

Quiz Bowl Questions

Nutrition

1. Which bovine stomach compartment functions like a human's?
Answer: abomasum
2. The small intestine receives secretions from what two organs, which aid in digestion?
Answer: pancreas, gallbladder or liver
3. What class of nutrient is the major source of energy in a cow's diet?
Answer: carbohydrates
4. What elements are carbohydrates composed of?
Answer: carbon, oxygen and hydrogen
5. What four elements are proteins primarily composed of?
Answer: nitrogen, carbon, oxygen and hydrogen
6. What is the category of minerals needed in small amounts called?
Answer: Trace minerals-Fe, Cu, Mg, Zn, I, Co and Se
7. What is the minimal NDF for lactating cow rations?
Answer: 28%
8. What does NDF stand for?
Answer: Neutral Detergent Fiber
9. What is the minimal ADF found in lactating cow rations?
Answer: 19%
10. What does ADF stand for?
Answer: acid detergent fiber
11. What percent of the day does a cow chew cud?
Answer: 35% to 40% of the day
12. What part of the stomach is known as the honeycomb?
Answer: reticulum
13. Which vitamin is used to prevent white muscle disease?
Answer: Vitamin E
14. What is anaerobic?
Answer: without air

15. What vitamin is used to prevent an off flavor in milk?
Answer: Vitamin E
16. What mineral is Fe a symbol for?
Answer: iron
17. How many quarts of saliva does a cow produce each day?
Answer: 70 to 80 quarts
18. What vitamin is supplemented to cows in the largest amounts?
Answer: Vitamin A
19. What does a cow do to release gas from the rumen?
Answer: she belches or eructates
20. Which Vitamin is known as B₃?
Answer: Niacin
21. What vitamin is known as B₁?
Answer: Thiamin
22. What is the most common nutrient?
Answer: Water
23. What are the fat-soluble vitamins?
Answer: A, D, E, K
24. What are plant-eating animals called?
Answer: herbivores
25. If you have a 100-lb bag of feed, and 2% of it is protein, how many pounds of the bag is protein?
Answer: 2 lbs
26. What does DMI stand for?
Answer: dry matter intake
27. What mineral is Vitamin E associated with?
Answer: selenium
28. What is the sunshine vitamin?
Answer: Vitamin D
29. Fat has how much more energy than carbohydrates?
Answer: 2.25 times more

30. What happens to the NDF content of alfalfa as it matures?
Answer: NDF content increases
31. What part of a cow's stomach is most similar to a human's stomach?
Answer: abomasum
32. What are the three major categories of carbohydrates that exist in feed?
Answer: 1. Simple sugars (glucose)
2. Storage carbohydrates (starch)
3. Structures carbohydrates (fiber)
33. Which measure of fiber is used to predict the digestibility or energy content of feedstuff?
Answer: ADF
34. Approximately, what percent of dietary crude protein is broken down by microbial digestion in the rumen?
Answer: 60%
35. How many pounds are in a bushel of soybeans?
Answer: 60 lbs
36. What is the best measurement of total fiber?
Answer: NDF
37. What measurement of fiber determines feed intake?
Answer: NDF
38. When using the body conditioning score, what score is ideal for a cow when she freshens?
Answer: 3 to 3.5
39. What is a good source of carotene to provide Vitamin A to cattle?
Answer: green plants, yellow corn
40. What compartment of the cow's stomach is called the true stomach?
Answer: abomasum
41. What is the main function of the microbial population in the rumen?
Answer: digest cellulose, utilize NPN and synthesize B vitamins
42. Name the components of the dairy cow's digestive tract.
Answer: mouth, esophagus, four-compartment stomach, small intestine, large intestine
43. What stomach compartment is the largest?
Answer: rumen

44. What gasses are given off in the rumen?
Answer: methane and carbon dioxide
45. What is another word for belching?
Answer: eructation
46. If gasses are not belched up, what would happen?
Answer: animal would bloat
47. What compartment in the cow's stomach collects hardware?
Answer: reticulum
48. What do dairy farmers put into a cow's stomach to get rid of hardware?
Answer: magnets
49. The omasum is also called what?
Answer: manyplies or stockman's bible
50. What is the function of the omasum?
Answer: removes water and other substances from the digested contents so the feed material is drier
51. What has happened when a cow has a twisted stomach?
Answer: the abomasum moved to an abnormal position and cut off the flow of feed
52. What is another name for a twisted stomach?
Answer: displaced abomasum
53. What acid is produced in the abomasum?
Answer: hydrochloric acid
54. The small intestine is composed of three sections, name them.
Answer: duodenum, jejunum, ileum
55. In the small intestine, nutrients are absorbed through what fingerlike projections?
Answer: villi
56. Where do the nutrients go after being absorbed thru the villi?
Answer: blood and lymphatic systems
57. What is the last segment of tract that undigested feedstuffs pass through?
Answer: large intestine
58. What is the primary digestive activity that occurs in the large intestine?
Answer: absorption of water

