

1. **What is an anion?**
 - A A positively charged ion
 - B A positively charged electron
 - C A negatively charged electron
 - *D A negatively charged ion**

2. **Which one of the following is the largest dairy milk marketing cooperative in the U.S.?**
 - A California Dairies
 - B Maryland and Virginia Milk Producers
 - C Land O'Lakes
 - *D Dairy Farmers of America (DFA)**

3. **Hairy Heel Wart is scientifically known as what?**
 - A Intraheel laminitis
 - B Digital phlegmon
 - C Digital Divide
 - *D Digital Dermatitis**

4. **New computerized robotic milk stations are becoming a reality today. They have different names but one common one is MOD system. MOD means:**
 - *A Milk on Demand**
 - B Money on Deposit
 - C Magnificent Overall Design
 - D Move on Down

5. **On average, how many weeks after freshening does a cow's dry matter intake peak?**
 - *A 12-14 weeks**
 - B 1-2 weeks
 - C 2-4 weeks
 - D 40-42 weeks

6. **All milking equipment must be sanitized:**
 - *A After each use**
 - B Monthly
 - C Daily
 - D Weekly

7. **Why is fat added to dairy rations?**
 - *A To add a concentrated form of energy**
 - B To increase the volatile fatty acid level
 - C To help fight BVD
 - D To increase milk fat %

8. **The annual sale of dairy semen exceeds _____ straws.**
 - *A 20,000,000**
 - B 500,000
 - C 1,000,000
 - D 10,000,000

9. What is the average production lifetime of a dairy cow?
A 6 months
B 10 years
***C 3 years**
D 20 years
10. A cow's gestation period is _____ long?
A 114 days
***B 282 days**
C 365 days
D 1 day
11. When can a heifer calf born twin to a bull be registered?
***A When it is proven that she will breed**
B As soon as she is born
C When she is 6 months old
D As soon as she is weaned
12. The letters FSIS stand for what?
A Food Service and Inspection Safety
B Food Sanitation and Inquiry Service
C Free State Inspection Service
***D Food Safety and Inspection Service**
13. In a sire's proof, daughters' calving ease measures _____ .
A A bull's tendency to sire calves that are born easily
B The calving ease of the first calf heifers from the sire
C The cow's calving ease
***D The influence of the sire of the cow on calving ease**
14. 98% of somatic cells are:
A Lymph nodes
***B Leukocytes**
C Plasma
D Red blood cells
15. Corn silage stored in sealed upright silos should be ensiled at what moisture?
***A No less than 60 percent moisture**
B No less than 50 percent moisture
C No less than 40 percent moisture
D No less than 30 percent moisture
16. Which mineral functions in maintaining osmotic pressure, acid-base balance, and body fluid balance?
A Selenium
B Zinc
***C Sodium**
D Sulfur

17. A disease transmitted through natural mating which causes abortion, low conception rates, and irregular heat cycles is _____ .
- *A **Vibriosis**
 - B Milk fever
 - C Hardware disease
 - D Black leg
18. *Coccidia* infection can occur when calves are 4 to 8 weeks old. *Coccidia* causes:
- A Pneumonia
 - *B **Enteritis**
 - C BVD
 - D IBR
19. In the standard protocol for cleaning milking equipment, which of the following is not one of the four phases of cleaning?
- A Chlorinated alkaline wash
 - B Acid rinse
 - C Pre-rinse
 - *D **Back flushing**
20. When evaluating a dairy ration, what do the letters TDN stand for?
- A Total Dietary Nitrogen
 - *B **Total Digestible Nutrients**
 - C Total Dietary Needs
 - D Tested Digestible Nutrients
21. Most dairies in Texas are considered to be CAFO's. A CAFO is:
- A Confined Animal Feeding Operation
 - B Concentrated Animal Farming Operation
 - C Confined Animal Farming Operation
 - *D **Concentrated Animal Feeding Operation**
22. Abortion in the last trimester of pregnancy is often caused by _____ .
- *A **Brucellosis**
 - B Bovine virus diarrhea
 - C Hardware disease
 - D Milk fever
23. Dairy herds have historically used artificial insemination. Currently approximately _____ % of all dairy pregnancies results from A.I.
- *A **85**
 - B 10
 - C 95
 - D 50
24. If you add sugar to a milk product, you must _____ the minimum pasteurization temperature by _____ °F.
- A Decrease, 5
 - B Decrease, 10
 - *C **Increase, 5**
 - D Increase, 10
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25. **Cows produce pheromones which:**
A Prevent pregnancy
***B Attract the opposite sex**
C Ward off infections
D Increase levels of milk production
26. **Dairy producers are particularly watchful for zoonotic diseases in their herd. Zoonotic diseases are defined as those that:**
A Have no known cures and as such, are especially feared
***B Pass from animals to humans and vice versa**
C Pass from animal to animal of the same species
D Pass from animal to animal among different species
27. **When using sexed semen, conception rates are _____ percent of the conception rates achieved when using unsexed semen under the same conditions?**
***A 50-80%**
B 15-40%
C 90-95%
D 10% or less
28. **Jersey cattle are characterized by having a _____ face:**
***A Dished face**
B Mottled face
C Long face
D Masculine face
29. **Which trait is worth the most points according to the Dairy Cow Unified Score Card?**
***A Udder**
B Frame
C Body capacity
D Dairy character
30. **In the reproductive tract of a dairy cow, how many uterine horns are there?**
A One
***B Two**
C None
D Three
31. **What is the scientific term for birth?**
A Dystocia
***B Parturition**
C Calving
D Delivery
32. **Crude fiber in a dietary ration must be at least _____ % or milk fat percent will decrease.**
A 5
***B 18**
C 12
D 8

33. Which system of the cow's body is most affected by paratuberculosis?
A Circulatory
***B Digestive**
C Reproductive
D Respiratory
34. Dairy cows produce milk that is relatively high in B complex vitamins. Because they are ruminants:
A Vitamin A will be converted to the Vitamin B complex in the rumen
B Vitamin D will be converted into the Vitamin B complex in the rumen
***C It is not necessary to supplement the intake of Vitamin B complex**
D It is necessary to supplement the intake of Vitamin B complex
35. How many grams of lactose are in an 8 oz. glass of milk?
***A 10**
B 25
C 21
D 17
36. How many chromosomes does the nucleus of each reproductive cell have in dairy cattle?
A 32
***B 30**
C 15
D 24
37. What percent moisture should corn silage be chopped at when stored in horizontal bunker silos?
A 90 percent moisture
B 50 percent moisture
C 30 percent moisture
***D 70 percent moisture**
38. What is the largest cost on most U.S. dairy farms?
A Veterinary fees
B Fuel
C Labor
***D Feed**
39. What hormone is responsible for maintaining pregnancy?
A Oxytocin
***B Progesterone**
C Lutalyse
D Prostaglandin
40. What pathway in young calves directs milk into the abomasum, bypassing the rumen, reticulum, and omasum?
A Masticulas passinomis
B Rumen bypass groove
***C Esophageal groove**
D Rumen passinomis

