

VETERINARY

OFFICERS-17

GUIDE 2018

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MULTIPLE CHOICE QUESTION

VETERINARY SCIENCE & ANIMAL HUSBANDRY

1. Two (2) primary gases are produced in the rumen during the condition known as bloat. One of these gases is carbon dioxide. What is the name of the other primary gas produced?

ANS: Methane

2. Your heifer calf weighs 100 pounds at birth and 500 pounds at 200 days of age. Calculate your heifers' average daily gain (ADG).

ANS: 2 pounds per day ADG

3. Which of the following are good sources of rumen degradable or "bypass" protein?

- a) corn gluten meal and blood meal b) molasses and alfalfa meal
c) corn silage and cottonseed hulls

ANS: a) corn gluten meal and blood meal

4. In a dairy cow, which of the following is the name of the opening that the digesta flows through as it enters the omasum?

- a) jejunum b) colon c) ileum d) reticulo-omasal orifice

ANS: d) reticulo-omasal orifice

5. The National Agricultural Statistics Service (NASS) conducts monthly surveys to

Determine dairy cow numbers and milk production. Which of the following branches of the

Federal government is NASS a part of?

- a) U.S. Census Bureau b) Food and Drug Administration (FDA)
c) Internal Revenue Service d) U.S. Department of Agriculture (USDA)

ANS: d) U.S. Department of Agriculture (USDA)

6. Which section of the reproductive tract does the A.I. inseminating rod pass through immediately before the semen is deposited?

ANS: cervix

7. Which of the following is a type of protein found in colostrum that provides passive immunity to the calf?

- a) somatic cells b) immunoglobulins c) erythrocytes

ANS: b) immunoglobulins (also accept antibodies)

3. A deficiency of what trace mineral has been associated with retained placenta in cows and white muscle disease in calves?

ANS: Selenium

4. Your cow is sick and the veterinarian treats her with propylene glycol. What is most likely her problem?

ANS: ketosis

5. What metabolic disorder often occurs when a dairy cow eats too much grain?

ANS: Acidosis

1. What hormone causes milk "let down"?

ANS: oxytocin

2. What is the term used in dairy cattle judging when a cow is close at the hocks?

ANS: cow-hocked

3. Rumensin and Bovatec increase feed efficiency and body weight gain in heifers. These products are also called:

- a) ionophores b) antibodies c) energy supplements

ANS: a) ionophores

4. Dry matter intake by lactating Holstein cows generally averages about:

- a) 25 to 30 lbs. b) 45 to 55 lbs. c) 95 to 100 lbs.

ANS: b) 45 to 55 lbs.

5. The calf develops in what part of a pregnant cow?

a) uterus b) cervix c) ovary

ANS: a) uterus

6. What is the name of the hormone that is produced by the pituitary gland and functions to initiate and maintain lactation?

ANS: Prolactin

7. Where in the animal's body would you find most of the phosphorous reserves?

ANS: Bone

8. What liquid element is used to freeze and store semen straws on the dairy farm?

ANS: Nitrogen

9. What vitamin prevents the disease "rickets" in calves?

ANS: Vitamin D

10. What is the name of the tiny, fingerlike projections that function to absorb nutrients in the small intestine?

ANS: Villi

11. The amount of cheese that can be manufactured from milk is most affected by which component of the milk?

ANS: Protein

12. What is the name of the gland that secretes FSH (Follicle Stimulating Hormone)?

ANS: Pituitary gland

13. What is "dystocia"?

ANS: Difficulty giving birth

14. Which breed normally has the lowest incidence of dystocia?

ANS: Jersey

15. What is the term for the process in which sperm undergo a change in the female reproductive tract, enabling them to penetrate and fertilize the ovum?

ANS: Capacitation

16. How many quarts of colostrum should Holstein calves be fed as soon as possible after birth?

ANS: 4 quarts

17. What is the name for the cluster of milk producing cells in the udder?

ANS: Alveoli

18. What is the term for an excessive accumulation of fluid in the intracellular space of the udder?

ANS: Edema

19. When a cow is frightened, what hormone is immediately released?

ANS: Adrenaline (also accept epinephrine)

20. Which body organ converts propionate to glucose in ruminant animals?

ANS: Liver

1. The recommended maximum level of fat in a lactating cow's diet is?

a) 2-3% b) 3-5% c) 5-7% d) 10-12%.

ANS: c) 5-7%

2. What is the term for a positively charged ion or particle?

ANS: cation

3. What is the primary milk protein?

ANS: casein

1. Class II milk is milk used for:

- a) fluid milk
- b) cottage cheese, ice cream and yogurt
- c) hard cheese and butter

ANS: b) cottage cheese, ice cream and yogurt

2. Which one of the following sections of North Carolina has the fewest number of dairy cows?

- a) Piedmont
- b) Mountains
- c) Coastal Plain

ANS: c) Coastal Plain

3. What is the main reason that a nutritionist would include a "bentonite" additive in a feed ration?

- a) to provide selenium
- b) to bind mycotoxins
- c) to provide energy

ANS: b) to bind mycotoxins

4. Glucose and Galactose combine to make the sugar found in milk. What is the name of this sugar?

ANS: Lactose

5. Which one of the following best describes the term "alveoli" in the udder of a dairy cow?

- a) a hormone
- b) keratin
- c) clusters of milk secreting cells

ANS: c) clusters of milk secreting cells

6. Which ruminant stomach compartment is the largest relative size in a newborn calf?

- a) rumen
- b) reticulum
- c) omasum
- d) abomasum

ANS: d) abomasum

7. In reference to a sire summary, what does the abbreviation PTA stand for?

ANS: predicted transmitting ability

8. Which of the following is the amount of checkoff money that dairy producers pay for each cull dairy cow that is sent to market?

a) nothing b) 15 cents c) 50 cents d) one dollar

ANS: d) one dollar

9. What type of diet is often fed to close-up dry cows to help prevent milk fever?

a) cationic diet b) anionic diet c) alfalfa hay diet

ANS: b) anionic diet

10. What is the number of days in milk for a standard lactation?

ANS: 305 days

11. Which one of the following minerals decreases in the blood when a cow comes down with milk fever?

a) selenium b) zinc c) calcium

ANS: c) calcium

12. What is term for when the abomasum twists out of normal position?

ANS: displaced abomasum (also accept DA)

13. In early lactation, a high producing dairy cow will mobilize her body fat stores as a source of _____.

ANS: Energy

14. On the PDCA Dairy Judging Scorecard, in which category is the withers?

ANS: Dairy Character

15. What term is the period when the calf is developing in it's mother's womb?

a) lactation b) parturition c) gestation

ANS: c) gestation

16. A desirable water temperature for mixing calf milk replacer is approximately:

a) 100 degrees F b) 40 degrees F c) 150 degrees F

ANS: a) 100 degrees F

17. Who is the current Commissioner of Agriculture in North Carolina?

ANS: Steve Troxler

18. About how many gallons of blood must pass through the udder in order for the cow to produce one gallon of milk?

- a) 10 to 15 gallons b) 40 to 50 gallons c) 400 to 500 gallons

ANS: c) 400 to 500 gallons

19. What is the name of the cheese that is light colored, noted for its firm texture, and known for having holes or air pockets throughout?

ANS: Swiss cheese

20. In reference to milk, what do the letters FCM stand for?

ANS: Fat Corrected Milk

1. For dairy cattle, which nutrient is the cheapest, most important and required in the largest quantity?

ANS: Water

2. In reference to the national dairy industry, what does ADSA stand for?

ANS: American Dairy Science Association

3. True or False:

An embryo with two X chromosomes will result in a bull calf.

