

CALIFORNIA FFA DAIRY JUDGING QUESTIONS #1-200
2024

(Sources 2022 & 2023 Hoard's End of the Year Quiz/2022 and 2023 National FFA Dairy Judging Questions)

1. Which nutrient in milk makes it a high energy drink?
A) Calcium **B) Protein** C) Potassium D) Vitamin B12
2. What is the optimum range for milk urea nitrogen?
A) 1 to 3 mg/dL **B) 8 to 12 mg/dL** C) 15-18 mg/dL D) 23-28 mg/dL
3. Which of the following can contaminate feed and drain cows' energy?
A) Fungi
B) Mycotoxins
C) Bacteria
D) All of the above
4. Methionine is an example of a functional amino acid. This means that it serves what purpose in addition to being a building block for protein?
A) Regulates biological functions
B) Forms milkfat
C) Functions as a buffer
D) Acts as an ionophore
5. Water delivered to calves should be less than 80°F but above what temperature?
A) 40°F B) 50°F **C) 60°F** D) 70°F
6. How often should feed bunks for the milking herd be cleaned out to remove refusals?
A) Never **B) Daily** C) Once a week D) Every other week
7. Which of the following is NOT a benefit yeast can provide to the dairy ration?
A) Stabilize rumen pH
B) Support microorganism development
C) Improve fiber digestion
D) Convert lactic acid
8. What is the term for when animals eat inanimate objects that aren't food?
A) Deficient B) Inactive C) Bored **D) Pica**
9. During storage, what happens to a corn silage's processing score?
A) Rises B) Falls C) Stays the same D) Rises then falls
10. When properly stored, silage inoculants often have a shelf life of at least how long?
A) 3 months B) 6 months C) 9 months **D) 12 months**
11. When pre-dipping, how much of the teat barrel should be coated?
A) 3/4 B) 1/2 C) 1/3 D) Just the teat end

12. Adrenaline limits milk letdown and is produced due to animal stress. How long can the inhibitory effects of adrenaline last?
A) 60 seconds B) 10-15 minutes **C) 20 to 30 minutes** D) An hour
13. Tube feeders deposit milk into which stomach compartment?
A) Rumen B) Reticulum C) Omasum D) Abomasum
14. What structure controls a cow's response to daylight and day length?
A) Cornea B) Retina **C) Pineal gland** D) Melatonin
15. How many times should a needle be used to administer treatments before it is disposed of?
A) Once B) Twice C) 3 times D) As many as it can
16. What measure is the best gauge of an animal's core body temperature?
A) Respiration Rate
B) Skin Temperature
C) Monitor temperature humidity index (THI)
D) Rectal temperature
17. What substance is administered orally and often used to treat ketosis?
A) Propylene glycol
B) Calcium
C) Meloxicam
D) All of the above
18. If a farm is using "blanket dry cow therapy," all cows are receiving what at dry-off?
A) Scours vaccine
B) Antibiotics
C) Fungicide
D) A haircut
19. What term refers to the period of time after tactile stimulation is completed and before the milking unit is attached?
A) Preparation lag time
B) Let down time
C) Latency period
D) Drag period
20. Meloxicam is an example of what type of animal treatment?
A) Non-steroidal anti-inflammatory drug
B) Antibiotic
C) Coccidiostat
D) Anesthesia

21. Adenosine triphosphate (ATP) swab tests may be used to check what?
A) **Cleaning protocols**
B) Milk quality
C) Starch digestibility
D) Colostrum quality
22. Which region of the country has the largest average herd size?
A) Northeast B) Southeast C) Midwest **D) West**
23. In a compost-bedded pack barn, a farm should aim to keep the pack moisture below what level?
A) 20% B) 40% **C) 60%** D) 80%
24. Extended lock-up time in headlocks can be defined as more than how many hours per day?
A) 2 **B) 4** C) 5 D) 7
25. What is a dairy cow's desired daily lying time?
A) 3-6 hours B) 8-10 hours **C) 11 to 13 hours** D) 15 or more hours
26. Every tractor should have a ROPS installed as a safety measure. What does ROPS stand for?
A) Rollover protection structure
B) Retractable, operating program for safety
C) Runaway and over protection system
D) Removable overhead protection structure
27. When choosing teat liners, it is important to consider the most common teat end shape in your herd. Which of the following is NOT a way that a teat end shape might be classified?
A) Flat B) Pointed C) Round **D) Sharp**
28. Which of the following is NOT a type of hay rake?
A) Sidebar **B) Fine tip** C) Wheel D) Rotary
29. What is the highest grade of butter sold in the United States?
A) US Grade 1 B) US Grade A **C) US Grade AA** D) US Grade A+
30. Which of the following is NOT a tool used to assist a down cow?
A) Hip sling
B) Flotation tank
C) Elevation table
D) Rolling the cow from side to side every few hours
31. High-moisture shelled corn should have a moisture content above what level?
A) 15% B) 19% C) 24% **D) 28%**