41. What mineral is necessary for hemoglobin formation?
A Selenium
***B Copper**
C Iodine
D Zinc
42. Fear can disrupt milk letdown in a cow. The hormone released that causes this disruption is:
A Oxytocin
***B Epinephrine**
C Progesterone
D Prostaglandin
43. Recent research traits have shown that dairy cows prefer to be milked _____ times/day if they are able to choose.
A One
B Two
***C Four or more times**
D Three times
44. Dairy cattle frequently develop milk fever shortly after calving. They become immobile, comatose, and may die without treatment. The treatment typically involves:
***A Intravenous injection of calcium gluconate**
B Using a stomach pump to administer adequate water to keep them hydrated
C Adding additional salt to their feed to supply extra calcium and phosphorus
D Injection of Vitamin B-12
45. Dairy Farmers frequently place a stomach magnet into their cows to:
***A Prevent ingested metal objects from interfering with the digestive tract or the respiratory system**
B Improve the absorption of iron when the cows are drinking soft water
C Prevent arthritis from settling in the hock and knee joints
D Help improve the mineral content of the milk
46. What is a cation?
A A positively charged electron
B A negatively charged ion
C A negatively charged electron
***D A positively charged ion**
47. Adequate consumption of long fiber roughage is important to both milk production and herd health. A long fiber roughage is one that is:
A Longer than 6 inches
***B Longer than 1.5 inches**
C Less than 1 inch long
D Longer than 12 inches
48. One ejaculation from a bull typically contains _____ sperm
A 1,000,000
B 500,000
C 50,000,000
***D 5,000,000**

49. When looking at DHI records, what do the letters RHA stand for?
*A Rolling Herd Average
B Regional Holstein Associations
C Registered Herd Ancestry
D Registered Holstein Ancestry
50. Which of the following is a compartment of the dairy cow's stomach?
A Duodenum
B Jejunum
C Ileum
*D Abomasum
51. What state agency regulates waste management?
*A Texas Commission on Environmental Quality
B Texas Health Commission
C Texas Animal Health Commission
D Environmental Preservation Agency
52. A dairy cow that has her feet too far forward (under her belly) is said to be:
A Cow hocked
B Splay footed
*C Sickle hocked
D Post legged
53. A very popular dairy management software in Texas is:
A Dairyhelp4U
B Dairy Power vs. 2
*C Dairy Comp 305
D Basic Dairy 101
54. What percent of crude protein should a calf starter be?
A 10-12
B 6-8
*C 16-18
D 22-24
55. Milk traits, i.e. fat, protein, SNF and etc., tend to have a heritability of about:
*A 20-30%
B 51% or more
C 10% or less
D 40-50%
56. Research has shown that by formulating lactating cow rations with proper amounts of certain amino acids, we can decrease the crude protein content of the ration and reduce _____ ?
A Bloat
B Phosphorus
*C Nitrogen excretion
D Acidosis

57. How much more energy do fats contain per unit than carbohydrates and proteins?
A 3
B 3.25
C 2
*D 2.25
58. Which cows have higher protein requirements?
A Low-producing pregnant cows
B High-producing open cows
C Low-producing open cows
*D High-producing pregnant cows
59. About 90% of U.S. dairies use a _____ milking schedule.
A Milk on Demand
*B Twice/day
C Three times/day
D Once/day
60. What does NFO stand for?
A National Farmers Order
B National Feed Organization
*C National Farmers Organization
D National Food Organization
61. Regarding feed formulation, what does CAD stand for?
*A Cation-Anion Difference
B Carbohydrate- Amino Degradation
C Cation-Amonia Difference
D Cation-Anion Degree
62. Nutritionists have developed a test to compare one alfalfa sample to another, determining the RFV of each. RFV stands for:
A Regulative Free Velocity
B Risk for Value
C Real Food Value
*D Relative Forage Value
63. An average Holstein cow should give _____ pounds per day for each lactation.
A 8.5
*B 50
C 400
D 165
64. The hormone BST is given to dairy cows:
*A After 200 days of lactation
B Right before the dry period
C In the first 45 days of lactation
D 100-199 days after calving

65. In reference to reproduction, what does CL stand for?
A Compound Lepto
***B Corpus Luteum**
C Cattle Lutalysis
D Cervix Lymphocyte
66. What trait with the only positive genetic correlation to milk production?
A Udder
***B Dairy character**
C Body capacity
D Feet and legs
67. The hormone _____ stimulates milk let down and may be administered via injection, when necessary after parturition.
A Estrogen
***B Oxytocin**
C Progesterone
D BovaTec
68. When evaluating dairy rations what do the letters NE stand for?
A Net Equivalence
B Non Essential
C Non Edible
***D Net Energy**
69. What type of mastitis is the easiest to cure?
A Paratuberliocsis
B Staph Aureus
C Coliforms
***D Streptococcus agalactae**
70. Fermented forage plants relates to:
***A Silage**
B Flash grazing
C Strip grazing
D Hay
71. Feeding proper rations during the summer is important for both cow comfort and maintaining milk production. Which nutrient is most important during the summer months?
***A Water**
B Protein
C Fat
D Vitamins
72. Approximately how many gallons of blood pass through the udder for each gallon of milk produced?
A 100-200 gallons
B 200-300 gallons
***C 400-500 gallons**
D 300-400 gallons

73. **Allelomimetic behavior is defined as:**
A The tendency for animals to separate from the herd
B The tendency for animals to produce young with the characteristics of their parents
***C The tendency for a group of animals to do the same thing at the same time**
D The tendency for animals to flee
74. **In a cow, where would you find an alveolus?**
A Skin
B Intestine
C Brain
***D Udder**
75. **What is NAFTA?**
A North American Free Trade Association
***B North American Free Trade Agreement**
C North African Free Trade Association
D North American Forage Trade Association
76. **Which hormone produced by the uterus causes regression of the corpus luteum?**
A FSH
B LH
***C PGF**
D GnRH
77. **Many dairymen “dock” the tail on their cows much to the chagrin of Animals Rights groups. They believe this is necessary to:**
A Prevent the accidental, early detachment of the milking unit
B Insure the milking unit can be properly attached
C Avoid injury to their milk hands
***D Reduce the incidence of mastitis**
78. **Which of the compartments of a cow's four-compartment stomach acts as the true stomach?**
A Reticulum
B Omasum
***C Abomasum**
D Rumen
79. **Which part of an animal touches the ground if he/she is walking on a correct set of feet and legs?**
A Dewclaw
B Pastern
***C Sole**
D Knee
80. **How much water can a lactating cow consume in one day?**
A 15 gallons
B 5 gallons
***C 25 gallons**
D 35 gallons

81. **What stomach compartments are not developed in a newborn calf?**
*A **Rumen and reticulum**
B Abomasum and omasum
C Rumen and omasum
D Abomasum and rumen
82. **A dairy cow may not reach her highest milk yield until she is:**
A 4-5 years old
*B **5-9 years old**
C 3-4 years old
D Over 10 years old
83. **What are two methods for shortening udder hair?**
A Electrolysis and waxing
B Singeing and waxing
C Clipping and straight razor shaving
*D **Clipping and singeing**
84. **What is another term for the lowest lateral regions of the abdomen, near the groin?**
*A **Inguinal**
B Gubernaculum
C Abomasum
D Dorsal
85. **The only aspect of milk quality that can be completely controlled on the farm is _____ .**
A Milk flavor
B Bacteria counts
*C **Drug residue**
D Milk protein
86. **A perfect score for a cow according to the Dairy Cow Unified Score Card is:**
*A **100**
B 50
C 1000
D 500
87. **In a study of milk parlors conducted by researchers at the University of Florida, how did parallels perform when compared to herringbones?**
*A **Parallels out performed herringbones by nearly 8 percent**
B Herringbones out performed parallels by nearly 8 percent
C Parallels were 50% slower
D They performed the same
88. **Which reproductive condition results when the fetal membranes remain within the uterus for an extended period following parturition?**
*A **Retained placenta**
B Ruptured follicle
C Prolapsed uterus
D Retained ovum

