk?

- A. Beta-lactoglobulin
- B. Casein**
- C. Lactose
- D. Whey
- E. None of the above

38 For what purpose would a milk plant use a cryoscope?

- A. To add vitamins to milk
- B. To determine if water has been added to milk**
- C. To measure bacteria counts in milk
- D. To measure somatic cell counts in milk
- E. To separate cream from skim milk

39 What test is used to determine if raw milk has mixed with pasteurized milk?

- A. Acid degree value
- B. Leukocyte count
- C. Phosphatase test**
- D. Sediment test
- E. Standard plate count

40 What is the process by which vitamins are added to milk?

- A. Fortification**
- B. Homogenization
- C. Pasteurization
- D. Separation
- E. Standardization

41 What is the major solids component of milk?

- A. Lactose**
- B. Milk fat
- C. Minerals
- D. Protein
- E. Water

42 What vitamin is added to milk at processing time to prevent rickets?

- A. Vitamin A
- B. Vitamin B₁₂
- C. Vitamin C
- D. Vitamin D**
- E. Vitamin E

43 Pigmented milk cartons are used to prevent what off-flavor?

- A. Acid
- B. Bitter
- C. Fruity
- D. Oxidized**
- E. Salty

44 What off-flavor occurs when there are large numbers of bacteria present in milk?

- A. Cooked
- B. Fermented
- C. Lacks freshness
- D. Rancid
- E. **Sour**

45 Why are antibiotic residues not allowed in milk for human consumption?

- A. Antibiotics are not a natural part of milk
 - B. Milk that contains antibiotic residues is not good for cheese making.
 - C. Some people are allergic to antibiotics.
 - D. All of the above**
 - E. None of the above
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46 The batch method of pasteurization heats milk for at least 30 minutes at what temperature?

- A. 145°F
- B. 161°F
- C. 180°F
- D. 200°F
- E. 212°F

47 What label would be applied to milk that contains 2.5 grams of fat and 100 calories per cup?

- A. Fat free
- B. Lowfat
- C. Reduced fat
- D. Skim
- E. Whole

48 What is often added to fat free milk to whiten the milk?

- A. Beta carotene
- B. Sodium bicarbonate
- C. Sodium chloride
- D. Titanium dioxide
- E. Vitamin A

49 What is the most popular variety of cheese in the United States?

- A. Cheddar
- B. Colby
- C. Monterey Jack
- D. Mozzarella
- E. Swiss

50 Which of the following is not an example of a cultured dairy product?

- A. Acidophilus milk
- B. Butter
- C. Buttermilk
- D. Sour cream
- E. Yogurt

51 Who is responsible for regulating Federal Milk Marketing Orders?

- A. CEO of the National Milk Producers Federation
- B. Chair of the U.S. House Committee on Agriculture
- C. Chair of the U.S. Senate Agriculture, Nutrition & Forestry Committee
- D. President of National DHIA
- E. U.S. Secretary of Agriculture

52 Federal Milk Marketing Orders have four milk classes based on how milk is used by the processor or in a marketing area. To what class does chocolate milk belong?

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

53 What is the name of the document that establishes the standards for Grade A milk?

- A. Grade A Milk Guidelines
- B. National Milk Standards
- C. Pasteurized Milk Ordinance
- D. Quality Milk Regulations
- E. None of the above

54 What milk cooperative was ranked first based on member milk volume in 2015?

- A. California Dairies, Inc.
- B. Cooperative Milk Producers Association
- C. Dairy Farmers of America
- D. Land O'Lakes, Inc.
- E. Maryland & Virginia Milk Producers Cooperative Association

55 What percent of the milk produced in the U.S. in 2015 was supplied by the top 50 cooperatives?

- A. 20%
- B. 40%
- C. 60%
- D. 80%
- E. 95%

56 Funding for the Cooperatives Working Together (CWT) program comes from farmers who invest how much money per hundredweight of milk sold?

- A. 1¢
 - B. 4¢
 - C. 10¢
 - D. 15¢
 - E. \$1.00
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57 What state ranks first for the number of organic dairy cows?

- A. California
 - B. Massachusetts
 - C. Pennsylvania
 - D. Vermont
 - E. Virginia
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58 National Grilled Cheese Month is observed in what month?

- A. April
 - B. May
 - C. June
 - D. July
 - E. August
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59 According to the 2015 Dietary Guidelines for Americans, how many cup-equivalents of dairy are recommended in the Healthy U.S.-Style Pattern for children ages 2 to 3 years?

- A. 1
 - B. 2
 - C. 2.5
 - D. 3
 - E. 3.5
-

60 How much does a gallon of milk weigh?

- A. 2.2 pounds
 - B. 8.6 pounds
 - C. 10 pounds
 - D. 12 pounds
 - E. 21.2 pounds
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