32. Compared to alfalfa and clovers, grass usually has how much internal ash, such as calcium and potassium?
 A) **Less** B) The same C) Slightly more D) Much more
33. Which of the following was not one of the TOP five corn silage-producing states in 2022?
 A) Wisconsin **B) California** C) Iowa D) Illinois
34. Composting manure can reduce the amount of material that needs to be land applied by up to how much?
 A) 10% B) 20% C) 30% **D) 40%**
35. To maximize regrowth efficiency, how much of the plant should be left after dairy animals graze a pasture and move to a new one?
 A) 25% B) 33% **C) 50%** D) 75%
36. In regard to corn development, what does GDD stand for?
 A) Growth and development during drought
B) Growing degree days
 C) Ground degree depth
 D) Growth development density
37. What is the fertilizer form of potassium called?
 A) Potassium B) Phosphate **C) Potash** D) Bicarbonate
38. Late season yellowing of the lower leaves in corn plants is often a normal sign of what type of deficiency?
 A) **Nitrogen** B) Phosphorus C) Potassium D) Sulfur
39. Which of the following is not an acceptable dry matter content for corn to be chopped for silage?
 A) **26%** B) 33% C) 35% D) 38%
40. What manure gas destroys the sense of smell when it reaches dangerously high concentrations?
 A) Ammonia
B) Hydrogen sulfide
 C) Carbon dioxide
 D) Methane
41. In what year did sales of dairy semen peak in the U.S. at 24 million doses?
 A) 1998 B) 2007 C) 2012 **D) 2015**
42. What process occurs after insemination to modify the sperm plasma membrane and is necessary for fertilization?
 A) Spermatogenesis **B) Capacitation** C) Deposition D) Dilution

43. In December 2023, the national cooperator database managed by the Council on Dairy Cattle Breeding reached how many recorded genotypes?
A) 3 million B) 5 million C) **8.5 million** D) 1 billion
44. Sexed semen should be thawed at what temperature for at least 45 seconds?
A) 89°F B) **95°F to 98°F** C) 100°F D) 102°F to 105°F
45. The interval from the onset of standing estrus to ovulation is approximately how long?
A) 12 hours B) 14 hours C) **28 hours** D) 36 hours
46. What allele in Holsteins causes a short hair coat and, subsequently, lower body temperatures?
A) **SLICK1** B) COOL3 C) SHORT D) HEAT2
47. Most pregnancy losses occur before what day of gestation?
A) Day 7 B) Day 21 C) Day 35 D) **Day 42**
48. A bull's semen fertility, as measured by sire conception rate, typically follows what trend as the bull gets older?
A) **Improves** B) Declines C) Stagnates D) Declines for a few years then stagnates
49. The Jersey breed originated on the Isle of Jersey, which sits off the coast of what nation?
A) **France** B) Ireland C) Netherlands D) Spain
50. It was recently announced that the first calf gene-edited to be resistant to what destructive cattle virus was born in 2021?
A) Johne's
B) Tuberculosis
C) **Bovine viral diarrhea**
D) Mad cow
51. What state is home to the most organic dairy farms?
A) **New York** B) Wisconsin C) Tennessee D) Oregon
52. Roughly what share of the U.S. milk supply was exported in 2022?
A) 12% B) **18%** C) 24% D) 28%
53. When comparing milk production to population, what state produces the most milk per person?
A) California B) **Idaho** C) Pennsylvania D) New Mexico
54. Milk produced by U.S. dairy cows set a new record for average butterfat content last year at what level?
A) 3.79% B) 3.96% C) **4.08%** D) 4.19%