89. When a cow comes into heat every few days, she is referred to as?
A Gestation
B Anestrus
C Lactation
***D Cystic**
90. Young dairy calves frequently suffer and may die due to scours. The chief cause of deadly scours at this age is:
***A The bacteria Escherichia Coli**
B Excessive colostrum intake
C Excessive intake of milk replacer
D Internal parasites, primarily the roundworm
91. Milk sugars are not very soluble. Some people have difficulty hydrolyzing them in their bodies. This problem is called _____ .
A Lactose irritability
***B Lactose intolerance**
C Lactose indigestibility
D Lactose adjustment
92. Where are non-degradable proteins absorbed?
A Large intestine
***B Small Intestine**
C Rumen
D Liver
93. When feeding close-up cows a calcium deficient diet, which gland is stimulated?
A Mammary gland
B Pituitary Gland
***C Parathyroid gland**
D Hypothalamus Gland
94. Which of the following is the most popular type of cheese in the United States?
A Swiss
***B Cheddar**
C Mozzarella
D Colby
95. What do the letters NRC stand for?
A National Research Chapter
B National Research Center
***C National Research Council**
D National Research Company
96. A Milking herd's TMR should be available to cows how many hours throughout the day?
A 5 to 9
B 10 to 12
C 15 to 18
***D 20 to 24**

97. Each animal inherits certain genes from both parents. What percentage of genes does a calf receive from its sire?
- *A 50 percent
 - B 75 percent
 - C 25 percent
 - D 85 percent
98. When does the greatest mammary tissue growth occur during a cow's life?
- *A During the first pregnancy
 - B At puberty
 - C Before she is born
 - D During the second pregnancy
99. Which one of the following describes biotin?
- A A source of energy
 - B A trace mineral
 - C An amino acid
 - *D A B-Vitamin
100. A bovine female which has not had a calf is a:
- A Filly
 - B Pullet
 - C Gilt
 - *D Heifer
101. Milk let down in a dairy cow may be stimulated by:
- *A Feeding the cow
 - B Electric shock applied to the cow
 - C Hollering at the cow
 - D Stressing the cow
102. The typical lactation curve shows a dairy cow reaching her peak production about _____ days into the lactation cycle.
- A 5-10 days
 - *B 50-70 days
 - C 20-30 days
 - D 120-180 days
103. Milking time is best reduced by:
- *A Preparing cows properly
 - B Decreasing vacuum
 - C Speeding up pulsators
 - D Increasing vacuum
104. This bacteria causes "Circling Disease" in cattle:
- A Salmonella
 - B Leucosis
 - C Mycoplasma
 - *D Listeria

105. Dry cows need 0.8 percent K in their diet. What element is K?
A Calcium
***B Potassium**
C Phosphorus
D Lead
106. Rotary Parlors or Carousel milk barns have the advantage of being _____ when compared to other type barns.
A Safer
B More Versatile
***C Faster**
D Cheaper
107. When the environmental temperature falls below 30°F, the normal diet of a young calf should be supplemented with _____ ?
A Warm Fresh Milk
B Protein
***C Energy**
D Vitamin A
108. Which body part is located more towards the front of the animal?
A Stifle
***B Flank**
C Tail head
D Switch
109. Legally you cannot make cottage cheese from raw milk, but you can make _____ from raw milk.
A Ice cream
***B Cheddar cheese**
C Sour cream
D Yogurt
110. What percentage of whole milk is fat when compared on a dry matter basis?
A Exactly 100 percent
B About 50 percent
C About 10 percent
***D About 25 percent**
111. Dairy cattle have a _____ field of vision to their front.
A 180-270 degree
B Less than 90 degree
C 90-180 degree
***D 300 + degree**
112. What is the name of the term for a farm's unique identification number that is part of the National Animal Identification System?
***A Premis ID**
B RFID
C Zip Code
D Registration ID

113. Milk with over _____ somatic cell count cannot legally be shipped in the United States?
A 500,000
B 200,000
C 750,000
***D 400,000**
114. What is the USDA's AIPL?
A Animal Improvement Program Library
B Animal Import Processing Language
***C Animal Improvement Program Lab**
D Animal Import Program Liability
115. When referring to milk test used at the processing plant, what is a DMC?
A Direct Micro Compatibility
B Direct Measurement Control
***C Direct Microscopic Counts**
D Direct Microscopic Cells
116. Dairy cattle were first successfully cloned in the _____ .
A 1980's
***B 2000's**
C 1880's
D 1950's
117. What is the FAS?
A Final Agriculture Service
B Food and Agriculture Service
***C Foreign Agricultural Service**
D Finland Agriculture Service
118. What is the USAHA?
A U S Animal Health Award
B U S Animal Housing Association
***C U S Animal Health Association**
D U S Agricultural Health Administrator
119. A calf's birth weight is approximately _____ % of its' mature weight.
A 10
***B 5**
C 1
D 20
120. What does GnRH stand for?
A Genotype Reflection Hormone
B Genuine Recessive Hormone
C Gestation Repression Hormone
***D Gonadotropin Releasing Hormone**

121. What is the reasonable score for body condition at mid-lactation?
A 2
***B 3**
C 1
D 4.5
122. A mutation where a calf is born with a single toe on one or more feet is called
A Cloven-hoof
B Single-foot
***C Mule-foot**
D Ungulate Toe
123. The condition in which the cow is giving more milk than nutrients that she is consuming in feed is called:
A Positive net energy balance
B Over Milked
***C Negative net energy balance**
D More milk than feed
124. All U.S. dairy farms are inspected by state inspectors through a program coordinated by the Food and Drug Administration. Inspectors follow a publication called the PMO. What does PMO stand for?
A Post-Milking Options
***B Pasteurized milk ordinance**
C Primary Milking Operations
D Pre-milking Options
125. Cow comfort has been linked to milk production in numerous research studies. Which of the following is NOT an example of a way to improve cow comfort used by dairymen:
A Providing air mattresses for the cows to lay on
B Reducing air flow through the barn during cool weather
C Providing wading pools allowing them to cool off during hot weather
***D Allowing them access to their new born calf for the 1st 30 days**
126. What does the term freshen mean in relation to dairy production?
***A To give birth**
B To stop producing milk
C Exhibits signs of extreme agitation or freshness
D To become pregnant
127. Reduced gestation length and retained placenta typically are the first symptoms of _____ vitamin deficiency
A Vitamin K
B Vitamin B
C Vitamin D
***D Vitamin A**

128. How is a dairy's RHA calculated?
- *A By dividing the total amount of milk produced in the past 365 days by the total number of cow years in the herd last year.
 - B By dividing the total amount of milk produced in the past 365 days by the total number of cow years in the herd this year.
 - C By adding the total amount of milk produced in the past 365 days to the total number of cow years in the herd last year.
 - D By multiplying the total amount of milk produced in the past 365 days by total number cow years in the herd this year.
129. What do the letters EU stands for?
- A Eastern Union
 - B Eastern Understanding
 - *C European Union
 - D European Underline
130. A mutation where calves have little or no control over the movement of their legs is called
- *A Limber leg
 - B Bovine leukocyte adhesion deficiency
 - C Mule-foot
 - D Weaver syndrome
131. A free martin is considered a
- *A Sterile heifer born twin to a bull
 - B Sterile bull born twin to a heifer
 - C Cow that has just weaned a calf
 - D Virgin heifer that has not yet been bred
132. What structural carbohydrate component makes older plants less digestible than younger plants?
- A Fructose
 - *B Lignin
 - C Sucrose
 - D Cellulose
133. What is the accepted standard length for a lactation record in dairy cattle?
- A 200 days
 - B 365 days
 - *C 305 days
 - D 100 days
134. If the heat detection rate is 30% and the conception rate is 30%, what is the pregnancy rate?
- *A 9%
 - B 60%
 - C 30%
 - D 15%
135. The first feeding of colostrum should equal about _____ percent of the calf's body weight?
- A 2
 - B 1
 - C 10
 - *D 5