59. The cow absorbs volatile fatty acids and uses them as the primary energy source for body functions such as what?
Answer: growth, milk production, reproduction, maintenance
60. What does NPN stand for?
Answer: nonprotein nitrogen
61. What are some sources of NPN?
Answer: urea, ammonium salts, nitrates, saliva
62. What stomach compartments are not developed in a newborn calf?
Answer: rumen and reticulum
63. During nursing of a newborn calf, milk bypasses the rumen via the esophageal groove, also known as what?
Answer: reticular groove
64. What are the six major nutrients for dairy cattle?
Answer: carbohydrates, fats, proteins, vitamins, minerals and water
65. Carbohydrates are broken down into three categories, name them.
Answer: sugars, starch, and fiber
66. What is a good source of starch in a cows diet?
Answer: corn, oats and grains
67. Commonly fed sources of fat include what?
Answer: whole cottonseed, full-fat soybeans, sunflower seeds, tallow
68. What does CP stand for relative to nutrition?
Answer: crude protein
69. What does DIP stand for relative to nutrition?
Answer: degradable intake protein
70. The portion of feed protein broken down to ammonia or amino acids by the rumen microbes is what?
Answer: degradable intake protein or DIP
71. What does SIP stand for relative to nutrition?
Answer: soluble intake protein
72. What is the portion of DIP that is rapidly degraded in the rumen called?
Answer: soluble intake protein or SIP

73. What does UIP stand for relative to nutrition?
Answer: undegradable intake protein
74. The portion of feed protein that is not degraded by the rumen microbes and remains intact as it passes through the rumen to be digested and absorbed further as it moves through the digestive tract is called what?
Answer: UIP or undegradable intake protein
75. Name the two groups of vitamins.
Answer: water soluble vitamins and fat soluble vitamins
76. Name the water soluble vitamins.
Answer: Vitamins B and C
77. Name the fat soluble vitamins.
Answer: Vitamins A, D, E and K
78. An animal short in this vitamin has blindness, is weak and has reproductive problems.
Answer: Vitamin A
79. What is Vitamin B complex necessary for?
Answer: to change feed into energy
80. How many teeth does a mature dairy cow have?
Answer: 32
81. What class of nutrients are the highest in energy?
Answer: fats
82. Soybean meal is generally added to dairy rations to supply what nutrient?
Answer: protein
83. Many dairy farmers feed TMR, what do the initials TMR stand for?
Answer: total mixed ration
84. If properly fed to dairy cattle, urea supplies a readily available and potent source of what chemical element?
Answer: nitrogen
85. What part of the alfalfa plant has the highest % digestibility?
Answer: the leaves
86. How many teeth does a cow have on the front of the upper jaw?
Answer: none

87. Name five annual (live one year) plants used as forages for dairy cattle.
Answer: corn, sorghum, oats, wheat, rye, soybeans, ryegrass, millet, sunflowers
88. Name four forages that can be used as silages.
Answer: corn, sorghum, alfalfa, peas, oats, rye, barley
89. What are carnivores?
Answer: animals that eat meat
90. Which nutrient is made up of amino acids?
Answer: protein
91. Which nutrients are known as the “life amines”?
Answer: vitamins
92. What is the function of Vitamin A?
Answer: to keep eye and body cell linings healthy and working
93. What is the precursor for Vitamin A?
Answer: carotene
94. *Multiple Choice.* In a forage analysis, what is a measure of crude protein in the diet?
a. calcium b. sulfur c. nitrogen d. fiber
Answer: c. nitrogen
95. *Multiple Choice.* What is the primary component used to calculate forage energy value?
a. NDF b. ADF c. crude protein d. calcium
Answer: b. ADF
96. *Multiple Choice.* The major advantage in feeding a TMR ration is:
a. every bite the cow takes is the same b. reduction in labor
c. feed requirements are increased by 20% d. a convenient way to feed silage
Answer: a. every bite the cow takes is the same
97. What is another name for the food pipe?
Answer: esophagus
98. What is the seed portion of the plant called?
Answer: grain
99. What are the two energy nutrients?
Answer: carbohydrates and fats
100. Low fiber and high energy in a ration would have what effect on the butterfat test in the herd?
Answer: butterfat test goes down on a high energy, low fiber diet

101. Which cow stomach compartment allows it to eat coarse feeds such as haylage?
Answer: rumen
102. *Multiple Choice.* Feeding extra of what vitamin before calving can help prevent milk fever?
a. Vitamin A b. Vitamin C c. Vitamin D d. Vitamin K
Answer: c. Vitamin D
103. *Multiple Choice.* Which following mineral is not a macro-mineral?
a. calcium b. phosphorus c. nitrogen d. selenium
Answer: d. selenium
104. *Multiple Choice.* Rumen bacteria enable dairy cattle to utilize which feed supplement?
a. sodium bicarbonate b. urea c. calcium carbonate
d. defluorinate phosphate e. magnesium oxide
Answer: b. urea
105. *Multiple Choice.* TDN is a common term to nutritionists, which stands for:
a. total digestible nutrients b. total dietary nitrogen c. Today's Dairy News
Answer: a. total digestible nutrients
106. *Multiple Choice.* When compared to normal corn silage, brown-midrib corn silage has more energy and higher digestibility. This is due largely to its lower content of what?
a. starch b. lignin c. fat d. potassium
Answer: b. lignin
107. *Multiple Choice.* In a cow's diet, fat sources that reduce feed digestibility are classified as:
a. rumen-inhibiting b. rumen-inert c. rumen-insufficient d. rumen-active
Answer: d. rumen-active
108. *Multiple Choice.* What vitamin is needed for blood clotting?
a. Vitamin B b. Vitamin K c. Vitamin A d. Vitamin D
Answer: b. Vitamin K
109. A cow will mobilize fat to meet the needs of this nutrient.
Answer: energy
110. Not enough of this in the ration will lead to acidic rumen conditions.
Answer: fiber
111. *Multiple Choice.* Oral calcium salts are given to cows to prevent what disease?
a. mastitis b. ketosis c. infertility d. milk fever
Answer: d. milk fever
112. *Multiple Choice.* What are acetate, propionate and butyrate classified as?
a. VFA's b. minerals c. protein d. vitamins
Answer: a. VFA's

113. How many pounds of dry starter should a calf be consuming at weaning?

Answer: 1 ½ to 2 pounds

114. *Multiple Choice.* What is a pH less than 7?