55. When was the Dairy Margin Coverage (DMC) program first created?
A) Inflation Reduction Act of 2022
B) CARES Act of 2020
C) 2018 Farm Bill
D) 2013 Farm Bill
56. What share of U.S. cheese was produced in Wisconsin in 2022?
A) 8% B) 16% **C) 25%** D) 33%
57. Which Canadian province is home to the most dairy farms?
A) Quebec B) Manitoba C) Alberta D) Ontario
58. What dairy cooperative marketed the most milk in 2022?
A) Land O'Lakes
B) Dairy Farmers of America
C) California Dairies, Inc.
D) Edge Dairy Farmer Cooperative
59. What was the most-produced cheese in the U.S. in 2022?
A) American B) Cheddar C) Swiss **D) Mozzarella**
60. What share of the world's milk comes from cows?
A) 97% B) 92% C) 86% **D) 81%**
61. Preliminary incubation (PI) count identifies what type of bacteria in milk?
A) Cold-tolerant
B) Heat-tolerant
C) Coliforms
D) Gut bacteria
62. Milk fatty acids that are synthesized in the udder are referred to as what?
A) Saturated B) Preformed C) Unsaturated **D) De novo**
63. When a cow has a left displaced abomasum (LDA), the abomasum has slid under what other organ?
A) Heart B) Omasum **C) Rumen** D) Lungs
64. What hormone mobilizes calcium from the bone?
A) Growth hormone
B) Parathyroid hormone
C) Cortisol
D) Oxytocin
65. About half of the cost of a case of clinical mastitis is related to what?
A) Treatment **B) Discarded milk** C) Milk culturing D) Additional labor

66. What carcass quality concern is more prevalent in dairy-beef animals than conventional beef animals?
A) Toughness B) Poor marbling C) Fattiness **D) Liver abscesses**
67. What color is nitric acid?
A) Colorless B) White C) Black D) Light gray
68. Which of the following is NOT an environmental mastitis pathogen?
A) Klebsiella
B) Prototheca
C) E. coli
D) Staph. Aureus
69. The highest incidence of subclinical ketosis often occurs within the first how many days postpartum?
A) 60 B) 30 C) 21 **D) 7**
70. Why might you ultrasound a calf's lungs?
A) To detect pneumonia
B) To detect hardware disease
C) To discover cause of death
D) To monitor growth
71. The leading environmental issues facing farmers are contamination of ground and surface waters by which two nutrients?
A) Nitrogen (N) and Potassium (K)
B) Potassium (K) and Phosphorus (P)
C) Nitrogen (N) and Chlorine (Cl)
D) Nitrogen (N) and Phosphorus (P)
72. Which measure on a feed analysis report is used as a predictor of feed intake?
A) NDF B) Dry Matter C) ADF D) Protein
73. Which of the following factors influence the amount of water dairy cattle consume?
A) Body size
B) Water quality
C) Environmental temperature
D) All of the above
74. Which solutions are commonly used as teat dips on dairy farms?
A) Chlorine
B) Hydrogen peroxide
C) Chlorhexidine
D) All of the above

75. According to the PDCA Cow Unified Scorecard, which of the following is NOT a category on the scorecard?

- A) **Body Capacity 10 points**
- B) Udder 40 points
- C) Frame 15 points
- D) Dairy Strength 25 points

76. One of the recently fresh cows is ill. She has been receiving a high grain, low roughage diet. The consistency of the small amount of manure she produces is “putty-like.” Your veterinarian detects a “pinging” sound when using his stethoscope. What is the most likely diagnosis?

- A) **Left Displaced Abomasum**
- B) Milk Fever
- C) Grass Tetany
- D) Ketosis

77. Dr. Gustaf de Laval was credited with inventing what important piece of equipment?

- A) Tractor
- B) **Centrifugal cream separator**
- C) Calf hutch
- D) Semen tank

78. Which of the following is a part of the teat that milk passes through?

- A) **Streat canal**
- B) Inflation
- C) Cervix
- D) Pituitary

79. An example of a Class IV use for milk would be to make:

- A) Hard cheese
- B) Ice cream
- C) Chocolate Milk
- D) **Butter**

80. One effective method to prevent milk fever in dry cow rations is to supplement with anionic salts. What type of electrical charge does an anion have?

- A) Positive
- B) Neutral
- C) **Negative**
- D) They do not have a charge at all

81. What is one challenge to successfully applying anionic salts to dry cow diets?

- A) **Poor palatability**
- B) Add too much energy to the diet
- C) Results in the cow calving early
- D) Decreases milk production

82. The ruminant stomach is comprised of 80% of this first compartment:

- A) Reticulum
- B) Omasum
- C) **Rumen**
- D) Abomasum

83. Which dairy breed produces milk with the highest fat and protein content?

- A) Ayrshire
- B) Brown Swiss
- C) **Jersey**
- D) Holstein

84. What is the name of the organization that resulted from the collaboration among industry partners, breed associations, AI companies, DHIA testing organizations and the dairy records processing centers?