ANS: False

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ANS: cation

3. What is the primary milk protein?

ANS: casein

. What is a zygote?

ANS: A fertilized egg

2. What is the name of the toxic substance found in frost damaged sorghum?

ANS: Prussic acid

3. True or False

"Gross energy" is determined by bomb calorimetry and is the total amount of energy that a feed contains.

ANS: True

4. True or False

Dairy calves do not need to be fed hay until they are weaned.

ANS: True

5. The X and/or Y chromosome in the cells of an embryo determine what characteristic of the new calf to be born?

ANS: Sex

1. On a Holstein pedigree, what do the letters TPI stand for?

ANS: Type-Production Index

2. On a milking machine, if the milk to rest pulsation ratio is set at 60:40, what percent of the time is the inflation closed?

a) 30% b) 40% c) 50% d) 60%

ANS: b) 40%

3. What do the letters BLUP stand for when talking about genetic evaluations?

ANS: BEST LINEAR UNBIASED PREDICTION

4. Which volatile fatty acid produced in the rumen is a precursor for glucose?

ANS: Propionate

5. What is the term used to describe the physical characteristics and performance of an individual?

ANS: Phenotype

6. When a cow is superovulated and the resulting developing embryos are transferred to unrelated recipient cows, the calves that are born will be:

a) unrelated b) full siblings c) identical

ANS: b) full siblings

7. If a ration contains 51% moisture, what percentage dry matter does it contain?

ANS: 49% dry matter

8. Which hormone is released from the anterior pituitary and stimulates follicular growth?

ANS: FSH or follicle stimulating hormone

9. The most important factor that affects the concentration of protein in a forage is:

a) weed control b) stage of maturity c) amount of lime applied to the field

ANS: b) stage of maturity

10. During fermentation of corn silage in a silo, the pH of the silage:

a) increases b) decreases c) remains the same

ANS: b) decreases

11. Which mineral is associated with the prevention of goiter?

ANS: Iodine

12. Drought-stressed forages, especially following a rain, can be toxic to dairy animals due to high concentrations of:

a) protein b) nitrate c) calcium d) phosphorous

ANS: b) nitrate

13. If a 1500 pound cow is eating an amount of feed dry matter equivalent to 3% of its body weight, how many pounds of feed dry matter is the cow eating?

ANS: 45 pounds

14. What do the letters ppm stand for?

ANS: Parts per million

15. You check the label of a milk replacer and it states that it contains 20% fat. How many pounds of fat will be contained in a 50 pound bag of the milk powder?

ANS: 10 pounds of fat

16. The condition in which a cow comes into heat every few days is called:

a) gestation b) anestrus c) cystic

ANS: c) cystic

17. A cow that was successfully bred and conceived on January 10 would be expected to calve in which month?

a) October b) November c) December

ANS: October

18. Deoxynivalenol (DON) and zearalenone are examples of:

a) ionophores b) mycotoxins c) amino acids

ANS: b) mycotoxins

19. What do you determine when you multiply the percent nitrogen in a feed by the factor 6.25?

ANS: percentage of crude protein in the feed

20. What is the name of the sugar found only in milk?

ANS: Lactose

Bonus Questions Each bonus question is worth 20 points.

1. The disease "Rickets" in calves is due to a deficiency of:

a) Vitamin A b) Vitamin D c) Vitamin E

ANS: b) Vitamin D

2. When a calf is born, the normal delivery position is:

a) front feet first, then the head b) back feet first c) back first

ANS: a) front feet first, then the head

3. The National Dairy Shrine is located in which state?

ANS: Wisconsin

4. What part of the cow's stomach has a lining that looks like a honeycomb and serves to trap foreign objects that are eaten such as wire or nails?

ANS: Reticulum

5. The founder of Hoard's Dairyman magazine was:

a) from North Carolina b) a former governor of Wisconsin

c) a former vice-president of the U.S.

ANS: b) a former governor of Wisconsin

1. Name the hormone produced by the ovary that makes cows come into heat.

ANS: Estrogen

2. What does the term 3X mean in a cow's production record?

ANS: The cow was milked 3 times a day

. Name the four compartments of a dairy cow's stomach.

ANS: Rumen, reticulum, omasum, abomasum

4. What compartment of the cow's stomach functions as a large fermentation vat?

ANS: Rumen

5. What does M.E. stand for in DHIA milk production records?

ANS: Mature equivalent

1. You send a sample of corn silage from your trench silo to the lab for nutrient analysis. The report lists the dry matter of the silage at 34%. How many pounds of dry matter are in one ton (2000 pounds) of the silage?

a) 680 b) 34 c) 340 d) 1000

ANS: a) 680

. What is often found in drought-stressed forages that can be toxic to dairy animals?

a) high levels of carbohydrate b) high levels of nitrates c) high levels of protein

ANS: b) high levels of nitrates

3. The term "effective fiber" is a measure that is used to categorize fiber in terms of its ability to maintain good rumen function. How is the value of effective fiber measured?

a) in terms of protein availability b) in terms of net energy
c) in terms of chewing time in minutes per pound of feed

ANS: c) in terms of chewing time in minutes per pound of feed

4. What type of fiber is indigestible by the cow?

a) Lignin b) hemicellulose c) cellulose

ANS: a) lignin

5. What term describes congestion of the udder due to excessive fluid accumulation?

a) metritis b) parturition c) ketosis d) udder edema

ANS: d) udder edema

6. What is the common name for diarrhea in calves?

ANS: Scours

7. Eighty (80) pounds of whole milk should yield about how many pounds of cheese?

ANS: 8

8. The total ration protein requirement for dry dairy cows is closest to:

a) 6% b) 12% c) 18% d) 24%

ANS: b) 12%

9. Name the structure found on the ovary that is also referred to as a "yellow body":

ANS: Corpus luteum

10. What happens to "bypass protein" in the rumen?

a) it is degraded

b) it is not degraded and escapes the rumen for absorption at the small intestine

c) it is hydrolyzed

d) it becomes soluble

ANS: b) it is not degraded and escapes the rumen for absorption at the small intestine

11. Name the stomach compartment in a dairy cow where the lining is covered with papillae that serve to increase the surface area for absorption of nutrients.

ANS: Rumen

12. "Hardware disease" can occur when a piece of wire or metal that the cow accidentally consumes punctures what part of the ruminant

stomach?

ANS: Reticulum

13. Which of the following is the most costly form of mastitis?
a) acute b) subclinical c) clinical d) chronic

ANS: b) subclinical

14. This mastitis pathogen is a bacteria like most other pathogens, but is also slow- growing, has very high nutrient requirements, and lacks a bacterial cell wall.

a) mycoplasma c) streptococci
b) coliforms d) pneumonia

ANS: a) mycoplasma

15. True or False

It is a good management practice to separate first lactation cows into their own group from older cows in the milking herd.

ANS: True

16. In reference to milk yield, what do the letters FCM stand for?

ANS: Fat-corrected milk

17. Name the 5 major categories on the PDCA Dairy Cow Unified Score Card:

ANS: Frame, Dairy Character, Body Capacity, Feet and Legs, Udder

18. How much water does normal whole milk contain?

a) 67.6% b) 77.6% c) 87.6% d) 97.6%

ANS: c) 87.6%

19. Normally calves being fed milk should receive an amount of milk each day that is this percentage of their body weight:

a) 5 to 6 % b) 8 to 10% c) 14 to 16 % d) 18 to 20%

ANS: b) 8 to 10%

20. In reference to dairy cattle, what does the term "dystocia" mean?

a) the cow is blind b) the cow has laminitis c) the cow has calving difficulty

d) the cow has a "twisted stomach"

ANS: c) the cow has calving difficult

1. When evaluating a sire summary, what do the letters PTA stand for?

ANS: Predicted Transmitting Ability

2. Why would you feed the additive Poloxalene to cows that are grazing alfalfa or clover?

ANS: To prevent bloat

3. What is the name of the foundation that provides funding support for the North Carolina Dairy Youth Program?

ANS: North Carolina Dairy Youth Foundation

4. True or False

The disease cryptosporidiosis in calves can be transmitted to humans.