- a. basic b. neutral c. acid d. hot

Answer: c. acid

115. If the pH of the rumen is less than 5.5, what is the cow suffering from?

Answer: subacute rumen acidosis or acidosis

Genetics

1. If you have a predominant x-bearing sperm cell in a semen fraction, what are you trying to accomplish?

Answer: you are trying to get heifer calves

2. What two dairy breeds are associated with Brattleboro, VT.

Answer: Holstein and Ayrshire

3. What two breeds are associated with Beloit, WI?

Answer: Brown Swiss and Milking Shorthorn

4. Who is the #1 net merit Holstein bull in the November evaluations?

Answer: see Hoard's December issue

5. What dairy breed is afflicted with genetic disorders of BLADS, mulefoot and DUMPS?

Answer: Holsteins

6. What two breeds are associated with Reynoldsburg, OH?

Answer: Jersey and Guernsey

7. What does PTA stand for?

Answer: predicted transmitting ability

8. What breed of cattle can be roan, red, white, or red and white?

Answer: Milking Shorthorn

9. What is a calf born without horns called?

Answer: polled

10. What is thought to be the oldest dairy breed?

Answer: Brown Swiss

11. How much genetics on average are received from the great-grand parents?
Answer: 1/8
12. What breed of dairy cows has the undesirable recessive trait called weavers?
Answer: Brown Swiss
13. What term describes mating two purebred animals of different breeds?
Answer: crossbreeding
14. What breed is born white and turns brown?
Answer: Brown Swiss
15. What traits are included in net merit?
Answer: productive life, SCS, milk, fat, protein, feet and legs, udder, size
16. What is a record of an animal's ancestry called?
Answer: a pedigree
17. From what country did Ayrshire originate?
Answer: Scotland
18. What is an animal that has been tamed called?
Answer: domesticated
19. What health disorder shows its first signs in Brown Swiss heifers at 5 to 8 months of age? Heifers that are afflicted lack coordination in hind legs and have problems walking.
Answer: weavers
20. One group of mammals eats meat and is called carnivores. What is the group that eats grass and grains called?
Answer: herbivores
21. What does PDCA stand for?
Answer: Purebred Dairy Cattle Association
22. What animals are officially recorded in the breed association herd book?
Answer: registered
23. The official ancestry record of registered animals of a breed is called what?
Answer: herd book
24. What is a crossbred?
Answer: animals that have parents of different breeds
25. What does USDA stand for?
Answer: United States Department of Agriculture

26. Name the seven breeds of dairy cattle recognized by the PDCA.
Answer: Ayrshire, Brown Swiss, Guernsey, Holstein, Jersey, Milking Shorthorn, Red and White
27. Where is the Purebred Dairy Cattle Association office found?
Answer: Brattleboro, VT
28. The first Ayrshire was imported to the United States in what year?
Answer: 1882
29. What color are Ayrshires?
Answer: deep cherry red, mahogany, brown, or a combination
30. Where did Brown Swiss originate?
Answer: Switzerland
31. When were Brown Swiss first imported to the US?
Answer: 1869
32. This dairy breed is usually docile, slower moving and has more tolerance to heat.
Answer: Brown Swiss
33. What breed is called the Royal Breed?
Answer: Guernsey
34. Where did the Guernsey's originate?
Answer: Isle of Guernsey in the English Channel
35. When were Guernsey's imported into the US?
Answer: 1831
36. What color are Guernsey's?
Answer: fawn, either solid or with white markings
37. Where is the American Guernsey Association located?
Answer: Reynoldsburg, OH
38. What breed has the largest milk production?
Answer: Holstein
39. Where did the Holstein originate?
Answer: The Netherlands
40. What colors are Holsteins?
Answer: black and white or red and white

41. The official beginning of the Holstein breed in the US was in what year?
Answer: 1852
42. Where is the Holstein Association found?
Answer: Brattleboro, VT
43. More than 80% of the registered cattle are of what breed?
Answer: Holsteins
44. Where did the Jersey breed originate?
Answer: Isle of Jersey in the English Channel
45. When were Jersey's imported into the US?
Answer: 1815
46. Where was the American Jersey Cattle Club founded?
Answer: Reynoldsburg, OH
47. Where did Milking Shorthorns originate?
Answer: Northeastern England
48. The "milk breed" Shorthorns entered the US in what year?
Answer: 1783
49. What did early settlers refer to milking shorthorns as?
Answer: Durhams
50. Where is the American Milking Shorthorn Society found?
Answer: Beloit, WI
51. Each cell contains how many pairs of chromosomes in dairy cows?
Answer: 30
52. Units of heredity are known as what?
Answer: genes
53. Examples of genetic defects in dairy cattle are what?
Answer: BLADS, mulefoot, DUMPS in Holsteins, limber leg and RVC in Jerseys, weavers in Brown Swiss
54. The dairy animals family tree or record of ancestry is called what?
Answer: pedigree
55. What is the main way that new genetics are introduced into a herd?
Answer: sire selection

56. “White heifer” disease occurs in what breed?
Answer: Milking Shorthorn
57. When evaluating sires, what does TPI stand for?
Answer: type production index
58. Who calculates the quarterly genetic evaluations for Holstein production traits?
Answer: USDA
59. Chromosomes are found in what part of the cell?
Answer: nucleus
60. What are mammals?
Answer: animals that nurse their young, breathe air, and have fur or hair
61. Which breed produces milk with a golden color?
Answer: Guernsey
62. What is the father of a calf called?
Answer: sire
63. *Multiple Choice.* A fawn/white, very gentle cow with a high butterfat content is characteristic of:
a. Holstein b. Jersey c. Guernsey d. Ayrshire
Answer: c. Guernsey
64. *Multiple Choice.* Heritability for milk production in dairy cattle is:
a. 5% b. 30% c. 50% d. 80%
Answer: b. 30%
65. *Multiple Choice.* Generally, which group of animals on a farm will have the best genetics?
a. yearlings b. old cows c. first calf heifers d. calves
Answer: d. calves