- A) World Dairy Expo
- B) Animal Improvement Programs Laboratory
- C) Dairy Business Association
- D) Council on Dairy Cattle Breeding**

85. The local veterinarian has invited you to do a herd visit with him to determine why calves are experiencing illness. You are asked to observe the calves housed outside in individual calf hutches. Calves appear to be lethargic and dehydrated. You notice calves have watery stools that are brown, grey, or yellow in color. Calves are weak and depressed. Upon reviewing birth information, the most seriously affected calves average 2-4 days of age. The bedding appears wet and dirty in both the calf hutches and the maternity pen. The most likely cause for this condition is which of the following:

- A) Too much milk being fed
- B) E. coli bacteria causing scours**
- C) Antibiotic residues
- D) Too much protein in the milk replacer

86. The dehydrated calves in question #85 should be supplemented with which of the following:

- A) Fat
- B) Protein
- C) Hay
- D) Electrolytes**

87. One way to help prevent the incidence of the sick calves in question #85 is to:

- A) Group calves together
- B) Provide clean, dry, well bedded calving pens and calf hutches**
- C) Let the calf nurse on the cow immediately after calving
- D) Feed more milk

88. Which of the following is NOT considered a micromineral?

- A) Phosphorus**
- B) Cobalt
- C) Zinc
- D) Iodine

89. The record of an animal's ancestry that provides genetic and performance information on an animal and its ancestors is commonly referred to as a?

- A) Family tree
- B) Registration paper
- C) Breeding chart
- D) Pedigree**

90. What hormone can interfere with milk letdown when a cow becomes frightened or upset?

- A) Prolactin
- B) Progesterone
- C) Adrenaline (epinephrine)**
- D) Oxytocin

91. In 2023, FFA Dairy will maintain an average SCC of 125,000 cells/ml in all 1st lactation cows. In the SMART goal, 125,000 cells/ml SCC, represents which part of the acronym?

- A) Specific
- B) Measurable**
- C) Attainable
- D) Realistic

92. You call your local veterinarian to evaluate the reproductive status of your dairy cows. He uses an ultrasound machine to help determine what?

- A) Pregnancy
- B) Sex of embryo
- C) Monitor cystic ovaries
- D) All of the answers**

93. If the MUN level is considered high, which nutrient is likely to be in excess?
 A) Fats B) Carbohydrates C) Vitamins **D) Protein**
94. Recently, your cows have been experiencing less production, lower butterfat, and sick cows that never seem to recover. What could be the cause of these symptoms?
 A) Ketosis B) Milk Fever C) Johne's **D) Rumen Acidosis**
95. This vitamin is derived from carotenoids found in plants and serves a wide range of functions for the animal.
 A) Vitamin E B) Vitamin D C) Vitamin C **D) Vitamin A**
96. Corn silage harvest was recently completed. Your nutritionist arrives to take a forage sample for analysis to determine a new ration formulation. You received the test report back. One number in particular that you are interested in knowing is the ADF value. What does ADF stand for?
 A) Area Dairy Forage
 B) Active Digestible Fiber
C) Acid Detergent Fiber
 D) Available Digestible Forage
97. What does ADF measure in feed?
 A) Protein
 B) Dry matter
 C) How much cellulose, hemicellulose, and lignin are in the feed
D) How much cellulose, lignin, and lignified nitrogen components are in the feed
98. Ideally, how much ADF should make up a high-producing cow's ration?
 A) **18-21%** B) 10% C) 30-40% D) >50%
99. What is the target for body condition score (BCS) at calving and dry-off?
 A) 2.75 **B) 3.0-3.25** C) 4.0-4.25 D) 2.5 E) 5.0
100. What is the most likely limiting nutritional requirement for a high-producing dairy cow?
 A) Water B) Vitamins C) Minerals **D) Energy**
101. Volatile fatty acids are the main products of carbohydrate digestion by rumen microorganisms. Which of the following are volatile fatty acids produced in the rumen?
A) Acetate and Propionic acid
 B) Butyric and Hydrochloric Acid
 C) Propionate and Lysine
 D) Methionine and Acetate
102. FFA Dairy recently began making cheese on the farm. In order to get the milk to curdle, what coagulant made from an enzyme found in the inner lining of a calf's stomach is added to the milk?
 A) Coccidiosis **B) Rennet (Rennin)** C) IBR D) Lactose

103. In early summer, you select the heifers you want to show. As you examine the animals, you notice signs on the face, neck and ears of what you believe to be a contagious disease caused by a fungus leading to an infection outside of the immune system of the heifers. This disease that invades the hair follicles and the outer layer of skin is commonly known as:

- A) Shipping Fever
- B) Ringworm**
- C) Black Leg
- D) Rabies

104. The age of cattle most susceptible to the disease in Question #103 are?

- A) 1st lactation cows
- B) Mature bulls
- C) Mature Cows
- D) Young animals (calves and heifers)**