ANS: True

5. Name the 5 major dairy breeds.

ANS: Holstein, Jersey, Guernsey, Ayrshire, Brown Swiss

1. On the PDCA Dairy Cow Unified Score Card, how many points are assigned to the Frame category?

ANS: 15 points

2. What is the name of the disease in people that is the same as brucellosis in cattle?

ANS: Undulant fever

3. Which breed of dairy cattle generally produces milk with the highest protein content?

ANS: Jersey

4. What is the name of the sugar found in milk?

ANS: Lactose

5. When a sperm cell with a Y chromosome fertilizes an egg, what sex will the offspring be?

ANS: Male

1. Immediately after a calf is born, its navel should be dipped in what solution?

ANS: Tincture of Iodine

2. When you measure the heart girth of a heifer with a special tape, what are you trying to estimate?

ANS: Body weight

3. What is the term for a sterile female born twin to a bull?

ANS: Freemartin

4. What is the type of milking parlor where the cows stand on a rotating platform during milking?

a) herringbone c) side opening

b) parallel d) carousel

ANS: d) carousel

5. What condition in cattle is usually caused by grazing lush alfalfa or clover?

ANS: Bloat

6. Costs vary significantly as young dairy heifers mature. At what stage of growth is the cost per hundred weight most expensive to raise calves?

a) 1,200 to 1,300 pounds c) 300 to 400 pounds

b) 700 to 800 pounds d) 100 to 200 pounds

ANS: d) 100 to 200 pounds

7. What is the name of the highly contagious cattle disease that caused thousands of dairy cattle to be slaughtered in Great Britain recently?

ANS: Foot and Mouth Disease (FMD)

8. Where are the immunoglobulins in colostrum absorbed in a newborn calf?

ANS: Small intestine

9. Well-grown Holstein heifers should be bred at what age?

a) 9 to 11 months b) 13 to 15 months c) 18 to 20 months d) 22 to 24 months

ANS: b) 13 to 15 months

10. What two amino acids are most often considered to be first limiting or co-limiting for milk protein synthesis?

ANS: Lysine and Methionine

11. Name the 3 primary volatile fatty acids found in the rumen:

ANS: Acetic, Propionic, Butyric (also accept acetate, propionate and butyrate)

12. On a feed ration report you see that the copper concentration is listed as 10 ppm.

What does ppm mean?

ANS: Parts per million

13. What do the initials ET stand for on a Holstein pedigree?

ANS: Embryo Transfer

14. Which parent determines the sex of a calf?

ANS: The sire

15. The official placing on a class of cows is 3-1-2-4 with cuts of 2-6-4. Your placing is

3-1-4-2. What is your score?

ANS: 46

16. What two breeds of dairy cattle originated on islands in the English Channel?

ANS: Guernsey and Jersey

17. What hormone is released when a cow is frightened?

a) progesterone b) adrenaline (epinephrine) c) testosterone d) estrogen

ANS: b) adrenaline (epinephrine)

18. On a milking system, what prevents the vacuum from going too high?

ANS: Vacuum regulator or controller (accept regulator or controller)

19. What is the major product of silage fermentation that helps to preserve the silage in the silo?

a) amino acids b) oxygen c) lactic acid d) carbon dioxide

ANS: c) lactic acid

20. When posing a lactating dairy cow in the show ring, the rear leg closest to the judge should be in what position?

ANS: Forward

1. Name the four phases of the estrous cycle.

ANS: proestrous, estrus, metestrus, diestrus

2. If a corn silage sample contains 35% dry matter, what percentage moisture does it contain?

ANS: 65%

3. What is a zygote?

ANS: A fertilized egg

4. What is the name of the toxic substance in frost damaged sorghum?

ANS: Prussic acid

5. True or False

"Gross energy" is determined by bomb calorimetry and is the total amount of energy that a feed contains.

ANS: True

1. What is the name of the substance in a semen tank that is used to freeze semen straws?

a) liquid nitrogen b) liquid oxygen c) liquid hydrogen d) liquid carbon dioxide

ANS: a) liquid nitrogen

2. Of all the costs associated with Mastitis, which has the greatest impact on the farmer?

a) Veterinarian b) Discarded Milk c) Labor d) Reduced Milk Production

ANS: d) reduced milk production

3. Which of the following is the term for a large and complex protein material that is capable of causing disease and that reproduces only inside a host cell?

a) bacteria b) protozoa c) virus d) salmonella

ANS: c) virus

4. What dairy cattle breed originated in Netherlands and Germany then arrived in the US in 1852

- a) Milking Shorthorn b) Holstein c) Jersey d) Brown Swiss

ANS: b) Holstein

5. Which of the following describes "the release of an egg from a follicle"?

- a) parturition b) palpation c) ovulation

ANS: c) ovulation

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1. On a feed ration report, you see the letters ppm. What does ppm stand for?

ANS: parts per million

2. What part of the cow does laminitis effect?

ANS: Hooves (or feet)

3. Carotene is a substance that is orange in color. Which vitamin is carotene the precursor for?

ANS: Vitamin A

4. From which side of the animal should you lead an animal when showing?

ANS: left side

5. What is the proper name for the disease commonly called Hardware Disease?

a) Pododermatitis b) Laminitis c) Acetonemia d) Traumatic gastritis

ANS: d) Traumatic gastritis

6. How many uterine horns are there in the reproductive tract of a dairy cow?

ANS: Two

7. What is the name of the heating process used to kill bacteria in milk?

ANS: Pasteurization

8. What ligament divides the udder into a right and left side and provides the main support for the udder?

ANS: median suspensory ligament

9. What process is used to distribute the fat evenly in the milk?

ANS: Homogenization

10. Which one of the following would be a good choice to provide additional fiber in a dairy ration?

a) corn grain b) barley grain c) soybean meal d) cottonseed hulls

ANS: d) cottonseed hulls

11. Dairy calves typically are weaned at what age?

- a) 2-4 weeks b) 6-8 weeks c) 12-14 weeks d) 18-20 weeks

ANS: b) 6-8 weeks

12. What is the name of the byproduct recovered when cheese is made?

ANS: Whey

13. What hormone is required for the maintenance of pregnancy in a dairy cow?

ANS: progesterone

14. What is the minimum number of daughters that a bull is required to have for a bull proof to be published?

- a) 5 b) 10 c) 15 d) 20

ANS: b) 10

15. Of the following, which is the most important reason that we need to limit the time that a cow spends crowded in the holding area or pen on her way into the milking parlor?