Reproduction

1. In natural service, where is semen deposited?
Answer: vagina
2. A female born twin to a bull is called what, and what percent of these are sterile?
Answer: freemartin, and 90 to 91%
3. What percent of dairy animals are artificially inseminated?
Answer: 60%

4. What gamete do male animals produce?
Answer: sperm
5. How can you tell if a cow is in standing heat?
Answer: she allows other animals to mount her
6. What technology did Professor Enos Perry introduce to American dairymen?
Answer: artificial insemination
7. What is the main reason a cow does not come into heat?
Answer: she is pregnant
8. What does CL stand for?
Answer: corpus luteum
9. What is stored in half cc straws?
Answer: semen
10. What liquid is semen stored in?
Answer: liquid nitrogen
11. At what temperature is semen thawed?
Answer: 93 to 97 degrees or 90 to 95 degrees
12. How many days should the dry period be?
Answer: 50 to 70 days
13. What is the biggest disadvantage of a bull for breeding?
Answer: safety
14. What does ET stand for?
Answer: embryo transfer
15. In the reproductive track, where are the muscular rings found?
Answer: cervix
16. What is dystocia?
Answer: calving difficulty
17. What is the average length of standing heat in dairy cattle?
Answer: 12 to 20 hours
18. What does AI stand for?
Answer: artificial insemination

19. What are the main female reproductive organs?
Answer: ovaries, oviducts, uterus, cervix, vagina and vulva
20. What produces the eggs?
Answer: ovaries
21. What serves as a gateway between the uterus and the vagina?
Answer: cervix
22. What is the name of the tube that carries the egg to the uterus?
Answer: oviduct or fallopian tubes
23. What connects the cervix with the vulva?
Answer: vagina
24. What is the main function of the male reproductive organs?
Answer: to produce sperm
25. What is the coiled tube that serves as a storehouse of sperm called?
Answer: epididymis
26. What is the main male hormone for reproduction?
Answer: testosterone
27. A combined accessory gland fluid and sperm are called what?
Answer: semen
28. The ovaries in the female produce a main hormone called what?
Answer: estrogen
29. The uniting of the sperm and egg to create a new calf is called?
Answer: fertilization
30. When the hormones called estrogens make a cow receptive to the male, this time is called what?
Answer: estrus or heat period
31. What is it called when the egg is released?
Answer: ovulation
32. What hormone keeps the uterus in perfect condition for the developing fetus?
Answer: progesterone
33. How often does the heat period repeat itself in a non-pregnant animal?
Answer: every 21 days

34. What links the embryo to the placenta?
Answer: naval cord or umbilical cord
35. Where do the waste products from the embryo go after they pass through the placenta?
Answer: mother's blood stream
36. How long is the gestation period?
Answer: 280 days
37. What is the first milk produced after birth called?
Answer: colostrum
38. What does colostrum contain to help fight off infection?
Answer: antibodies
39. When should you feed the calf colostrum?
Answer: just a few minutes after birth
40. What are some signs of heat?
Answer: restlessness, bellowing, following other animals, vulva becoming red and moist, clear mucus appearing on the vulva
41. What is the most reliable sign that a cow is in standing heat?
Answer: stands when being mounted
42. What is a freemartin?
Answer: heifer born twin with a bull
43. When does ovulation occur relative to the start of standing heat?
Answer: 30 hours after the start of standing heat
44. How many hours does the egg have a fertile life after it is released before it must be fertilized?
Answer: 6 to 10 hours
45. How long does the sperm live after it is deposited in the cow's reproductive tract?
Answer: 24 hours
46. A cow observed in standing heat in the morning should be bred when?
Answer: the afternoon of the same day
47. A common goal is that a cow should calf every how many months?
Answer: 12 to 13 months
48. A procedure using hormones to alter the estrous cycle of cows to bring them into heat at the same time is called what?
Answer: estrus synchronization

49. The amount of time between calvings is called what?
Answer: calving interval
50. The most frequent reason for long calving intervals is what?
Answer: faulty heat detection
51. Abnormal heat cycle length, lack of heat periods, or a cow in constant heat could be caused by what?
Answer: cystic ovaries
52. What is embryo transfer?
Answer: when a donor cow's embryo is transferred to a recipient cow
53. What do the letters IVF stand for?
Answer: in vitro fertilization
54. A technique where sperm fertilizes the ovum in a laboratory dish, grows into a young embryo in the lab and is then transferred to a cow is called what?
Answer: in vitro fertilization
55. What is the process of shedding a follicle by the ovary?
Answer: ovulation
56. Your vet tells you that your heifer is barren, what does he mean?
Answer: she is sterile
57. Two individuals develop from one fertilized egg and are genetically alike, what term is used to describe them?
Answer: identical twins
58. What is parturition?
Answer: calving
59. In reproduction, what do the initials FSH stand for?
Answer: follicle stimulating hormone
60. What is the hormone that causes ovulation?
Answer: LH (lutelyzing hormone)
61. What does it mean when a cow is in her first trimester?
Answer: first 3 months of pregnancy
62. What does the word gestation mean?
Answer: the time a mother carries her calf