105. Raw milk produced on the farm has which of the following milk quality tests performed at the milk plant?

- A) Sediment test
- B) Antibiotic test
- C) Preliminary incubation (PI) count
- D) All of the above**

106. The purpose of this program is to show customers that the dairy industry is taking the very best care of cows and the environment, producing safe and wholesome milk, and adhering to the highest standards of workforce development. The name of the program is:

- A) National Dairy FARM Program**
- B) Farm Bill Program
- C) Dairy Margin Coverage Program
- D) Precision Dairy Farming

107. Through what process is carbon dioxide taken from the atmosphere and fixed as carbohydrates in plant material?

- A) Respiration
- B) Transpiration
- C) Photosynthesis**
- D) Photoperiod

108. Factors effecting a dairy herd's conception rate include which of the following?

- A) All of the following**
- B) Heat detection accuracy
- C) Semen (bull) fertility
- D) Herd (cow) fertility

109. Budgets, balance sheets and cash flow projections are valuable and essential management tools, but they do not tell the manager if the business is profitable. What is the only tool of farm business analysis that measures profitability?

- A) Bank Statement
- B) Equity Statement
- C) Income Statement**
- D) Schedule F

110. During a recent visit with your A.I. salesman, you are discussing the new bull proofs with her and want her help in selecting the best bulls to use on your heifers to improve PL. What does the acronym PL stand for?
- A) Production Lifetime
 - B) Productive Life**
 - C) Predicted Lifetime
 - D) Predicted Longevity
111. Carbohydrates often make up what percentage of a cow's energy needs?
- A) 100%
 - B) 20 to 30%
 - C) 50-60%**
 - D) 70-80%
112. If a cow is "slug feeding," what is she doing?
- A) Eating a large meal all at once**
 - B) Eating many small meals
 - C) Eating very slowly
 - D) Only eating at night
113. Amino acids are the building blocks for protein, but what compound is a building block for amino acids?
- A) Ammonia nitrogen**
 - B) Ammonium hydroxide
 - C) Monosaccharides
 - D) Polysaccharides
114. What is the limiting factor for ruminants to digest fiber?
- A) Cellulose
 - B) Energy
 - C) Lignin**
 - D) Protein
115. The longest particles of a ration will be restrained on the top sieve of a Penn State Particle Separator. That sieve has openings that are how big?
- A) 12 millimeters
 - B) 16 millimeters
 - C) 19 millimeters**
 - D) 7 millimeters
116. Baleage should be dried to what % dry matter?
- A) 27-33%
 - B) 40-55%**
 - C) 60-65%
 - D) 68-72%
117. What 2 crops are referred to as the "king and queen" of forages?
- A) Corn silage and alfalfa**
 - B) Corn silage and oats
 - C) Haylage and clover
 - D) Triticale and oats
118. What is the target pH for corn silage?
- A) 4**
 - B) 5
 - C) 6
 - D) 7

119. What by-product do U.S. dairy cows eat at the highest rate:
A) Almond hulls
B) Beet pulp
C) Corn distillers grains
D) Soybean meal
120. What is a recommended goal for feed refusals for high-producing cows?
A) 0% **B) 1-3%** C) 5-6% D) 10%
121. Calves begin having trouble regulating body temperature when the environmental temperature drops below what level?
A) 59°F B) 65°F C) 72°F D) 78°F
122. What is the maximum length of time a multiparous cow (having calved more than once) may be dry before future lactations will be negatively affected?
A) 60 days B) 70 days **C) 80 days** D) 90 days
123. In animals treated with medication, dehydration can have what effect on the time it takes the drug to clear the animal's body?
A) Eliminates **B) Extends** C) No effect D) Shortens
124. Milk letdown may be inhibited if cows experience rough handling up to how long before milking?
A) 1 hour B) 15 minutes **C) 30 minutes** D) 5 minutes
125. Which of the following is NOT a class of teat dip?
A) Chlorhexidine B) Chlorine dioxide **C) Formaldehyde** D) Peroxide
126. Heat-stressed cows will have elevated respiration rates of at least how many breaths per minute?
A) 30 B) 40 C) 50 **D) 60**
127. Of the following, which does fore-stripping NOT achieve?
A) Checks for abnormal milk
B) Encourages the flow of adrenaline
C) Removes the highest somatic cell count milk
D) Stimulates milk letdown
128. If you want to house calves in pairs, when should the calves be put together?
A) In the first few days of life
B) In the first week
C) In the first 3 weeks
D) Any of the above
129. Debris buildup can reduce fan efficiency by up to what percent?
A) 10% B) 20% C) 30% **D) 40%**