- a) to reduce heat stress b) to reduce foot rot c) to reduce metritis

ANS: a) to reduce heat stress

16. What do the initials U.S.D.A stand for?

ANS: United States Department of Agriculture

17. When judging dairy cows, what is the term for an udder that hangs below a cow's hocks:

ANS: pendulous

18. Which one of the following is the percentage of water contained in normal milk?

- a) 97.5% b) 87.5% c) 77.5% d) 67.5%

ANS: b) 87.5%

19. What does "TMR" stand for?

ANS: Total Mixed Ration

20. What are you trying to estimate when you measure the heart girth of a dairy heifer with a special tape?

ANS: body weight

1. What percent of feed refusal is recommended to maximize feed intake in lactating cows?

ANS: 5 to 10%

2. Why do dairy farmers often place a KAMAR detector on the rump of their cows?

ANS: To help detect heat or estrus

3. In a 4-H dairy cattle judging contest, how many minutes are allowed for you to present a set of oral reasons?

ANS: 2 minutes

1. Which is not a part of the cow's small intestine?

a) duodenum b) ileum c) jejunum d) colon

ANS: d) colon

2. What is a cow's natural buffer?

ANS: Saliva

3. Which of the following minerals provided in excess during the dry period may result in milk fever?

a) sodium b) calcium c) selenium

ANS: b) calcium

4. What is the definition of “days open” on a DHIA report?

- a) number of days in lactation
- b) number of days from calving to conception
- c) number of days dry

ANS: b) number of days from calving to conception

5. What does the abbreviation BMP stands for in regards to the planning of a farm?

- a) Best Method Program
- b) Best Management Practices
- c) Best Methods of Prevention
- d) Best Management Plans

ANS: b) Best Management Practices

1. Which one of the following can be used on the farm to measure the quality of colostrum?

- a) pH meter
- b) voltmeter
- c) colostrometer
- d) pasteurizer

ANS: c) colostrometer

2. Information about which ~~side~~ of the family is shown on the bottom half of the pedigree?

ANS: Maternal side (dam or mother's ancestry)

3. Which of the following are classified as ionophores?

- a) calcium and phosphorous
- b) Rumensin and Bovatec
- c) magnesium oxide and sodium bicarbonate
- d) choline and niacin

ANS: b) Rumensin and Bovatec

4. What percent of heifers born twin to a bull are sterile?

- a) 100%
- b) 90%
- c) 75%
- d) 60%

ANS: b) 90%

5. There are 9 kilocalories of energy provided in one gram of:

- a) protein
- b) carbohydrate
- c) fat
- d) water

ANS: c) fat

6. What does the term “3X” in a dairy cow's production records stand for?

ANS: the cow is milked 3 times each day

7. Typical milking unit inflations should be replaced after approximately how many milkings?

a) 100 b) 500 c) 800 d) 1200

ANS: d) 1200

8. What is the CMT test used for?

ANS: to detect mastitis

9. What is the standardized lactation length on DHIA records?

a) 150 days b) 305 days c) 280 days d) 405 days

ANS: b) 305 days

10. What is the name for the tube that connects the mouth to the rumen?

ANS: Esophagus

11. What is another name for a calf's father?

a) dam b) sire c) progeny d) offspring

ANS: b) sire

12. What does “RUP” stand for in reference to dairy cattle nutrition?

ANS: rumen undegradable protein

13. Adding which acid to a TMR will slow down the heating process while retarding the growth of yeast and molds?

a) Buteric b) Acetic d) Propionic

ANS: d) Propionic

14. What is the measure of how well a cow turns feed into milk?

- a) average daily gain b) feed efficiency c) fat-corrected milk

ANS: b) feed efficiency

15. What is the name of the first milk produced by the cow right after calving that contains immunoglobulins?

ANS: colostrum

16. What is the largest operating expense on most dairy farms?

- a) vet bill b) feed cost c) labor cost

ANS: b) feed cost

17. Who was responsible for developing the butterfat test that was the basis for DHIA testing?

ANS: S. M. Babcock

18. Somatic cells in milk are a more common name for which immune system cells?

ANS: Leukocytes or white blood cells

19. Which of the following is the most costly form of mastitis?

- a) subclinical b) acute c) clinical d) flaky

ANS: a) subclinical

20. What is the name of the blister-like structure on the ovary that contains the egg before ovulation?

- a) cervix b) uterus c) follicle

ANS: c) follicle

1. In making cheese, milk is divided into solids and liquids. What are these two

fractions called?

ANS: Curds and whey

2. In reference to the dairy industry, what does ADSA stand for?

ANS: American Dairy Science Association

3. As of 2015, there are approximately how many dairy cows in North Carolina?

a) 36,000 b) 47,000 c) 63,000 d) 72,000

ANS: b) 47,000

1. Rennet is the name of the enzyme that is added to milk to make what dairy product?

ANS: Cheese

2. How many kilocalories are contained in one gram of fat?

a) 3 b) 6 c) 9 d) 12

ANS: c) 9

3. What is the technical term for the class of chemicals used to kill internal parasites in cattle?

ANS: Anthelmintic (also accept dewormers)

4. Which breed organization sponsors the “Pot-of- Gold” heifer sale and production contest?

ANS: Jersey

5. What is the term used to describe “a difficult or abnormal calving”?

ANS: dystocia

1. Which state leads in the production of butter?

ANS: Wisconsin

2. Protocols such as Ov-Synch, CIDR-PG, and 2-shot PG are used in cows primarily for what reason?

a) mastitis treatment b) heat detection c) estrus synchronization

ANS: c) estrus synchronization

3. If a corn silage sample contains 68% moisture, what percentage dry matter is it?

ANS: 32% dry matter

4. Bovine spongiform encephalopathy or BSE is more commonly known as what disease?

ANS: Mad Cow Disease

5. How long is the life cycle for a fly, from egg to adult?

a) 100 days b) 10 days c) 1 day

ANS: b) 10 days

6. At what stage of lactation can body condition be most efficiently restored in dairy cows?

a. during the dry period b. in early lactation c. in late lactation

ANS: c. in late lactation

7. What is a common disease in dairy animals caused by *Staph. aureus*, *Strep. uberis*, and *Klebsiella*?

ANS: Mastitis

8. Which one of the following is a water-soluble vitamin?

a) Vitamin K b) Vitamin A c) Vitamin E d) Vitamin B₃

ANS: d) Vitamin B₃

9. What is the name that veterinarians call an infected uterus in a dairy cow?

a. Mastitis b. Metritis c. Parturition

ANS: b. Metritis

10. Which of the following is a warm season or C4 grass?

a) fescue b) alfalfa c) bermuda d) orchardgrass

ANS: c) Bermuda

11. In reference to milk production records, what does “ME” stand for?

ANS: Mature Equivalent

12. What term refers to the act of giving birth?

ANS: parturition

13. How many points are allotted for “Udder” on the PDCA Dairy Cow Unified Score Card?

ANS: 40 points

14. At approximately what age (in weeks) does a dairy calf begin to chew its cud?

a) 2-3 weeks b) 6-8 weeks c) 10-12 weeks d) 12-15 weeks

ANS: a) 2-3 weeks

15. What is the name of the hormone that causes milk “let down”?

ANS: oxytocin

16. How many animals are in a class in a 4-H Dairy Judging Contest?

a) 8 b) 6 c) 3 d) 4

ANS: d) 4

17. Which of the following feeds contains the most protein?

a) corn gluten feed b) corn gluten meal c) corn grain

ANS: b) corn gluten meal

18. What breed of dairy cattle originated in Scotland?

ANS: Ayrshire

19. What month is National Dairy Month?

a) May b) June c) July d) April

ANS: b) June

20. Many organisms are disease causing in our animals, what type of organisms cause pneumonia?

a) Bacteria b) Molds c) Protozoa d) Yeasts

ANS: c) Protozoa

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1. The fertile life of an ovum after release it has been released is?

- a) 2-6 hours b) 6-12 hours c) 12-181hours d) 18-20 hours

ANS: b) 6-12 hours

2. *Mycobacterium paratuberculosis* is the name of the organism responsible for which of the following diseases?