63. In reproduction, what are the two gametes that unite to form an embryo?
Answer: egg and sperm
64. Calves are born about how many months after the cow is bred?
Answer: 9 months
65. Name the female and male sex cell:
Answer: female – egg or ovum, male – sperm
66. *Multiple Choice.* Which of the following is not part of the cow's reproductive system?
a. vulva b. ovary c. sigmoid flexure d. fallopian tubes
Answer: c. sigmoid flexure
67. *Multiple Choice.* Fertilization of the ova normally occurs in the:
a. vagina b. uterus c. infundibulum d. none of these
Answer: d. none of these
68. *Multiple Choice.* The hormone that stimulates testosterone production is:
a. FSH b. luteinizing hormone c. prolactin d. testosterone
Answer: b. luteinizing hormone
69. *Multiple Choice.* The body that forms over the follicular cavity and aids in the maintenance of pregnancy is the:
a. ovarian follicle b. infundibulum c. corpus luteum d. prostate
Answer: c. corpus luteum
70. *Multiple Choice.* What female hormone causes follicles to begin development?
a. luteinizing hormone b. follicle stimulation hormone
c. prolactin d. none of these
Answer: b. follicle stimulation hormone
71. When artificially inseminating a cow, the technician should deposit the semen:
a. in the vagina b. in the cervix c. in the uterus d. at the point the cervix and uterus meet
Answer: d. at the point the cervix and uterus meet
72. What is the ideal calving interval for mature cows?
a. 10 to 11 months b. 12 to 13 months c. 14 to 15 months d. 17 to 19 months
Answer: b. 12 to 13 months
73. In the female reproductive tract, what do prostaglandins regress?
Answer: corpus luteum or CL
74. If the heat detection rate is 30% and the conception rate is 30%, what is the pregnancy rate?
Answer: 9%
75. What is the sex chromosome combination of a male calf?
Answer: XY

Health

1. What are gray, crusty patches on skin, usually on the head and shoulder region?
Answer: ringworm
2. What are two types of lice?
Answer: biting and sucking
3. Why are dewclaws removed?
Answer: to prevent injury to the teat
4. Why do you warm frozen colostrum slowly?
Answer: so you don't destroy the natural antibodies
5. What are two types of immunity?
Answer: active (calf's own immunity), passive (from mother to calf)
6. What are extra teats called?
Answer: supernumerary teats
7. When was BST legalized?
Answer: 1993
8. Why shouldn't a calf be vaccinated before 2 months of age?
Answer: the antibodies that it has received through the colostrum interfere with the vaccine
9. What does IBR stand for?
Answer: infectious bovine rhinotracheitis
10. What vitamin helps to prevent white muscle disease?
Answer: Vitamin E
11. When foot rot occurs, how many feet are usually affected?
Answer: one
12. When is the best time to treat subclinical mastitis?
Answer: during the dry period
13. Name four signs of pink eye?
Answer: white spot in middle of eye, blindness, drainage, tend to stay in shade
14. What season does pink eye most often occur?
Answer: summer

15. What is a puss pocket called?
Answer: abscess
16. What does IM mean relative to injections?
Answer: intramuscular
17. What is the condition called that results from lack of Vitamin E or selenium in the diet?
Answer: white muscle disease
18. What disease causes abortion at 5 to 9 months of the gestation period and needs a blood test to identify infected cows?
Answer: brucellosis
19. What disease causes short, irregular heat cycles and abortion at 4 to 6 months? It is spread by an infected bull.
Answer: vibriosis
20. What disease causes loss of fetus at 1 to 16 weeks? Short, irregular heat cycles are the major symptoms?
Answer: trichomoniasis
21. IBR is also called what?
Answer: red nose or infectious bovine rhinotracheitis
22. An excess of calcium fed during the dry period can result in what metabolic disorder at freshening?
Answer: milk fever
23. What happens to a cow's milk production as somatic cell count increases?
Answer: production decreases
24. If a cow has an interdigital foot infection, where is it?
Answer: between the toes
25. In herd health, what disease do the initials BLV stand for?
Answer: bovine leukosis virus
26. What is an animal doctor called?
Answer: veterinarian
27. What is done to the calf's navel after it is born?
Answer: it is dipped in iodine to prevent infection
28. *Multiple Choice.* Which of the following is an infectious disease?
a. milk fever b. hardware disease c. ringworm d. bloat
Answer: c. ringworm

29. What carries the blood away from the heart?
Answer: arteries
30. What is a cow's normal temperature?
Answer: 101.0°F
31. What is the normal pulse rate of a cow?
Answer: 70 to 120
32. An infection of the lungs is called:
Answer: pneumonia
33. *Multiple Choice.* Leptospirosis causes:
a. higher milk production b. abortion c. calcium d. sores on neck
Answer: b. abortion
34. *Multiple Choice.* Subcutaneous injections are placed:
a. in the mouth b. deep in the muscle c. under the skin
Answer: c. under the skin
35. *Multiple Choice.* A disease common in high producing cows and caused by an energy deficiency is:
a. milk fever b. ketosis c. fat cow syndrome d. foot rot
Answer: b. ketosis
36. *Multiple Choice.* The nutritional disease associated with improper feeding of dry cows and a drop in blood calcium at the onset of lactation is:
a. ketosis b. metritis c. milk fever d. udder edema
Answer: c. milk fever
37. *Multiple Choice.* Metritis is the technical name for what condition?
a. birth b. uterine infection c. lameness d. retained placenta
Answer: b. uterine infection
38. *Multiple Choice.* Which of the following is considered a metabolic disease?
a. foot rot b. metritis c. corcialiosis d. milk fever
Answer: d. milk fever
39. *Multiple Choice.* Material used in a footbath for cows with foot rot problems is:
a. copper sulfate b. calcium carbonate c. sodium chloride d. monosodium phosphate
Answer: a. copper sulfate
40. *Multiple Choice.* Udder edema in cows that freshen is associated with:
a. too much salt b. too much hay c. too much calcium and phosphorus
d. too little salt in the dry cow's diet
Answer: a. too much salt