130. What is the primary way to control body condition score (BCS) at first insemination.
- A) Delay first insemination until cows reach appropriate condition
 - B) Feed more energy early in lactation
 - C) Limit feed early lactation cows
 - D) Manage BCS during late lactation and the dry period**
131. While older cows typically peak at 40-60 days in milk (DIM), when do first-lactation cows usually peak?
- A) 105 to 115 DIM
 - B) 40-60 DIM
 - C) 50-70 DIM
 - D) 80 to 100 DIM**
132. A rule of thumb is to avoid over-crowding if 30% or more of a milking pen is what type of animal?
- A) 1st lactation cows**
 - B) Older cows (3rd lactation and greater)
 - C) Open cows
 - D) Pregnant cows
133. HVLS fans are often the choice for compost-bedded pack barns. What does HVLS stand for?
- A) High velocity, low speed**
 - B) High velocity, low stimulation
 - C) High ventilation, lasting stimulation
 - D) High volume, low speed
134. In an anerobic digester system, what does RNG stand for?
- A) Randomized natural gases
 - B) Reduced noxious gases
 - C) Regenerated normal gains
 - D) Renewable Natural Gas**
135. Cows display longer heats on what kind of footing?
- A) Dry lots**
 - B) Grooved concrete
 - C) Rubber
 - D) Slatted concrete
136. Natural ventilation works best in a facility with multiple barns if the barns are at least how far apart?
- A) 100 feet** B) 300 feet C) 500 feet D) 700 feet
137. What part of the barn should be the top priority when ensuring proper ventilation?
- A) Feed bunk B) Holding area C) Return alleys **D) Stalls**

138. Footbaths should be 10-12 feet long, 2 feet wide, and how deep?
A) **10 inches** B) 12 inches C) 4 inches D) 8 inches
139. Orient calf housing in which direction to maximize airflow?
A) **East to west**
B) It doesn't matter
C) North to south
D) Southeast to Northwest
140. Milk harvesting and milk cooling may account for what % of the total farm energy use?
A) 18%
B) 25%
C) **44%**
D) 56%
141. What is the most common micronutrient deficiency in field corn?
A) Cobalt B) Iron C) Manganese D) **Zinc**
142. What nutrient has the chemical symbol "P"?
A) Copper B) **Phosphorus** C) Potassium D) Sulfur
143. Lignin serves what purpose in the plant?
A) Carry our photosynthesis
B) Carry out respiration
C) Move water
D) **Provides strength and rigidity**
144. What is the ideal soil pH for most forage crops?
A) 11 to 13
B) 3 to 4
C) **6 to 7**
D) 9-10
145. One ton of corn silage may contain how many bushels of corn grain?
A) 12 to 15
B) 17 to 19
C) 2 to 3
D) **7 to 8**
146. If you are inter-seeding alfalfa with corn, the alfalfa should be seeded before the corn reaches what stage?
A) R1
B) V1
C) **V2**
D) V4

147. Alfalfa must dry down to at least what % moisture for hay baling?
- A) **14 to 18%**
 - B) 2 to 3%
 - C) 22 to 25%
 - D) 7 to 10%
148. Which of the following is NOT an action that many crops may take when they experience heat stress?
- A) Reduce vegetative growth
 - B) Accelerate flowering
 - C) Reduce root growth
 - D) **Accelerate transpiration**
149. Modern benchmarks for corn kernel processing scores generally include a top performance around what score?
- A) 45%
 - B) 60%
 - C) **75%**
 - D) 95%
150. Agricultural lime serves what main purpose as a fertilizer?
- A) **Elevate soil pH**
 - B) Provide nitrogen
 - C) Provide phosphorus
 - D) Provide potassium
151. Which of the following animals can be aspirated for oocytes using invitro fertilization?
- A) Prepubertal heifers
 - B) Virgin heifers
 - C) Pregnant animals
 - D) **All of the above**
152. Which bovine chromosome is larger and contains approximately 4% more DNA?
- A) They are the same
 - B) Unknown
 - C) **X chromosome**
 - D) Y chromosome
153. Administering what reproductive hormone promotes regressing of the Corpus Luteum (CL)?
- A) Follicle Stimulating Hormone (FSH)
 - B) Gonadotropin releasing hormone (GnRH)
 - C) Luteinizing hormone (LH)
 - D) **Prostaglandin (PGF)**