136. The source of rennet (a substance used in cheese making) is:
A A tropical plant
B Insect Larvae
***C The abomasum of a milk fed calf**
D Sugar beets
137. To dairymen, the most harmful disease impacting milk production and their economic bottom line is:
A BUV
B BSE
***C Mastitis**
D Vibriosis
138. On the PDCA Unified Dairy Score Card, the category “feet and legs” accounts for how many points?
A 30
B 15
C 10
***D 20**
139. What kinds of relationship do cattle and the microorganisms in their rumen share?
A Parasitic
***B Symbiotic**
C Electrostatic
D A-Biotic
140. The rear quarters produce _____ % of the daily milk yield.
A 20%
B 80%
***C 60%**
D 40%
141. Which mineral is found in high concentrations in soft tissues such as the pancreas, liver, and kidney?
A Sulfur
***B Zinc**
C Selenium
D Sodium
142. What is the hormone that causes Uterine contractions to assist in parturition?
***A Oxytocin**
B Progesterone
C Prostaglandin
D Estrogen
143. The CWT programs stands for Cooperatives Working Together. Which of the following describes the function of this program?
A A state-wide program that addresses the cost of dairy feeds
***B A national dairy farmer-funded program that is used to help stabilize milk prices**
C The world-wide cooperative network for agricultural products
D An international program used to market whey proteins

144. The portion of the ruminant digestive system which is known as and functions as the “true” stomach is the:
- A Reticulum
 - *B Abomasum**
 - C Proventriculus
 - D Omasum
145. Almost 95% of the dairy cows in the U.S. are:
- A Brown Swiss
 - *B Holstein**
 - C Angus
 - D Jersey
146. What do the letters IDFA stand for?
- A International Dairy Farmers Association
 - *B International Dairy Foods Association**
 - C International Dairy Food Act
 - D International Dairy Finance Administrators
147. The rumen of a cow is located:
- A Along the top of an animal
 - B Right side of the body
 - *C Left side of the body**
 - D Rear of the animal
148. The hooks and pins on an animal relate most closely to the:
- *A Rump**
 - B Thigh
 - C Feet and legs
 - D Udder
149. Texas dairies normally must be permitted by the _____ before they begin operations.
- *A Texas Commission on Environmental Quality**
 - B Dairy Herd Improvement Association
 - C Texas Farm Bureau
 - D Environmental Protection Agency
150. Endocrinology is the science dealing with _____ .
- A Carbohydrates
 - B The lymphatic system
 - *C Hormones**
 - D Lipids
151. The rumen of a mature cow will hold approximately:
- A 10 gallons
 - B 20 gallons
 - C 5 gallons
 - *D 40 gallons**

152. What bacterium causes Johne's disease in cattle?
A Johne's Virus
B E-Coli.
***C Mycobacterium Paratuberculosis**
D Colostridium
153. Dairy rations, especially those for high producing cows, may be buffered to maintain a desirable rumen pH. The most common buffering agent for this is:
A Calcium
***B Sodium Bicarbonate**
C Magnesium
D Sulfates
154. When is the best time to feed anionic salts to dairy cows?
A The day before calving
***B Two weeks prior to calving**
C While the cow is calving
D Immediately after calving
155. A rolling herd average (RHA) is based on how many months?
A Twenty four
***B Twelve**
C Lifetime of the cow
D One
156. What does BVD stand for?
A Bovine Viral Disease
***B Bovine Viral Diarrhea**
C Bovine Viral Defecation
D Bovine Viral Distress
157. If a dairy bull has been genetically tested to determine his genomic make-up, this will be indicated on his pedigree by what letters?
A GTTPI
***B GTPI**
C TPI-G
D DNA-TPI
158. The portion of the milker unit that first receives the milk as it is withdrawn from the cow is the:
A Receiver jar
B Low line
***C Claw**
D Milk meter
159. What is a TMR to a dairy person?
A Texas Milk Requirement
B Typical Managed Ration
***C Total Mixed Ration**
D Time Management Recommendation

160. Which of the following is an infectious disease?
*A Ringworm
B Milk fever
C Hardware disease
D Bloat
161. Which one of the following is NOT classified as a water soluble-vitamin?
A Niacin
*B Vitamin A
C Biotin
D Folic acid
162. What are the four composite indexes calculated by the Holstein Association?
A Udder, feet and legs, body color, & dairy character
*B Udder, feet and legs, body form, & dairy character
C Teats, feet and legs, body form, & dairy character
D Udder, feet and legs, body form, & dairy quality
163. According to the American Veterinary Medicine Association, the preferred method of dehorning young calves is _____ .
A Cauterizing veins
B Gouging
*C Disbudding
D Caustic paste
164. Which part of the digestive tract is responsible for absorbing excess water?
A Small intestines
B Omasum
*C Large intestines
D Rumen
165. When sanitizing milking equipment with water, the temperature must be a minimum of 170 degrees F and the utensils are to be under the flow of water for _____ minute(s).
*A 5
B 10
C 1
D 15
166. What do nonstructural carbohydrates consist of?
A Proteins, Acids, and Alkalis
B Plant sugars, Lactic Acid, and Potassium
C Plant proteins, Pectin, and Sugar
*D Plant starch, Pectin, and Sugar
167. Which one of the following is the name of the part of the cow's back that lies between the withers and the loin?
A Thurl
B Poll
*C Chine
D Rump

168. The top most part of a cow's head is called the:
- A Pin
 - B Knoll
 - *C Poll**
 - D Hook
169. Alfalfa is an example of _____ in a dairy ration.
- *A Roughage**
 - B Probiotic
 - C Concentrate
 - D Energy Supplement
170. One of the highest heritability traits for milk is:
- A Volume
 - B Milking Rate
 - C Total solids
 - *D % Protein**
171. Many dairies place bands on their cows necks or feet, with black boxes containing electronic I.D. , production, and management information. These units are called:
- A Black boxes
 - B I boxes
 - C Foot drives
 - *D Transponders**
172. Which dairy breed's milk is golden-yellow in color?
- A Ayrshire
 - B Jersey
 - C Milking shorthorn
 - *D Guernsey**
173. What is Milk Fever paresis caused by?
- *A Low blood levels of ionized calcium**
 - B Low blood levels of ionized sodium
 - C Low blood levels of ionized zinc
 - D Low blood levels of ionized vitamin-D
174. Name the three common places Coliforms are found.
- A Laboratories, hospitals, and offices
 - B Mud, water, and blood
 - *C Mud, water, and manure**
 - D Milk, mucus, and water
175. Fresh milk, at a dairy, is required to be cooled to a minimum of 50 degrees F within 4 hours time after milking. However many larger dairies are using a _____ to accomplish this within minutes.
- *A Plate chiller**
 - B Refrigeration unit
 - C Dry ice
 - D Tanker truck