41. *Multiple Choice.* Which of the following is not an infectious disease?
a. foot rot b. warts c. hiping fever d. ketosis
Answer: d. ketosis
42. *Multiple Choice.* The somatic cell test checks for the presence of:
a. mastitis b. brucellosis c. white blood cells d. bacteria
Answer: c. white blood cells
43. The disease that causes the largest annual loss to US dairy producers is?
Answer: mastitis
44. *True or False.* Zoonosis is a term for any disease that can be transmitted to a man via contact with animal pathogens.
Answer: true
45. *Multiple Choice.* Which one of the following diseases is not metabolic?
a. ketosis b. pinkeye c. bloat d. milk fever
Answer: b. pinkeye
46. What is a type of white blood cells in the lymph vessels called?
Answer: leucocytes
47. What disease does cryptosporidium parvum cause in young calves?
Answer: scours

Management

1. What is a dry cow?
Answer: a cow not producing milk
2. How many seconds do you hold a freeze brand iron on a cow?
Answer: 20 to 24 seconds
3. Where do you use a weigh tape?
Answer: around the hearth growth
4. What is the main reason for involuntary culling of a cow?
Answer: poor reproduction
5. What does DHIA stand for?
Answer: Dairy Herd Improvement Association

6. What is a mature bovine female called?
Answer: cow
7. How do cows effectively lose body heat during hot weather?
Answer: evaporation by sweating or panting
8. At what stage of lactation can body condition be most efficiently restored in cows?
Answer: late lactation
9. List two methods of reducing heat stress in cattle.
Answer: shade, ventilation, cooling, sprinkling
10. During hot weather, what happens to a cow's feed intake and milk production?
Answer: both decline
11. Name four factors in addition to nutrition that influence milk composition.
Answer: genetics, breed, age, stage of lactation, environmental temperature, season, estrus, milking procedures
12. Name five bedding materials used under dairy cattle.
Answer: straw, shavings, sand, sawdust, rubber mats, shredded paper, crushed limestone
13. The fly life cycle, from egg to adult, is how many days?
Answer: 10 days
14. *Multiple Choice.* Bovine somatotropin is used to:
a. release a retained placenta b. increase rumen pH
c. increase blood calcium in cows d. increase milk yields
Answer: d. increase milk yields
15. *Multiple Choice.* Major production cost on a farm is?
a. labor b. feed c. electricity d. repairs
Answer: b. feed
16. *Multiple Choice.* On a DHIA record, the term 305 ME stands for:
a. 305-day mature equivalent b. 305-day milk equivalent c. 305-pound milk efficiency
Answer: a. 305-day mature equivalent
17. *Multiple Choice.* The normal lactation of dairy cows is how many days?
a. 130 b. 175 c. 205 d. 305
Answer: d. 305
18. *Multiple Choice.* Which of the following, if highly correlated to, will increase labor and management income per operator?
a. lbs. of milk sold per cow b. % of registered cows in the herd
c. higher capital investment per cow d. small herd size
Answer: a. lbs. of milk sold per cow

19. *Multiple Choice.* Which of the following has the greatest impact on improving producer income?
a. raising your own feeds b. increase calving interval
c. increasing % of registered cows in herd d. decreasing SCC

Answer: d. decreasing SCC

20. *Multiple Choice.* A dairy heifer should have her first calf at about how many months of age?
a. 15 b. 18 c. 24 d. 12

Answer: c. 24

21. *Multiple Choice.* Animals, which are bred to calve at two years of age must gain about how many pounds per day?
a. 2.7 b. 3.7 c. 4.7 d. 1.7

Answer: d. 1.7

22. *Multiple Choice.* To estimate a cow's production for a single lactation, multiply the cow's peak production by what factor?
a. 25 b. 125 c. 225 d. 325

Answer: c. 225

23. *Multiple Choice.* During a cow's lactation:
a. 2/3's of the milk is produced during the first half
b. cows usually will peak in the second or third month
c. for each pound of milk added on to peak, there will be 200 to 240 more pounds
d. all of the above

Answer: d. all of the above

24. *Multiple Choice.* A farmer has 50 milking cows in the herd, how many dry cows would normally be present?
a. 25 b. 18 c. 8 to 9

Answer: c. 8 to 9

25. *Multiple Choice.* What is the appropriate body condition score for a dry cow?
a. 1.5 to 2.0 b. 2.5 to 3.0 c. 3.5 to 4 d. 4.5 to 5

Answer: c. 3.5 to 4

26. *Multiple Choice.* For a dairy herd that raises its own replacements, the greatest cost per animal is usually?
a. feed b. labor c. buildings and facilities charges d. interest e. vet/drug costs