154. What is the term that refers to an animal having many related ancestors that were born decades ago?
- A) **Ancient inbreeding**
 - B) Inbreeding depression
 - C) Linebreeding
 - D) Recent inbreeding
155. How many units of beef semen were sold in the U.S. in 2022?
- A) 2.5 million
 - B) 4.3 million
 - C) 6.1 million
 - D) **8.7 million**
156. In breeding, what does gEFI refer to?
- A) General estimated fertility index
 - B) Generational estimated freemartin interval
 - C) Genomic expected futurity index
 - D) **Genomic future inbreeding**
157. The average occurrence of cystic ovaries within a herd is estimated to be what?
- A) **10%**
 - B) 2%
 - C) 20%
 - D) 25%
158. Liquid nitrogen in semen tanks is kept at what temperature?
- A) -100°F
 - B) -180°F
 - C) -200 °F
 - D) **-320°F**
159. A cow in anestrus may experience what?
- A) No expressed heats
 - B) Irregular heats
 - C) Abnormal reproductive cycles
 - D) **All of the above**
160. What is the ideal location for semen deposition in A.I. (artificial insemination)?
- A) Cervix
 - B) Oviduct
 - C) **Uterine body**
 - D) Uterine horn
161. What are the 2 most common minerals used in footbaths on dairy farms that are actively involved in the formation of hard keratin hooves?
- A) **Copper and Zinc**
 - B) Copper & Biotin
 - C) Zin and Iodine
 - D) Zinc and Calcium

162. Consequences of inbreeding in dairy cattle are: _____.
- A) Decreased milk production
 - B) Decreased reproductive performance
 - C) Increased calf mortality
 - D) All the above**
163. Udder edema occurs when what type of fluid is trapped in the tissues of the udder around the time of parturition (calving)?
- A) Embryonic
 - B) Lymphatic**
 - C) Hypertonic
 - D) Saline
164. What % of the cows in the U.S. are on farms with methane digesters?
- A) 20%**
 - B) 30%
 - C) 40%
 - D) 50%
165. Stephen Babcock was responsible for developing the Babcock Test in 1890 to detect what in milk?
- A) SCC
 - B) Protein
 - C) White blood cells
 - D) Milk fat content**
166. The USDA recently announced their Climate-Smart Agriculture and Forestry Partnership Initiative to fund \$1 billion in climate-smart practices from the CCC. What does CCC stand for?
- A) Climate Clean Corporation
 - B) Climate Central Committee
 - C) Climate Commodity Corporation
 - D) Commodity Credit Corporation**
167. What is the factor that influences the amount of water consumed by dairy cattle?
- A) Calving ease
 - B) Udder cleft
 - C) Water temperature**
 - D) Estrus
168. Your milk hauler has just completed picking up milk from your farm and the bulk tank is now empty. How often should the bulk tank be cleaned and disinfected?
- A) Every day
 - B) Every time it is emptied**
 - C) Twice a day
 - D) After every milking
169. The United States Department of Agriculture Census of Agriculture started in 1840 and is taken every 5 years. When did/or will the most recent census happen?
- A) 2022**
 - B) 2023
 - C) 2024
 - D) 2025
170. Which of the following factors can cause variation in conception rates on a dairy farm?
- A) Heat detection
 - B) Nutrition
 - C) Cow health
 - D) All are factors that cause variation in conception rates**

171. One of the common steps of preparing a cow to milk is fore-stripping because it helps to release oxytocin and aids in the detection of what type of mastitis?

- A) All forms of mastitis
- B) Clinical**
- C) Sub-clinical
- D) Mycoplasma

172. It is your job on the farm to mix the milk replacer to feed the calves. Temperature is a critical component of mixing it properly. How should you check to make sure it has been mixed at the proper temperature?

- A) Feel
- B) Brix-Refractometer
- C) Colostrometer
- D) Thermometer**

173. The National Animal Health Monitoring System surveyed dairy farmers to determine what the most common criteria used for weaning a calf was. The results found which of the following criteria to be most common?

- A) Weight
- B) Height
- C) Age**
- D) Outside Temperature

174. The temperature outside in which a cow can maintain her own core body temperature without having to exert any extra effort to regulate either her heat loss or heat gain is called what?

- A) Photoperiod
- B) Respiration
- C) Estrus Zone
- D) Thermoneutral zone**

175. When reading bull proofs to select the best bull to use on your dairy heifers, PTA is listed on the proof. What does the acronym PTA stand for?

- A) Probable True Ability
- B) Productive Transmitting Ability
- C) Production True Ability
- D) Predicted Transmitting Ability**

176. A DHIA milk production record may be terminated if what has happened to the cow?

- A) Dried off
- B) Sold at the sale barn as a cull cow
- C) Aborted
- D) All of the above are correct**

177. After reviewing your recent breeding history for the past month, you contact your nutritionist because you have identified the need to improve conception rates in your herd. She suggests you add what to your rations to improve conception rates because of larger ovarian follicles capable of producing more estrogen, larger corpus luteum and a decrease in embryonic loss?