- a) Johne's disease b) Foot and Mouth disease
c) Mad cow disease d) Bang's disease

ANS: a) Johne's disease

3. What term describes semen that is thawed and then subjected to cool temperatures before reaching the cow?

ANS: cold shocked

1. What is determined by multiplying the nitrogen content of a feed by 6.25?

- a) crude protein b) carbohydrate content c) energy level

ANS: a) crude protein

2. Dairy farmers calculate IOFC to help evaluate their profitability. What does the abbreviation IOFC stand for?

ANS: Income over feed cost(s)

3. In a lactating dairy cow, which one of the following is the hormone released when a cow is frightened and is responsible for a cow not having milk letdown?

- a) adrenaline (or epinephrine) b) oxytocin c) progesterone

ANS: a) adrenaline (or epinephrine)

4. What is the average duration of standing heat in a dairy cow?

- a) 2-4 hours b) 12-18 hours c) 18-24 hours d) 24-36

hours

ANS: b) 12-18 hours

5. Cellulose, hemicellulose and lignin are the components of:

- a) acid detergent fiber (ADF)
- b) crude protein
- c) neutral detergent fiber (NDF)
- d) rumen-undegradable protein (RUP)

ANS: c) neutral detergent fiber (NDF)

1. What is the primary sugar found in milk?

- a) lactose
- b) cellulose
- c) sucrose

ANS: a) lactose

2. How many pairs of chromosomes do dairy cattle have?

ANS: 30

3. In reference to milk quality, what is the maximum legal limit of somatic cells concentration (cells/ml) that milk can contain?

ANS: 750,000 cells/ml

4. The National Dairy Shrine Museum is located in which of the following locations?

- a) Madison, Wisconsin
- b) Fort Atkinson, Wisconsin
- c) Louisville, Kentucky
- d) Harrisburg, Pennsylvania

ANS: b) Fort Atkinson, Wisconsin

5. How many upper incisors does a cow have?

- a. Two
- b. Four
- c. None

ANS: c. None

6. The Guernsey breed originated on a British Channel Island. What other dairy breed originated on a Channel Island?

ANS: Jersey

7. Which of the following is the normal delivery position when a calf is born?

- a) back feet first b) shoulders first c) front feet first and then the head

ANS: c) front feet first and then the head

8. The number of dairy cows in the US peaked in what year?

- a) 1885 b) 1945 c) 1985 d) 2010

ANS: b) 1945

9. What is the name of the small projections that line the wall of the small intestine and function to absorb nutrients?

ANS: Villi

10. What happens to the body weight of an early lactation dairy cow when she enters the negative energy balance phase of the lactation cycle?

- a) it increases b) it decreases c) it stays the same

ANS: b) it decreases

11. What is the name used for a diagram of a dairy animal's ancestors?

- a) sire summary b) pedigree c) PC-DART

ANS: b) pedigree

12. You purchase one ton (2000 pounds) of dairy feed that contains 20% protein. How many pounds of protein did you buy?

- a) 200 pounds b) 400 pounds c) 600 pounds d) 800
pounds

ANS: b) 400 pounds

13. Which one of the following is the greatest cause of a displaced abomasum?

- a) excess protein b) genetic defects c) low fiber rations

ANS: c) low fiber rations

14. Anaerobic manure digesters convert what gas into electricity?

ANS: Methane

15. Which class is Grade A milk that is used for fluid consumption assigned?

- a) Class I b) Class II c) Class III d) Class IV

ANS: a) Class I

16. What is the minimum amount of silage that should be removed from the exposed surface of a trench silo each day to prevent spoilage?

- a) 6 inches b) 12 inches c) 24 inches d) 36 inches

ANS: a) 6 inches

17. The time period after calving when you choose not to breed a cow is abbreviated VWP. What does VWP stand for?

ANS: Voluntary Waiting Period

18. What is the term for a period of increased growth rate in heifers that follows a growth restriction earlier in the heifer's life?

ANS: compensatory growth (or compensatory gain)

19. The process of flushing fertilized eggs from donor cows and implanting them in recipient cows is called:

- a) artificial insemination b) gestation c) embryo transfer

ANS: c) embryo transfer

20. When an injection is given subcutaneously, where is the material deposited?

ANS: Just under the skin

1. Dry matter intake by lactating Holstein cows generally averages about:

- a) 20 to 30 lbs. b) 45 to 50 lbs. c) 90 to 100 lbs.

ANS: b) 45 to 50 lbs.

2. What term, common to ruminants, describes a bolus of regurgitated food that is chewed and re-swallowed?

ANS: cud

3. A young calf needs energy to maintain body functions under normal conditions, which ranges from 50 degrees F to 78 degrees F. What is this temperature range referred to as?

- a) comfort range b) heat index c) thermal-neutral zone

ANS: c) thermal-neutral zone

1. What is the average duration of standing heat in a dairy cow?

- a) 6-12 hours b) 12-18 hours
c) 18-24 hours d) 24-36 hours

ANS: b) 12-18 hours

2. When formulating rations, nitrogen is a major consideration for dairy nutritionists. Which one of the following is the primary source of nitrogen that is added to the ration?

- a) water b) crude protein c) limestone d) supplemental fat

ANS: b) crude protein

3. Which breed of dairy cow produces milk that has a golden color?

ANS: Guernsey

4. Which of the following is the term for a completely hydrogenated fat that contains no double bonds?

- a) unsaturated fat b) saturated fat c) vegetable oil

ANS: b) saturated fat

5. In the reproductive system of a dairy cow, progesterone is the name of the hormone that is secreted by the structure often called a "yellow body". Which of the following is the proper name for this "yellow body"?

- a) cervix b) ovary c) follicle d) corpus luteum

ANS: d) corpus luteum

1. What percentage of normal whole milk is water?

- a) 97.5% b) 87.5% c) 79.5%

ANS: b) 87.5%

2. Lag time or the time from stripping teats to putting on the units is the most important part of the milking routine. The goal is to get the teat cups on in how many seconds after stripping?

- a) 1 to 1 ½ minutes b) 3 to 4 minutes c) 5 to 6 minutes

ANS: a) 1 to 1 ½ minutes

3. You notice that the milk somatic cell counts are increasing in your herd. What disease problem does this indicate?

ANS: mastitis

4. In which U.S. state was this country's first BSE case reported?

- a) Vermont b) Iowa c) Washington d) California

ANS: c) Washington

5. As corn silage ferments properly in the silo, what happens to the pH of the silage?

- a) it increases b) it decreases c) it does not change

ANS: b) it decreases

a) bellowing b) she won't come in the milking parlor c) she stands to be mounted

ANS: c) she stands to be mounted

14. Which of the following is a warm season or C4 grass?

a) fescue b) alfalfa c) bermuda d) orchardgrass

ANS: c) bermuda

15. When comparing bulls for artificial insemination, what does ERCR stand for:

ANS: Estimated Relative Conception Rate

16. What does anestrus mean?

a) the cow is in heat b) sterility c) failure to show signs of heat

ANS: c) failure to show signs of heat

17. Gossypol is a toxic pigment that can be found in which one of the following

a) corn grain b) alfalfa hay c) whole cottonseed
d) wheat silage

ANS: c) whole cottonseed

18. What is the term for the disease "brucellosis" when it affects humans?

ANS: undulant fever

19. Which of the following dry period lengths will maximize milk production in the following lactation?

a) 90 days b) 60 days c) 30 days d) 10 days

ANS: b) 60 days

20. What is the name of the first milk produced by the cow immediately after calving that contains immunoglobulins (antibodies)?