Answer: a. feed

27. What does the term "dry treating" refer to?

Answer: infusion of antibiotics into the udder at time of drying off

Milking

1. What are the two purposes of an inflation?
Answer: massage the teat, release vacuum pressure
2. What muscle cells are essential for milk letdown?
Answer: myoepithelial
3. Which hormone blocks milk letdown?
Answer: adrenaline
4. What is the hollow cavity found inside the teat called?
Answer: teat cistern
5. During milk removal from the udder, which milk has the highest fat percentage?
Answer: post milk (last milk removed from the udder)
6. According to the University of Minnesota, even after a normal and complete milkout, what percent of milk will remain in the udder?
Answer: 10 to 15%
7. What is another name for a teat cup liner?
Answer: inflation
8. How many days should the dry period be?
Answer: 50 to 70 days
9. What are two types or categories of mastitis?
Answer: subclinical, clinical, acute, chronic (or contagious and environmental)
10. What is the most effective way of preventing new mastitis infections?
Answer: teat dipping
11. What is the usual ratio of the amount of milk produced by the rear udder versus the fore udder?
Answer: 60:40
12. What is udder edema?
Answer: swelling in the udder
13. CMT is used to detect what type of infection?
Answer: mastitis
14. Milk production peaks after how many weeks of calving?
Answer: 6 to 8 weeks

15. Why should a teat dip be used after milking?
Answer: to help prevent bacteria from entering the teat, which reduces udder infections
16. During the milking herd schedule, when should mastitis infected cows be milked?
Answer: last
17. What is the cluster of milk producing cells in the udder called?
Answer: alveoli
18. What is predipping?
Answer: dipping or spraying teats with a disinfectant prior to milking
19. Approximately, how many gallons of blood pass through the udder for each gallon of milk produced?
Answer: 400 to 500 gallons
20. A second or later lactation cow produces half of her total production in approximately how many days?
Answer: 120 days
21. What is the name of the organ that produces milk?
Answer: udder
22. *Multiple Choice.* What hormone is responsible for milk letdown?
a. androgen b. adrenaline c. oxytocin d. estrogen
Answer: c. oxytocin
23. *Multiple Choice.* What direction should calf hutches be positioned facing in the winter?
a. north b. south c. east d. west e. does not matter
Answer: b. south
24. *Multiple Choice.* What part of the milker unit is directly associated with massaging the teats?
a. vacuum pump b. pulsator c. claw d. vacuum controller
Answer: b. pulsator
25. *Multiple Choice.* The maximum somatic cell count allowable for Grade A milk is?
a. 1 million/milliliter b. 100,000/milliliter c. 1 milliliter/liter d. 750,000/milliliter
Answer: d. 750,000/milliliter
26. The primary purpose of teat dipping is?
Answer: kills microorganisms present on teats after milking
27. *Multiple Choice.* Herringbone and side-by-side are both forms of what?
a. maternity pen design b. parlor design c. feeding systems d. freestall design
Answer: b. parlor design

28. What does SCC stand for?
Answer: somatic cell count
29. *Multiple Choice.* Grade A milk must be cooled to what temperature or less within 2 hours?
a. 32°F b. 60°F c. 0°F d. 45°F
Answer: d. 45°F
30. *Multiple Choice.* Recommended milking vacuum on a low line milking system should be:
a. 12 to 13 inches mercury b. 12 to 13 pounds mercury
c. 14 to 15 inches mercury d. 14 to 15 pounds mercury
Answer: a. 12 to 13 inches mercury
31. *Multiple Choice.* The streak canal is another name for:
a. anus b. teat opening/teat orifice c. milk pipeline d. bulk tank release valve
Answer: b. the teat opening/teat orifice
32. *Multiple Choice.* To prevent the spread of mastitis, which cows should be milked first:
a. heifers with mastitis b. heifers with no mastitis
c. cows with mastitis d. cows with history of mastitis
Answer: b. heifers with no mastitis
33. *Multiple Choice.* Milking time is best reduced by:
a. increasing vacuum b. using more units c. speeding up pulsators d. preparing cows properly
Answer: d. preparing cows properly
34. *Multiple Choice.* There is the most production loss on a herd from what type of mastitis?
a. clinical b. subclinical
Answer: b. subclinical
35. What group of cows should maintain the lowest SCC within a dairy herd?
Answer: first lactation cows

Marketing and Products

1. What class of milk is used for yogurt?
Answer: Class II
2. What is sheep cheese called?
Answer: roquefort (feta, ricotta, picaroon)
3. What popular cheese is found on pizza?
Answer: mozzarella

4. What did the FDA change the names of skim milk, one percent, two percent, and whole milk to?
Answer: skim = fat free or no fat
one percent = low fat
two percent = reduced fat
whole milk = milk
5. How many calories does one serving of whole milk have?
Answer: 160
6. What percent fat does whole milk have?
Answer: 3.25%
7. What is the percent lactose in milk?
Answer: 4.9%
8. Milk used for hard dairy products like cheese and butter is produced from what class?
Answer: Class III
9. What percent of milk is water?
Answer: 86 to 88%
10. What amount of money per cwt is used in dairy promotion?
Answer: 15 cents
11. The consumption of which dairy product has increased the most over the last 20 years?
Answer: cheese
12. What is ultrafiltration?
Answer: small amount of the water is removed from milk
13. What are the four grades of dairy cow carcasses?
Answer: commercial, utility, cutter, canner
14. What form of milk is made by churning whipping cream?
Answer: butter
15. Milk used in soft dairy products such as cottage cheese, ice cream and yogurt is described as what class?
Answer: Class II
16. During what month is rancid flavor of milk at its peak?
Answer: August
17. Who funds the National Dairy Council?
Answer: dairy farmers