176. What describes the fraction of the ration proteins, which is broken down by digestive enzymes and utilized by rumen bacteria?
- A % Water Dissolvable Protein
 - B % Total Digestible Protein
 - C % Bacterial Protein
 - *D % Degradable proteins**
177. What are structural carbohydrates made of?
- A Lignin, sucrose, and cellulose
 - B Cellulose, hemicellulose, lactose
 - C Cellulose, fructose, and saccharin
 - *D Cellulose, hemicellulose, and lignin**
178. Protein is a combination of amino acids. The amino acids are unique among compounds involved in nutrition because they contain what element?
- A Phosphorous
 - *B Nitrogen**
 - C Copper
 - D Calcium
179. Generally, high-producing Holsteins eat _____ pounds of dry matter per day?
- A 25-30
 - B 75-100
 - *C 45-55**
 - D 10-20
180. Normal presentation of a calf for parturition will have:
- A Hind legs towards rear of the cow with head and front legs facing down
 - B One front leg towards rear of the cow along side head, other front leg down
 - C Buttocks of the calf toward rear of the cow with all 4 legs and head facing down
 - *D Front feet toward rear of the cow with head, nose first, between them**
181. What is the CCC?
- *A Commodity Credit Corporation**
 - B Caring Cats Corporation
 - C Crazy Cow Corporation
 - D Cow Chemistry Center
182. How many days after parturition should you wait before breeding a cow back?
- A 10 days
 - *B 60 days**
 - C 365 days
 - D 120 days
183. Cheddar cheese accounts for _____ % of American type cheeses made in the U.S.
- A 65
 - *B 80**
 - C 72
 - D 78

184. How often will HACCP inspect each Dairy Farm?
A A minimum of once each month
B A minimum of once each year
***C A minimum of every 6 months**
D A minimum of every 2 years
185. What are ways to avoid milk fever in cows?
A Fasting dry cows two weeks before calving
***B Both feeding low--potassium hay and/or silage to dry cows AND adding anionic salts to the dry cow ration**
C Feeding low-potassium hay and/or silage to dry cows
D Adding anionic salts to the dry cow ration
186. Which of the following is not a commonly used estrus synchronization program for dairy cattle?
***A Post-synch**
B Pre-synch
C CIDR
D Heat-synch
187. Which dairy breed has a restriction for disallowing black markings?
A Ayrshire
B Guernsey
***C Milking Shorthorn**
D Jersey
188. Dairy Management Inc. introduced the _____ social media program for dairy advocates?
A Dairy farming today
B Dairy goddess
***C myDairy**
D Facebook
189. What manure waste management puts solids in a bin and lets it degrade?
A Slurry
B Solid
C Lagoon
***D Composting**
190. Limber leg is found most often in the _____ dairy breed?
***A Jersey**
B Guernsey
C Brown Swiss
D Holstein
191. The most common pathogen found in raw milk is:
***A Escherichia coli**
B Campylobacter
C Salmonella
D Cryptosporidia

192. The number one reason for culling in U.S. dairy herds is:
*A Reproductive failure
B Mastitis
C Lameness
D Age
193. What numerical value does a Holstein cow get when given the classification good?
*A 75-79.9
B <70
C 90-100
D 85-89.9
194. The breed of dairy cow generally credited with producing the highest % of both milk fat and protein is the:
*A Jersey
B Brown Swiss
C Holstein
D Aryshire
195. %DBH stands for what?
A Percentage of Dead Born Heifers
B Percentage of Dead Breathing Heifers
C Percentage of Difficulty Breeding in Heifers
*D Percentage of Difficult Births in Heifers
196. What is the BFP?
A Butter Fat Price
*B Basic Formula Price
C Basic Foundation Price
D Basic Formula Preparation
197. The dairy breed which produces the highest volume of milk is the:
A Aryshire
*B Holstein
C Brown Swiss
D Milking Shorthorn
198. What acid is formed when nonstructural carbohydrates are digested in the rumen?
A Citric acid
B Propyl-hydro chloride
C Lactic acid
*D Propionic acid
199. Which of the following diseases is not caused by a virus?
A Warts
B BVD
*C Laminitis
D Cow pox

200. When referring to vaccinations, what do the letters MLV stand for?
A Modified Limited Vaccine
B Model Linked Viruses
***C Modified Live Virus**
D Milk Line Vaccination
201. "Weaver Syndrome" is most often found in the _____ dairy breed?
A Jersey
B Holstein
C Guernsey
***D Brown Swiss**
202. What are the two types of ovarian cysts?
***A follicular and luteal**
B ovum and luteal
C follicular and ovum
D follicular and horn
203. What ration ingredients contain the highest concentration of energy?
A Minerals
B Sugars
***C Fats**
D Carbohydrates
204. Neospora caninum is a major cause of what in pregnant cows?
***A Abortion**
B Parturition
C Chronic diarrhea
D Nutrition deficiency
205. Grass Tetany may occur in early lactation cows grazing lush, heavily, fertilized pastures. Grass Tetany is caused by a _____ deficiency.
A Thiamine
***B Magnesium**
C Vitamin E
D Calcium
206. The circulatory system of a dairy cow is very important to milk production. A dairy cow must circulate about _____ blood for each pound of milk produced.
***A 400 pounds**
B 200 pounds
C 8 pounds
D 50 pounds
207. In regards to dairy production RHA refers to:
***A Rolling Herd Average**
B Reckless Herdsman Attitude
C Registered Herd Ancestry
D Rollover Her Amplitude

208. **A dairyman may milk in a rapid exit barn. This simply means that:**
- A The barn has NO sidewalls and this allows all the cows access to the outside immediately upon release
 - B The barn was constructed with adequate exits to facilitate safe removal of all cows in the event of a fire
 - *C The cows leave the milkers via an alley wide enough to allow 2 or more cows side by side**
 - D The barn has NO individual milking stalls but has long hoses allowing the milkers to be placed on the cow wherever she is standing in the barn
209. **Lactation is unique to _____ .**
- A Insects
 - *B Mammals**
 - C Crustaceans
 - D Reptiles
210. **What is the classification for a Holstein cow given the numerical value of less than 70?**
- A Good plus
 - B Good
 - C Fair
 - *D Poor**
211. **When doing classification scoring, a cow given the numerical value of 85-89.9 is classified as:**
- *A Very good**
 - B Poor
 - C Fair
 - D Excellent
212. **When compared to normal corn silage, brown mid-rib corn silage has more energy and high digestibility. This is due largely to its lower content of _____ .**
- A Fat
 - *B Lignin**
 - C Starch
 - D Potassium
213. **What should the pH of a “close up” Holstein’s urine be?**
- A Between 2.0 and 3.0
 - B Between 1.0 and 2.0
 - *C Between 6.0 and 6.5**
 - D Between 11.0 and 12.0
214. **HTST is a _____**
- A Genetic Marker in Holstein Cattle
 - B Milking parlor design
 - C Breed of dairy cow
 - *D Pasteurizing system**
215. **Pest Predators will travel up to _____ yards to find their food source (fly pupae).**
- *A 80**
 - B 40
 - C 60
 - D 50