ANS: Colostrum

1. On average, cows have a flight zone of how many feet?

- a) 1 foot b) 5 feet c) 12 feet d) 20 feet

ANS: b) 5 feet

2. On a dairy ration printout, which of the following refers to the energy level in the ration?

- a) CP b) NE_L and TDN c) RUP

ANS: b) NE_L and TDN

3. What is a fat source called that is either chemically treated or physically encapsulated so that it is not degraded in the rumen, but is still available for digestion in the small intestine?

ANS: Rumen-protected or rumen-inert

1. In young ruminants, what is the name of the anatomical structure that sends milk from the esophagus to the abomasum?

ANS: Esophageal groove

2. If you have mainly x-bearing sperm cell in a semen fraction, what sex of calf are you trying to get?

ANS: you are trying to get a female (heifer) calf

3. Write this down. How many pounds of protein are in one ton (2000 pounds) of dairy feed that contains 18% protein?

- a) 200 pounds b) 360 pounds c) 18 pounds d) 218 pounds

ANS: b) 360 pounds

4. Which of the following is NOT a sex limited trait?

- a) milk production b) udder c) feet and legs

ANS: c) feet and legs

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

- a) Animal Improvement Programs Laboratory (AIPL)
- b) Dairy Business Association (DBA)
- c) Dairy Herd Improvement Association (DHIA)
- d) World Dairy Expo (WDE)

ANS: a) Animal Improvement Programs Laboratory (AIPL)

1. It takes approximately how many pounds of milk to make one (1) pound of cheese:

ANS: 10 pounds of milk

2. Which class of milk describes that used for drinking (fluid milk)?

ANS: Class I

3. Which compartment of the ruminant stomach functions to trap foreign objects such as wire or nails that may be eaten?

ANS: reticulum

4. What do the letters CIP stand for when referring to equipment sanitation?

ANS: Clean-in-place

5. What breed of dairy cow originated in Scotland?

ANS: Ayrshire

6. What type of bond joins amino acids together to form protein?

- a) peptide bond
- b) glycogen bond
- c) epoxy bond

ANS: a) peptide bond

7. What is the source of mycotoxins in feed?

- a) bacteria
- b) molds
- c) carbohydrates

ANS: b) molds

8. Holstein calves should first be fed one gallon of colostrum:

- a) at 3 days of age b) as soon as possible after birth c) by one week of age

ANS: b) as soon as possible after birth

9. Parallel, rotary and herringbone are types of:

ANS: Milking Parlors

10. What section of North Carolina has the largest number of dairy cows?

- a) Coastal Plain b) Piedmont c) Mountains

ANS: b) Piedmont

11. During nutrient metabolism, what is the term for a protein that acts as a catalyst in starting or speeding up certain chemical reactions?

ANS: enzyme

12. What is the approximate percentage of solids in normal milk?

- a) 5% b) 13% c) 20% d) 25%

ANS: b) 13%

13. An animal that is deficient in this vitamin has blindness, is weak and has reproductive problems.

ANS: Vitamin A

14. Which one of the following, when fed in excess, can cause overconditioned (fat) heifers?

- a) protein b) fiber c) energy d) calcium

ANS: c) energy

15. Which section of the reproductive tract does the A.I. inseminating rod pass through immediately before the semen is deposited?

- a) uterine horn b) cervix c) rectum

ANS: b) cervix

16. Which of the following is a type of protein found in colostrum that provides passive immunity to the calf?

- a) somatic cells b) immunoglobulins c) erythrocytes

ANS: b) immunoglobulins

17. Which of the following causes ringworm on dairy cattle?

- a) fungus b) virus c) bacteria

ANS: a) fungus

18. How many cups of milk does USDA's MyPyramid recommend consuming every day?

- a) 2-3 cups b) 5-6 cups c) 8-9 cups

ANS: a) 2-3 cups

19. What is the term used in dairy cattle judging when a cow is ~~close~~ at the hocks?

- a) single-hocked b) sickle-hocked c) cow-hocked d) post-legged

ANS: c) cow-hocked

20. Your veterinarian says that a cow is in the first trimester. What does that mean?

ANS: first 3 months of pregnancy

1. In reference to veterinarians, what do the letters AABP stand for?

ANS: American Association of Bovine Practitioners

2. In dairy cattle judging, what are you referring to when you describe this part as having a higher and wider attachment?

- a) fore udder b) rear udder c) tail head d) brisket

ANS: b) rear udder

3. The calf develops in what part of a pregnant cow?

a) uterus b) cervix c) ovary

ANS: a) uterus

1. Two (2) primary gases are produced in the rumen during the condition known as bloat. One of these gases is carbon dioxide. What is the name of the other primary gas produced?

ANS: Methane

2. Your heifer calf weighs 100 pounds at birth and 500 pounds at 200 days of age. Calculate your heifers' average daily gain (ADG).

ANS: 2 pounds per day ADG

3. Which of the following are good sources of rumen undegradable or "bypass" protein?

a) corn gluten meal and blood meal b) molasses and alfalfa meal
c) corn silage and cottonseed hulls

ANS: a) corn gluten meal and blood meal

4. In a dairy cow, which of the following is the name of the opening that the digesta flows through as it enters the omasum?

a) jejunum b) colon c) ileum d) reticulo-omasal orifice

ANS: d) reticulo-omasal orifice

5. The National Agricultural Statistics Service (NASS) conducts monthly surveys to determine dairy cow numbers and milk production. Which of the following branches of the Federal government is NASS a part of?

a) U.S. Census Bureau b) Food and Drug Administration (FDA)

c) Internal Revenue Service

d) U.S. Department of Agriculture (USDA)

ANS: d) U.S. Department of Agriculture (USDA)

1. Class II milk is milk used for:

a) fluid milk

b) cottage cheese, ice cream and yogurt

c) hard cheese and butter

ANS: b) cottage cheese, ice cream and yogurt

2. Which one of the following sections of North Carolina has the fewest number of dairy cows?

a) Piedmont

b) Mountains

c) Coastal Plain

ANS: c) Coastal Plain

3. What is the main reason that a nutritionist would include a "bentonite" additive in a feed ration?

a) to provide selenium
energy

b) to bind mycotoxins

c) to provide

ANS: b) to bind mycotoxins

4. Glucose and Galactose combine to make the sugar found in milk. What is the name of this sugar?

ANS: Lactose

5. Which one of the following best describes the term "alveoli" in the udder of a dairy cow?

a) a hormone

b) keratin

c) clusters of milk secreting cells

ANS: c) clusters of milk secreting cells

6. Which ruminant stomach compartment is the largest relative size in a newborn calf?

a) rumen

b) reticulum

c) omasum

d) abomasum

ANS: d) abomasum

7. In reference to a sire summary, what does the abbreviation PTA stand for?

ANS: predicted transmitting ability

8. Which of the following is the amount of checkoff money that dairy producers pay for each cull dairy cow that is sent to market?

a) nothing b) 15 cents c) 50 cents d) one dollar

ANS: d) one dollar

9. What type of diet is often fed to close-up dry cows to help prevent milk fever?

a) cationic diet b) anionic diet c) alfalfa hay diet

ANS: b) anionic diet

10. What is the number of days in milk for a standard lactation?

ANS: 305 days

11. Which one of the following minerals decreases in the blood when a cow comes down with milk fever?

a) selenium b) zinc c) calcium

ANS: c) calcium

12. What is term for when the abomasum twists out of normal position?

ANS: displaced abomasum (also accept DA)

13. In early lactation, a high producing dairy cow will mobilize her body fat stores as a source of _____.

ANS: Energy

14. On the PDCA Dairy Judging Scorecard, in which category is the withers?

ANS: Dairy Character

15. What term is the period when the calf is developing in it's mother's womb?

a) lactation b) parturition c) gestation

ANS: c) gestation

16. A desirable water temperature for mixing calf milk replacer is approximately:

- a) 100 degrees F b) 40 degrees F c) 150 degrees F

ANS: a) 100 degrees F

17. Who is the current Commissioner of Agriculture in North Carolina?

ANS: Steve Troxler

18. About how many gallons of blood must pass through the udder in order for the cow to produce one gallon of milk?

- a) 10 to 15 gallons b) 40 to 50 gallons c) 400 to 500 gallons

ANS: c) 400 to 500 gallons

19. What is the name of the cheese that is light colored, noted for its firm texture, and known for having holes or air pockets throughout?