- A) Fats**
- B) Carbohydrates
- C) Vitamins
- D) Minerals

178. An example of a Class I use for milk would be to make _____.
- A) Hard cheese B) Ice cream **C) Chocolate milk** D) Dried milk powder
179. If the heat detection rate is 40% and the conception rate is 20%, what is the pregnancy rate?
- A) 15% B) 20% C) 60% **D) 8%**
180. In U.S. dairy herds the number 1 reason for culling dairy cows is:
- A) Low milk production
B) Lameness
C) Mastitis
D) Reproductive failure
181. Which compartment of the ruminant stomach dehydrates partially digested feed?
- A) Reticulum **B) Omasum** C) Rumen D) Abomasum
182. Which of the following dairy breeds originated from a British Channel Island?
- A) Ayrshire B) Brown Swiss **C) Guernsey** D) Holstein
183. Gestation length in dairy cattle can vary due to which of the following factors?
- A) All of the following**
B) Breed of the cow
C) Season of the year
D) Number of calves carried
184. During a dairy farm visit with your FFA advisor, the dairy farmer asks you what might be wrong with his pre-weaned calves. He provides the following information for you from calves experiencing problems: black feces that looks like engine oil, loose stools and a few calves have died as a result. Based on these symptoms and signs, you suspect which issue to be causing the problem?
- A) Abomasal ulcers** B) Ketosis C) Displaced abomasum D) Feed refusal
185. As an A.I. representative, a dairy producer asks you to help select bulls to improve his future heifers to have the best feet and legs possible. You recommend which of the following bulls to help achieve this goal?
- A) Lionel FLC -0.24 B) Ethics FI 2.9 **C) Coffee FLC 1.25** D) Babcock REL 90
186. Treatment for digital dermatitis includes a foot wrap to keep the lesion dry and in contact with the antibiotic powder applied. The wrap should be removed within how many hours or days?
- A) 24 hours** B) 6 hours C) 2 days D) 1 week
187. Milk is what % water?
- A) 57% B) 67% C) 77% **D) 87%**
188. BioPRYN blood test is used to determine what in dairy cattle?
- A) Pregnancy** B) Nitrate toxicity C) Mastitis D) Dystocia

189. It is time to load your cows to bring them home to calve. To be successful in moving the cows you make sure to be mindful of the area where the cows do not want any foreign objects entering. This area is commonly known as?

- A) Blind spot
- B) Flight zone**
- C) Comfort zone
- D) All of the above

190. Which of the following is NOT considered a macro-mineral?

- A) Phosphorus B) Potassium C) Sodium **D) Iodine**

191. What is a more common name for erythrocytes?

- A) Red blood cells**
- B) White blood cells
- C) Leukocytes
- D) Somatic cells

192. Which of the following is the name of the organization that is charged with evaluating genetic traits of dairy cattle?

- A) World Dairy Expo
- B) Animal Improvement Programs Laboratory**
- C) Dairy Business Association
- D) Dairy Herd Improvement Association

193. What is the name of the hormone produced by the pituitary that is known as the milk formation hormone?

- A) Prolactin** B) Progesterone C) Follicle Stimulating Hormone D) Oxytocin

194. The following information is listed concerning a cow:

365 **3X** **44,828** **3.8** **1703** **3.0** **1344**

Which of the following is NOT correct?

- A) 365 day lactation
- B) Milked 2 times per day**
- C) Milk contained 3.8% milk fat
- D) Milk contained 3.0% protein

195. What reproductive hormone tends to be high in lactating, pregnant cows?

- A) Oxytocin **B) Progesterone** C) Prostaglandin D) Relaxin

196. If the MUN level is considered high, which nutrient is likely to be in excess?

- A) Fats B) Carbohydrates C) Vitamins **D) Protein**

197. What metabolic disorder is caused by a deficiency of blood calcium related to an imbalance of calcium, phosphorus, and Vitamin D?

- A) Parturient paresis** B) Ketosis C) Grass Tetany D) Fatty Liver

198. Name a system or part of the human body that can be adversely affected by a lactose intolerance reaction:

- A) All the following** B) Skin C) Respiratory D) Gastrointestinal systems

199. Which condition is a result of the fetal membranes remaining within the uterus for an extended period of time after calving?

- A) Retained placenta**
B) Involution
C) Separation of tissues
D) Metritis

200. What is considered the universal standard criteria for breeding dairy heifers?

- A) Body weight** B) Age C) Height at the withers D) Rump width