216. Cows that are at risk of developing ketosis can be fed what vitamin to help prevent ketosis?
A Vitamin-C
B Zinc
***C Niacin**
D B-complex
217. The two U.S. dairy breeds that originated in the Channel Islands off the coast of France are:
A Jersey and Holstein
***B Guernsey and Jersey**
C Ayrshire and Milking Shorthorn
D Milking Shorthorn and Guernsey
218. High potassium intake will decrease a cows ability to mobilize what?
A Bone phosphorus
***B Bone calcium**
C Immunoglobulins
D Lymphocytes
219. At what isoelectric point (point at which proteins have net zero charge) do caseins precipitate?
A pH 8.1
***B pH 4.6**
C pH 5.2
D pH 7.5
220. Dairy heifers need to be bred at _____ of age assuming they are at least 65% of their adult weight at that time.
A 12 months
B 18 months
C 6 months
***D 15 months**
221. A switch on a cow is:
A Located beneath the heart girth
B A fluff of hair on the forehead
C The area directly behind the withers
***D The bottom most part of the tail**
222. In cows, salmonellosis infections are most common in those that have calved within _____.
A 2 days
B 20 days
***C 10 days**
D 50 days
223. What percent of lactating dairy cows have oxytocin in their bloodstreams during milking?
A 60%
B 50%
***C 100%**
D 75%

224. This vitamin plays a role in the coagulation of blood:
*A Vitamin K
B Vitamin B12
C Vitamin C
D Vitamin A
225. Normal body temperature for a dairy cow is _____ .
A 99.5 degrees F
B 107.5 degrees F
*C 101.5 degrees F
D 98.5 degrees F
226. The standard length of the dry period in dairy cattle is _____ ?
A 283 days
B 100 days
*C 60 days
D 30 days
227. What percent of milk is water?
A 50 percent
B 93 percent
C 82 percent
*D 87 percent
228. What machine is used to determine if water has been added to milk?
A Antioscope
B Water Monitor
*C Cryoscope
D Acme Milk Saver
229. When discussing feed mixers, what is the range of manufacturers recommended mixing times?
*A 3-6 minutes
B 7-9 minutes
C 10-15 minutes
D 1-2 minutes
230. In dairy cows, what is the name of the disease caused by the organisms Staph Aureus, Strep Uberis, and Klebsiella?
*A Mastitis
B Listerosis
C Brucellois
D Metritis
231. A Babcock test may be used to measure the _____ % of milk.
A Beta carotene
*B Fat
C Protein
D Somatic cell count

232. **What is subcutaneous injection?**
A It is administered intradermal
B It is administered via the blood vessels
C It is administered in the muscle
***D It is administered under the skin**
233. **Corn silage, stored in upright, top-unloading silos, should be chopped at what percent moisture?**
A 92 to 95 percent moisture
B 72 to 75 percent moisture
***C 62 to 65 percent moisture**
D 82 to 85 percent moisture
234. **When comparing bulls for artificial insemination, what does “SCR” stand for?**
A Sperm conception rate
***B Sire conception rate**
C Service conception rate
D Sibling conception rate
235. **When using a body condition scoring system of 1 to 5, what does a score of 5 mean?**
A Average body condition
***B Extremely fat**
C Below average body condition
D Extremely thin
236. **What is intra muscular injection?**
A It is administered via the blood vessels
***B It is administered in the muscle**
C It is administered intradermal
D It is administered under the skin
237. **Milk fever is also (scientifically) known as what?**
***A Parturient paresis**
B Postpartum paresis
C Mamogenesis
D Masticular Paresis
238. **Milk that is low in SCC has more casein, which is a primary component in _____ ?**
A Milk
***B Cheese**
C Butter
D Cream
239. **When discussing lactation records, what does the term “fat corrected milk” mean?**
A The lactation record has an average amount of milk fat
B Fat has been extracted from the milk to the correct level
C Fat has been added to the milk to the correct level
***D Lactation records have been adjusted to the same milk fat percentage**

240. A material used in a footbath for cows with foot rot problems is:
- *A **Copper sulfate**
 - B Monosodium phosphate
 - C Calcium carbonate
 - D Sodium chloride
241. The breed of dairy cattle that can be roan, all red, all white, or even spotted red and white is:
- A Holstein
 - B Ayrshire
 - *C **Milking Shorthorn**
 - D Guernsey
242. What is the approximate time of ovulation in cattle after the beginning of heat?
- *A **30 hours**
 - B 3 hours
 - C 60 hours
 - D 90 hours
243. What manure waste management method runs manure across a press and squeezes the water out?
- A Lagoon
 - *B **Solids removal**
 - C Slurry
 - D Liquid
244. Heritability for milk production in dairy cattle is:
- A 50%
 - B 5%
 - C 80%
 - *D **30%**
245. A dairy expects to cull approximately _____ % of their herd each year.
- A 50
 - *B **25-30**
 - C 70
 - D 10
246. For best results calves should be fed colostrum within _____ hours of calving:
- A 1st hour
 - B 3 hours
 - *C **6 hours**
 - D First day
247. Fumonsin and zearalenone are examples of:
- A Vitamins
 - *B **Mycotoxins**
 - C Minerals
 - D Carbohydrates

248. In the ruminant digestive system, which to the following is the name of first section of the small intestine that is connected to the abomasum?
- A Ileum
 - *B Duodenum**
 - C Omasum
 - D Jejunum
249. What percent of the cows feed intake is consumed during the daylight hours?
- *A 70%**
 - B 65%
 - C 50%
 - D 90%
250. The _____ is the device responsible for regulating both the vacuum level and the proportion of the vacuum for the front and rear quarters.
- A Inflation
 - B Milk meter
 - C Claw
 - *D Pulsator**
251. It is widely acknowledged that a calcium/phosphorus ration of about _____ is best for a dairy ration since this mirrors that of the cows' body.
- A 10:1
 - B 5:1
 - C 1:1
 - *D 2:1**
252. A disease causing air bubbles under the skin and usually results in rapid death is _____ .
- A Hardware disease
 - *B Black leg**
 - C Milk fever
 - D Vibriosis
253. If the freezing point of a sample of raw milk is above 30 degrees F this indicates:
- A Normal Sample
 - B High butterfat %
 - C Low butterfat %
 - *D High % of water**
254. What does the acronym IPM stands for?
- A International pest management
 - *B Integrated pest management**
 - C Internal pest management
 - D Insect Problem Management
255. What does NSC stand for?
- A Nitrogen Standard Calculation
 - *B Nonstructural Carbohydrates**
 - C Nitrogen Substitute Calories
 - D Nonstructural Carbons

256. A dairy cow that has all 8 permanent incisor teeth can be considered to be a minimum of _____ old.
- *A 4 years
 - B 1 year
 - C 2 years
 - D 3 years
257. The Global Dairy Agenda for Action is a pledge to reduce _____ emissions in an attempt to address global warming?
- A Sulfur
 - B Nitrous oxide
 - C Manure odor
 - *D Carbon
258. The medical name tarsal hygroma, a common ailment of dairy cows is commonly called::
- A Acidosis
 - B Foot Wart
 - *C Swollen hock
 - D Dehydration
259. What is lactogenesis?
- A The cessation of milk production
 - *B The initiation of milk secretion
 - C The initiation of estrus
 - D The initiation of mastitis
260. Where are structural carbohydrates found in the plant?
- *A In the cell wall
 - B In the cell organelles
 - C In the cell nucleus
 - D In the cell membrane
261. Which compartment of a dairy cow's stomach is located closest to the heart and it is a spot where hardware disease occurs?
- A Omasum
 - *B Reticulum
 - C Abomasum
 - D Rumen
262. How many days after breeding can a pregnancy be detected by ultrasound?
- A Between 30 and 55 days
 - *B Between 28 to 30 days
 - C Between 14 and 28 days
 - D Before 14 days
263. What is the sex chromosome configuration of a male calf?
- *A XY
 - B XX
 - C FX
 - D YY