ANS: Swiss cheese

20. In reference to milk, what do the letters FCM stand for?

ANS: Fat Corrected Milk

1. For dairy cattle, which nutrient is the cheapest, most important and required in the largest quantity?

ANS: Water

2. In reference to the national dairy industry, what does ADSA stand for?

ANS: American Dairy Science Association

3. True or False:

An embryo with two X chromosomes will result in a bull calf.

ANS: False

1. Rennet is the name of the enzyme that is added to milk to make what dairy product?

ANS: Cheese

2. How many kilocalories are contained in one gram of fat?

- a) 3 b) 6 c) 9 d) 12

ANS: c) 9

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Vitamin B₃

ANS: d) Vitamin B₃

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ANS: oxytocin

16. How many animals are in a class in a 4-H Dairy Judging Contest?

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ANS: d) 4

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ANS: b) corn gluten meal

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ANS: b) June

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c) Mad cow disease d) Bang's disease

ANS: a) Johne's disease

3. What term describes semen that is thawed and then subjected to cool temperatures before reaching the cow?

ANS: cold shocked

1. To maintain profit margins, a dairy farmer should be monitoring and making decisions based on the herd's IOFC. What do the initials IOFC stand for?

ANS: Income Over Feed Costs

2. In humans, what is caused by a lack of the enzyme lactase in the small intestine?

ANS: Lactose intolerance

3. The protein percentage of first milking colostrum is approximately:

- a) 1/2 that found in normal whole milk
b) two times that found in normal whole milk
c) 5 times that found in normal whole milk

ANS: c) 5 times that found in normal whole milk

3. How many years does it take for a conventional dairy farm to transition to certified organic?

ANS: 3 years

4. Which of the following is the term for the amount of heat required to raise

the temperature of one gram of water from 14.5 degrees C to 15.5 degrees C?

- a) TDN b) NE c) calorie d) heat increment

ANS: c) calorie

5. Supernumerary teats in dairy cattle:

- a). help to increase milk production b). are extra teats that are nonfunctional
c) means that a teat is infected with mastitis

ANS: b). are extra teats that are nonfunctional

Phase C 20 Questions Correct answers are worth 15 points each.

1. In embryo transfer, what term describes the animal that receives a fertilized egg from a donor?

ANS: recipient

2. Leukocytes are also called:

- a) red blood cells b) white blood cells c) triglycerides

ANS: b) white blood cells

3. In what state in the national office of the American Jersey Cattle Association located?

ANS: Ohio

4. Which one of the following would be the least desirable feed for the week old calf?

- a) calf starter b) whole milk c) milk replacer d) corn silage

ANS: d) corn silage

5. What is the name of the mycotoxin, sometimes found in corn, that is of concern because it is carcinogenic and has the possibility of contaminating the human food supply?

ANS: Aflatoxin

6. Write this down: Calculate the pounds of dry matter in one ton of corn silage that contains 35% dry matter:

ANS: 700 pounds of dry matter

Calculation: 2000 pounds of silage times 35% = 700 pounds

7. What is the common name for infectious keratoconjunctivitis?

ANS: pinkeye

8. How many double bonds are found in a completely hydrogenated saturated fat?

ANS: None

9. In addition to milk and water, a calf with scours should be supplemented with what oral treatment to prevent dehydration?

ANS: electrolytes

10. What is casein?

ANS: the primary protein found in milk

11. Which one of the following is the term for the sum total of all an individual organism's genes?

a) organelle b) genome c) chromosome

ANS: b) genome

12. During which season is milk in the greatest demand?

ANS: Fall

13. What is the name of the process where legume plants like alfalfa and clover convert atmospheric nitrogen into nitrogenous compounds that are useful to the plants?

ANS: Nitrogen fixation

14. What is the term for "an inflammation of the lining of the uterus"?

ANS: endometritis

15. What is the name of the bacteria that causes the disease known as "Circling Disease" in cattle?

ANS: Listeria

16. How many points are allotted for Rear Feet and Legs on the new PDCA Dairy Cow Unified Score Card?

ANS: 20

17. Which dairy breed has the most registered animals in the United States?

ANS: Holstein

18. What is the term that refers to practices that prevent the introduction or spread of disease on the farm?

ANS: Biosecurity

19. In dairy cattle judging, which of the following is not part of the topline?

a) loin b) chine c) thurl

ANS: c) thurl

20. Which of the following is not a primary organism associated with mastitis:

a) Staphylococcus aureus b) Streptococcus agalactia
Streptococcus uberous c)
d) Brucella abortus

ANS: d) Brucella abortus

1. If refrigerated properly, pasteurized and homogenized milk remains fresh for how many days after the expiration date?

a) 2 to 3 days b) 4 to 5 days c) 7 to 10 days d) 12 to 14 days

ANS: c) 7 to 10 days

2. Corn distiller's grains is high in this amino acid that is essential for milk production:

a) lysine b) tryptophan c) arginine d) methionine

ANS: d) methionine

3. Which one of the following countries has reported the most cases of BSE since 2003?

- a) Canada b) United Kingdom c) Japan d) United States

ANS: b) United Kingdom

1. What term is defined as the study of nucleotide sequences in the chromosomes of an animal to determine its genetic potential?

- a) geneology b) genomics c) endocrinology d) metabolics

ANS: b) genomics

2. In reference to milk processing, what is the "make allowance"?

- a) income over feed costs b) somatic cell counts
c) the cost of turning milk into cheese d) amount of waste milk from treated cows

ANS: c) the cost of turning milk into cheese

3. Which one of the following is often responsible for a low milk fat test?

- a) feeding hay b) feeding cottonseed hulls c) overfeeding crude protein
d) low level of "effective fiber" in the ration

ANS: d) low level of "effective fiber" in the ration

4. Tarsal hygroma is the medical name for what common cow ailment?

- a) acidosis b) dehydration c) metritis d) swollen hock

ANS: d) swollen hock

5. Which one of the following best describes the lining of the rumen?

- a) honeycomb b) covered with papillae for nutrient absorption
c) a mucous covered lining to protect it from the hydrochloric acid that is secreted

ANS: b) covered with papillae for nutrient absorption

team will forfeit points.

1. What hormone initiates and maintains lactation?

ANS: Prolactin

2. At the end of a Holstein animal registration name, what do the letters E-T stand for?

ANS: Embryo Transfer

3. Dairy cattle are most comfortable within which of the following temperature ranges?

a) 50 to 55 degrees F b) 70 to 75 degrees F c) 30 to 35 degrees F

ANS: a) 50 to 55 degrees F

4. Which of the following is the term for a large and complex protein material that is

~~capable of causing disease and that reproduces only inside a host cell?~~

a) Bacteria b) Protozoa c) Virus d) Salmonella

ANS: c) Virus

5. What term describes the space that an animal considers its area of safety?

ANS: flight zone

6. A deficiency of Vitamin E in the cow's diet can cause an off-flavor to develop in milk. What is the name of this off-flavor?