18. Which enzyme is needed for rapid lactose breakdown?
Answer: lactase
19. What is lactose?
Answer: milk sugar
20. Name four of the major components of milk.
Answer: protein – 3.2% lactose – 4.9%
 fat – 3.5% vitamins and minerals – 0.7%
 water – 87.7%
21. Name three major groups or types of dairy products using bacterial cultures.
Answer: sour cream, yogurt, cottage cheese, hard cheeses, buttermilk
22. Which nutrient in milk is an important muscle builder?
Answer: protein
23. Which nutrient is most important to build strong bones and teeth?
Answer: calcium
24. What is pasteurization?
Answer: heating milk to 161 degrees for 15 seconds to kill the bacteria
25. What is homogenization?
Answer: forcing milk through tiny valves to break up the fat
26. Which vitamin is most often added to milk at the milk plant?
Answer: Vitamin D
27. How many pounds of retail meat come from a 1200-pound cow?
Answer: 406 – steak, ground meat, sausage, roasts
28. List some variety meats that come from dairy animals?
Answer: liver, tongue, kidneys, brains, heart, ox joints
29. List some inedible byproducts from dairy cattle?
Answer: leather, sports equipment, soap, glue, cosmetics, buttons, bone china, picture film,
 sandpaper, violin strings, surgical sutures
30. What is the solid portion of cheese called?
Answer: curds
31. What is the liquid portion of cheese called?
Answer: whey

32. What flavoring is added to cheese and butter to improve the taste?
Answer: salt
33. How many pounds of milk does it take to make a pound of butter?
Answer: 21.2 (21)
34. How many calories are there in one teaspoon of butter?
Answer: 33
35. List four kinds of cheese?
Answer: bleu, brick, colby, mozzarella, cheddar
36. Which mineral is used with calcium to build strong bones and teeth?
Answer: phosphorous
37. A glass of skim milk contains how many calories?
Answer: 90
38. On average, milk is about what percent solids?
Answer: 13
39. What is rennet?
Answer: an enzyme from the stomachs of dairy cattle added to cheese to help coagulate the curds
40. After butter is made, what is the liquid part remaining called?
Answer: buttermilk
41. Which month is national dairy month?
Answer: June
42. Milk contains the largest amount of what mineral?
Answer: calcium
43. *Multiple Choice.* In what year did congress pass the Agricultural Adjustment Act giving the Secretary of Agriculture authority to regulate the marketing of milk?
a. 1890 b. 1921 c. 1933 d. 1955
Answer: c. 1933
44. *Multiple Choice.* What milk handling process breaks up fat globules to keep them suspended in milk?
a. pasteurization b. equalization c. homeostasis d. skimming e. homogenization
Answer: e. homogenization
45. *Multiple Choice.* Grade A milk is considered:
a. manufactured milk b. fluid milk
Answer: b. fluid milk

46. *Multiple Choice.* Which of the following products does most of Minnesota milk get processed into?
a. milk b. butter c. ice cream d. cheese

Answer: d. cheese

47. Who invented pasteurization?

Answer: Louis Pasteur, 1856

Calves

1. How much should a Holstein weigh at 6 months of age?

Answer: 400 lbs. (350 to 450 lbs.)

2. When should dehorning be done on animal?

Answer: when button is visible or at young age (<3 weeks)

3. Why is it important to clean the electric dehorner?

Answer: better penetration and contact

4. What season of the year is hypothermia most likely to occur?

Answer: winter

5. What abnormality should you look for before castrating a bull?

Answer: rupture, testicle not descended

6. The primary goal in raising heifers is to have them large enough to breed at what age?

Answer: 13 to 15 months

7. At what age does a calf have a fully developed rumen?

Answer: 4 months

8. What is the most prevalent illness in calves?

Answer: scours

9. How much colostrum should a calf minimally receive in the first feeding?

Answer: 2 quarts

10. *Multiple Choice.* Normal body temperature of a dairy calf is:

a. 98.6° F b. 101.5° F c. 102.5° F

Answer: c. 102.5° F

11. *Multiple Choice.* Calves up to the age of 6 weeks should be housed in groups of:

a. 1 b. 3 c. 7 to 10 d. 15+

Answer: a. 1

Judging

1. What trait corresponds with openness of the rib?
Answer: dairy character
2. What is the loose skin on the underside of the neck?
Answer: dewlap
3. When spring of rib and depth of body are used, which category is being described?
Answer: body capacity
4. What part of the body is the dish located?
Answer: dip in forehead
5. How many points does dairy character receive on the Dairy Cow Unified Score Card?
Answer: 20
6. In judging, what major category includes the back?
Answer: frame
7. On what day would a heifer calf need to be born to be the oldest possible in the senior heifer calf class?
Answer: September 1
8. What is the major support of the udder that divides the left and right halves?
Answer: median suspensory ligament
9. *Multiple Choice.* The PDCA Dairy Cow Unified Score Card assigns 40 points to which following categories?
a. dairy character b. body capacity c. mammary
d. frame e. both a and b
Answer: c. mammary
10. *Multiple Choice.* Which of the following is not a factor on the Unified Dairy Scorecard?
a. cow color pattern b. mammary system c. frame d. body capacity
Answer: a. cow color pattern
11. *Multiple Choice.* A Holstein cow that scores 88 when classified would be categorized as:
a. excellent b. very good c. good plus d. good
Answer: b. very good

Miscellaneous

1. What year did cattle come to the Plymouth colony?
Answer: 1624
2. Who first wrote “The Cow is the Foster Mother of the Human Race?”
Answer: H.D. Hoard
3. What dairy event takes place first week in October?
Answer: World Dairy Expo
4. What is the most common mistake made when clipping the rump?
Answer: cut too short
5. What does a cow use to chase flies?
Answer: switch
6. What are the fundamental units of all body tissues called?
Answer: cells
7. When did dairy cows come to America?
Answer: with Christopher Columbus in 1493, second voyage
8. *Multiple Choice.* The World Dairy Expo is held in:
a. Madison, WI b. Waterloo, IA c. Harrisburg, PA d. Louisville, KY
Answer: a. Madison, WI