264. Heart girth measurements of cows may be used to estimate:
- A Age
 - *B Body weight**
 - C Milk production
 - D Calving date
265. Where are degradable proteins broken down?
- *A Rumen**
 - B Reticulum
 - C Omasum
 - D Abomasum
266. Cows treated with BST typically show an increase in milk production of:
- A 25%
 - *B 10%**
 - C 50%
 - D 2%
267. A _____ is usually necessary when feeding Dairy Cows TMR rations.
- *A Mixer box on a truck or trailer**
 - B Vertical concentrate bin
 - C Feed trough or bunk feeder in milk barn
 - D Auger system in parlor
268. Which dairy breed originated in the central part of the European continent?
- A Guernsey
 - B Ayrshire
 - *C Brown Swiss**
 - D Milking Shorthorn
269. What numerical value does a Holstein cow get when given the classification excellent?
- *A 90-100**
 - B 70-74.9
 - C <70
 - D 80-84.9
270. What does NMPF stand for?
- A New Mexico Producers Funding
 - *B National Milk Producers Federation**
 - C National Milk Protein Foundation
 - D Northern Milk Producers Formulation
271. The topline of a cow is made up of the:
- A Loin and stifle
 - B Chine and stifle
 - C Chine and flank
 - *D Loin and chine**

272. What is the USDEC?
*A United States Dairy Export Council
B United States Dairy Export Corporation
C United States Dairy Export Center
D United States Dairy Export Company
273. Some Texas dairymen are placing Bermuda and/or corn forage into _____ for fermentation and silage production.
A 4'X4'X8' bales
B Long Metal Trays
C Large Horizontal Cement Pipes
*D Large Plastic Bags
274. What is intravenous injection?
A It is administered under the skin
B It is administered intradermal
*C It is administered via the blood vessels
D It is administered in the muscle
275. Dairy cows need roughage to concentrate ratio of approximately _____ to maintain the desired fat content in the milk.
*A 40/60
B 25/75
C 50/50
D 60/40
276. The major advantage of a "low-line" milk line as compared to the older "high- line" is:
A It is easier to dump waste milk
*B It has a lower vacuum requirement
C You don't hit it with your head while walking
D It can be a smaller I.D., so it is cheaper
277. Cattle grazing stressed on wilted hybrid sorghum/Johnson grass type pasture, may die as a result of _____ .
A Intestinal tract abrasions
B Nutrient overload
*C Prussic acid poisoning
D Nutrient starvation
278. _____ represents the largest daily input cost in producing milk.
A Animals
*B Feed
C Water
D Labor
279. As a rule of thumb when milk production _____ , the milk fat content _____ .
A Increases, increases
B Stops, increases
*C Decreases, increases
D Decreases, decreases

280. **Fats are broken down by a dairy cow in what part of her body?**
*A **Small intestine**
B Rumen
C Large intestine
D Pancreas
281. **Colostrum has approximately _____ calcium, as does regular milk.**
A The Same
B Four Times
*C **Two Times**
D Three Times
282. **The two main problems that effect reproduction are:**
A Heat detection and ovarian cancer
B Heat detection and cold stress
*C **Heat detection and conception rates**
D Heat detection and heat stress
283. **Many dairy bulls have their nose pierced with a ring in it. This allows for:**
A Training of the bull to an electric fence
B Operation of the magnetic latch used for the self feeder
C Individual identification information
*D **Restraint and control of the animal**
284. **The milk produced on a dairy must be moved through a system of components and piping made from:**
A Galvanized steel
B Fiberglass
C High carbon steel
*D **Stainless steel**
285. _____ **is a compound that is fermented for flavor in buttermilk and sour cream.**
A Glucose
B Lactose
*C **Citrate**
D Phosphatase
286. **Producers using BST must give their cows an injection of it every:**
A Day
B 30 days
*C **14 days**
D 7 days
287. **What do the letters FSA stand for?**
A Farm Study Agency
B Farm Safety Administration
*C **Farm Service Agency**
D Farm Sales Agency

288. What combines the Predicted Transmitting Ability for protein, fat, type and udder composite index and ranks the animal on its ability to transmit a balance of these four traits
- A Pedigree Type Production Index
 - B Herd Type Production Index
 - C Type Production Index
 - *D Total Production Index**
289. What is the most essential nutrient in animal feeding animals and maintaining health?
- *A Water**
 - B Protein
 - C Vitamins
 - D Minerals
290. When discussing nutrition, what does NPN stand for?
- *A Nonprotein nitrogen**
 - B Neutral protein nitrogen
 - C Normal protein nitrogen
 - D Natural protein nitrogen
291. Quality forage is critical for a cow's milk production. Many people evaluate hay based upon its green color; others think the color is a poor indication of nutrient composition. However, green colored hay is generally considered to have a higher _____ content than more bleached out colored forage.
- A Vitamin B3
 - B Net Energy
 - *C Beta-carotene**
 - D Total Digestibility Nutrients
292. The most costly form of mastitis is?
- A Clinical
 - B Chronic
 - *C Subclinical**
 - D Acute
293. At how many days can pregnancy be detected by palpation?
- *A Between 14 and 35 days**
 - B Between 40 to 55 days
 - C Between 60 and 95 days
 - D Before 14 days
294. What do the letters FARAD stand for?
- A Food Animal Resistance Activity Database
 - B Food Animal Residue Avoidance Data
 - *C Food Animal Residue Avoidance Databank**
 - D Food Animal Resistance Activity Data
295. Which major dairy breed association was the first to use computers to maintain breed registry records?
- A Milking Shorthorn
 - *B Guernsey**
 - C Holstein
 - D Jersey

296. When referring to rations, what do the letters NFC stand for?
- A Non-fungus Colony
 - B Non-Fat Concentration
 - *C Non-forage Carbohydrates**
 - D Not for Consumption
297. Cows have _____ streak canals per teat.
- A 2
 - *B 1**
 - C 3
 - D 4-8
298. In order to prevent bloat, the feed additive Poloxalene is often added to feed rations for cows that are grazing. Which of the following grazed forages are most likely to cause bloat?
- *A Alfalfa and Clover**
 - B Wheat and barley
 - C Fescue and orchard grass
 - D Turnips and Sudan grass
299. After insemination, how long do sperm live in the cow's reproductive tract?
- *A 24 hours**
 - B 20 minutes
 - C 2 days
 - D 6 hours
300. A cow with high lactation persistence is important for a dairy's economic success. Lactation persistency is:
- A Cows Ability to maintain production under adverse climatic conditions
 - B Cows ability to milk for 500 or more days
 - *C Cows Milk production this month divided by production last month X 100**
 - D Tendency for a cow to milk for more than 30 minutes/milking
301. What does NFDM stand for?
- A Nonfat Dairy Milk
 - B National Forum of Dairy Milkers
 - *C Nonfat Dry Milk**
 - D New Federal Dairy Mandate
302. To maintain margins, you should be monitoring and making decisions based on your herd's IOFC. What do the initials IOFC stand for?
- A Income over forage cost
 - *B Income over feed costs**
 - C Income on feeding cows
 - D Income over finance cost
303. According to recent USDA surveys, what is the most popular age to wean dairy calves?
- A 4 weeks
 - B 2 weeks
 - *C 9 weeks**
 - D 7 weeks

304. What is the most abundant mineral in the body?
A Iodine
B Copper
C Cobalt
***D Calcium**
305. To the hundredth, how many pounds of milk are in one gallon?
A 8.52 pounds
B 8.72 pounds
***C 8.62 pounds**
D 8.92 pounds
306. Parallel milk barns typically have several cows on each side. The cows are arranged in a _____ fashion in this barn.
***A Side by side (head out)**
B Head to tail
C Slanted
D Diagonal
307. One form of biological pest management is a predator insect, that can be bought and released to help control flies at a dairy. Which of these is NOT true about these predators:
***A They may be bothersome to livestock and other animals**
B They are shipped during their pupal stage and begin to control flies ones adults
C They attack the flies at the egg stage
D They are FDA approved for mass release
308. BST is the acronym for what compound?
A Barn Somatotropin
B Bovine Special Tinticure
***C Bovine Somatotropin**
D Black Sodium Tapestry
309. Blood vessels that transport blood away from the heart are called:
A Veins
***B Arteries**
C Lymphes
D Capillaries
310. PTAT stands for what?
***A Predicted Transmitting Ability-Type**
B Progeny Testing At Time
C Predicted Transforming Ability-Type
D Progeny Transforming Ability-Type
311. Manure digesters convert _____ fuel into electricity.
A Propane
B Ethanol
***C Methane**
D Biodiesel

312. When a small metal object punctures the stomach wall and causes an infection, the resulting disease is called _____ .
- A Mastitis
 - B Milk fever
 - C Black leg
 - *D Hardware disease**
313. In what year did the Holstein Association start its program of recording carriers of Undesirable Recessive Traits?
- A 1969
 - B 1986
 - *C 1957**
 - D 1974
314. Proponents of global warming having accused cows of being a major factor. This is due to their release of:
- A Gaseous Oxygen
 - B Argon Gas
 - *C Carbon Dioxide Gas**
 - D Chloride Gas
315. On the PDCA Unified Dairy Score Card, the category “dairy strength” accounts for how many points?
- *A 25**
 - B 10
 - C 20
 - D 15
316. Colostrum given to a baby calf more than _____ hours old is NOT absorbed and thus does little good.
- *A 24**
 - B 48
 - C 12
 - D 6
317. Bovine Progressive Degenerative Myeloencephalopathy (BPDME) is better known as Weaver Syndrome@ because of
- A The regenerative process used to treat symptoms
 - B The name of the person that first detected it
 - C The location where it was first detected
 - *D The weaving gait of affected cattle**
318. How frequently should an average cow freshen?
- A Once every 24 months
 - B Once every 20 months
 - *C Once every 12 months**
 - D Only once in her lifetime
319. Bulk tanks must be emptied and cleaned every _____ hours.
- *A 48**
 - B 72
 - C 84
 - D 120
-

320. What is GATT?
A General Agreement on Trades and Tariffs
***B General Agreement on Tariffs and Trade**
C General Agricultural Tariffs and Trades
D General Alien Tariff and Trade
321. What is the classification for a Holstein cow given the numerical value 80-84.9?
A Fair
B Good
C Poor
***D Good plus**
322. What percent of dry matter in plants is made of carbohydrates?
A 85 percent
***B 75 percent**
C 65 percent
D 50 percent
323. Body condition scores from 1 to 5 are used to track herd health and nutrition. Dry cows should have a body score from:
A 0.5-1.0
B 2.5-3.0
***C 3.5-4.0**
D 2.0-2.5
324. Feeding bulky feeds during the dry period and gradually bringing fresh cows back on grain are ways to prevent:
A Ketosis
B Milk fever
C Mastitis
***D Displaced abomasum**
325. What female hormone causes follicles to begin to develop?
A Luteinizing hormone
B Estrogen
***C Follicle stimulating hormone**
D Prolactin
326. What units are used to measure energy?
A Grams
B Liters
***C Calories**
D Micro Farads
327. What is a nonfunctional mammary gland called?
A Nonproductive quarter
B Absent quarter
C Bulging quarter
***D Blind quarter**

328. The portion of the ruminant digestive system which consists of many folds of tissue is the:
A Abomasum
B Reticulum
C Gizzard
***D Omasum**
329. If there are large numbers of flies around the dairy barn, what should be the first thing to be examined in an attempt to solve the fly problem?
A Calf feeding procedures
B Milking procedures
C Cow feeding procedures
***D Manure handling procedures**
330. Foot Rot is Scientifically known as what?
***A Interdigital phlegmon**
B Digital Divides
C Intraheel laminitis
D Digital Dermatitis
331. Manure management is a major concern for most modern, large-scale dairies. The newest management techniques being used involve:
A Storing the manure in lagoons until it is applied to fields as irrigation water and nutrients
***B Collecting the methane gas being produced and using it as an energy source on the dairy**
C Manure management is NOT a problem since we all know this is a natural process
D Scraping into huge piles and drying before it is shipped offsite
332. How many days into a pregnancy can a fetus be sexed by ultrasound?
A Between 40 and 50 days
B Between 14 and 30 days
C Before 14 days
***D After 55 days**
333. Brucellosis is also known as:
A Milk fever
B Ketosis
C Mastitis
***D Bangs**
334. A _____ gene in Black and White Holsteins is responsible for the red and white color being expressed at times:
A Co-dominant
***B Recessive**
C Incomplete Dominant
D Dominant
335. A condition of low blood calcium, which results in partial paralysis of the cow is known as _____.
***A Milk fever**
B Bovine virus diarrhea
C Hardware disease
D Brucellosis

336. “Thurl position” is a trait evaluated in the _____ category on the PDCA Unified Scorecard?
A Frame
B Dairy strength
C Udder
***D Rear feet and legs**
337. What bacterium causes cattle tuberculosis (TB)?
A Mycobacterium avious
***B Mycobacterium bovis**
C Mycobacterium canine
D Mycobacterium ovius
338. According to the NRC, what percent calcium should a dry cow ration contain?
***A .39 percent**
B 10 percent
C 1 percent
D 2 percent
339. In regards to pedigrees, what is a RHA?
A Rolling Herd Average
B Registered Herd Ancestry
***C Registered Holstein Ancestry**
D Registered Herd Average
340. In which breed of cow is the incidence of milk fever most common?
A Guernsey
***B Jersey**
C Brown Swiss
D Ayrshire
341. Which purebred dairy breed association introduced a “dairy price stabilization” program in 2009?
***A Holstein**
B Guernsey
C Ayshire
D Jersey
342. Milk should be below what temperature before it is transferred to a milk truck?
A 40 degrees F
B 66 degrees F
***C 36 degrees F**
D 26 degrees F
343. What is a common name for infectious kerato conjunctivitis?
***A Pink eye**
B Johne’s Disease
C Ringworm
D Acidosis

344. Rumen bacteria enable dairy cattle to utilize which feed supplement?
A Sodium bicarbonate
B Calcium carbonate
C Defluorinate phosphate
***D Urea**
345. What breed is known to produce milk over a greater number of years than all other breeds?
***A Brown Swiss**
B Guernsey
C Milking Shorthorn
D Jersey
346. After a bulk tank is washed and rinsed, beading of water droplets is a sign of _____.
A pH buffer residue
B Milk residue
C Protein residue
***D Fat residue**
347. What percent non-fiber carbohydrate should a ration contain for high producing cows?
***A 35 to 40 percent**
B 10 to 20 percent
C 56 to 61 percent
D 22 to 27 percent
348. When examining feed rations, what do the letters NDF stand for?
***A Neutral Detergent Fiber**
B Neutral Directing Fiber
C Normal Detergent Fiber
D Normally Digestible Fiber
349. Mule-foot is found most often in _____ dairy breed?
***A Holstein**
B Brown Swiss
C Guernsey
D Jersey
350. Which one of the following is not classified as a fat-soluble vitamin?
***A Vitamin B**
B Vitamin D
C Vitamin K
D Vitamin A