ANS: Oxidized flavor

7. What is the common name for the metabolic disorder "parturient paresis"?

ANS: Milk fever (or hypocalcemia)

8. What is the name of the contractile tissue that, when stimulated by oxytocin, forces milk out of the alveoli in the mammary gland?

ANS: Myoepithelium (also accept myoepithelial cells)

9. If the milking machine milk to rest pulsation ratio is set at 55:45, what percent of the time is the inflation open?

ANS: 55%

10. In the last few years, which one of the following sections of the U.S. has seen the greatest percentage decline in numbers of dairy farms?

a) Northeast b) Southeast c) Southwest d)
West

ANS: b) Southeast

11. What is the term for the fetal membrane, which surrounds the developing calf?

ANS: Amnion

12. Carbon, hydrogen and _____ are the three basic elements contained in carbohydrates.

ANS: oxygen

13. In reference to dairy cattle reproduction, what is the term for a "fertilized egg"?

ANS: zygote

14. What is the name of the category on the updated PDCA Dairy Cow Unified Scorecard that replaced body capacity and dairy character?

ANS: Dairy Strength

15. What are the two most limiting amino acids for milk production?

ANS: methionine and lysine

16. When corn silage ferments properly, what happens to the pH?

ANS: it decreases

17. When comparing bulls for artificial insemination, what does “ERCR” stand for?

ANS: Estimated Relative Conception Rate

18. What does the enzyme cellulase break down in the dairy cow’s digestive system?

ANS: cellulose

19. Which of the following is a fat soluble vitamin?

a) Vitamin D b) Vitamin B12 c) Niacin d) Vitamin C

ANS: a) Vitamin D

20. Regarding energy metabolism in an early lactation dairy cow, what is the term for when she is losing body weight?

ANS: Negative energy balance

1. Dairy cattle are most comfortable when the environmental temperature is within a certain range. What is this temperature range called for dairy cattle?

a) temperature-humidity index b) thermo-neutral zone c) *in vitro* thermal range

ANS: b) thermo-neutral zone

2. What is the term used to describe a group of dairy producers such as Maryland-Virginia Milk Producers who join together to market their milk?

ANS: a Cooperative

3. What is the technical term for the class of chemicals used to kill internal parasites in cattle?

ANS: Anthelmintics (also accept dewormers)

1. Acid-detergent fiber (ADF) in triticale increases as the plant matures. However, what happens to the neutral-detergent fiber (NDF) content of triticale as it matures in the field?

ANS: NDF content increases

2. Which compartment of the ruminant stomach has a lining that looks like a honeycomb and functions to trap wire, nails or other objects the cow may eat?

ANS: Reticulum

3. Which of the following is the main reason for not feeding excessive protein in the ration?

a) nitrogen toxicity b) protein toxicity c) it is expensive and wasteful

ANS: c) it is expensive and wasteful

4. When a calf dies on the farm, veterinarians often conduct a postmortem exam to find out the cause of death. What is another name for this postmortem exam?

ANS: necropsy

5. Who is considered to be the father of modern genetics?

a) Louis Pasteur b) Gregor Mendel c) Gustav DeLaval d) Marie Curie

ANS: b) Gregor Mendel

1. What disease in calves that affects their muscles can be caused by a shortage of Vitamin E and Selenium?

ANS: White Muscle Disease

2. What are the genes called that occupy corresponding loci in homologous chromosomes but affect the same character in different ways?

ANS: alleles

3. What waxy substance found in a cow's teat provides a barrier to bacteria?

ANS: Keratin

4. During heat stress, which one of the following times is closest to when a typical cow's internal body temperature peaks?

a) 11:30 p.m. b) 11:30 a.m. c) 7:30 p.m. d) 7:30 a.m.

ANS: a) 11:30 p.m.

5. Why is Poloxalene often added to rations when cows are grazing alfalfa or clover?

ANS: to prevent bloat

6. What hormone is secreted by the corpus luteum?

ANS: progesterone

7. In the dairy cow, what volatile fatty acid is the precursor for glucose?

ANS: Propionate

8. In reference to milk quality testing, what does P.I. stand for?

ANS: Preliminary Incubation

9. You purchase 100 pounds of 8-12-10 fertilizer. What does the number 10 mean?

ANS: the fertilizer contains 10 percent potash or potassium

10. When you "churn" cream, what product does it turn into?

ANS: Butter

11. What metabolic disease that occurs in early lactation dairy cows is often treated with propylene glycol?

ANS: ketosis

12. From egg to adult, how many days are in the fly life cycle?

ANS: 10 days

13. What is the predominant acid in anaerobically fermented corn silage?

ANS: lactic acid (also accept lactate)

14. What is the term for a farm's unique identification number that is part of the National Animal Identification System?

ANS: Premises I.D.

15. What is the name of the virus that causes small blisters on the teats followed by sores and scabs and is spread by the milker?

- a) Staph aureus b) cow pox c) mastitis d) metritis

ANS: b) cow pox

16. What is the current U.S. legal limit for somatic cells in milk?

ANS: 750,000 cells/ml

17. A.I. organizations package semen in straws with each straw containing approximately:

- a) 1000 to 3000 sperm cells b) 10 thousand to 30 thousand sperm cells
c) 10 million to 30 million sperm cells

ANS: c) 10 million to 30 million sperm cells

18. During the digestive process, what enzyme functions to break down fat (or lipids)?

ANS: lipase

19. What is the predominant class of immunoglobulins found in bovine colostrum?

- a) IgA b) IgG c) IgM d) IgF

ANS: b) IgG

20. A deficiency of what mineral has been associated with increased retained placenta in cows and white muscle disease in calves?

ANS: selenium

1. Which of the following is the main advantage to using a “Brown Midrib” variety for corn silage?

- a) higher silage yields b) higher lignin content c) lower lignin content and greater fiber digestibility

ANS: c) lower lignin content and greater fiber digestibility

2. Where is the streak canal located on a cow?

ANS: in the teat

3. Which one of the following accounts for the largest share of the expenses in producing milk?

- a) labor b) mastitis c) feed d) electricity

ANS: c) feed

1. Write this down. How many pounds of protein are in one ton (2000 pounds) of dairy feed that contains 18% protein?

- a) 200 pounds b) 360 pounds c) 18 pounds d) 218 pounds

ANS: b) 360 pounds

2. What is the definition of "days open" on a DHIA report?

- a) number of days in lactation b) number of days from calving to conception
c) number of days dry

ANS: b) number of days from calving to conception

3. Which one of the following describes the process of homogenization in milk?

- a) clarification b) pasteurization
c) the manufacturing process that distributes the fat evenly throughout milk

ANS: c) the manufacturing process that distributes the fat evenly throughout milk

4. Your veterinarian says that a cow is in the first trimester. What does that mean?

- a) first 3 months of pregnancy b) first 3 months of lactation
c) the first part of the dry period

ANS: a) first 3 months of pregnancy

5. When referring to milk composition, what do the initials SNF stand for?

ANS: Solids-Not-Fat

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1. On the PDCA Dairy Cow Unified Score Card, how many points are assigned to the Frame category?

- a) 40 b) 20 c) 15 d) 10

ANS: c) 15

2. What document establishes the standards for Grade A milk?

- a) Federal Milk Order b) Pasteurized Milk Ordinance (PMO)
c) PDCA Score Card

ANS: b) Pasteurized Milk Ordinance (PMO)

3. How many fatty acids does a triglyceride molecule contain?

ANS: Three

4. What is the source of mycotoxins in feed?

- a) bacteria b) molds c) carbohydrates

ANS: b) molds

5. Which part of the milking machine functions to alternate vacuum and atmospheric pressure in the space between the teat cup shell and the liner?

- a) regulator b) pulsator c) compressor

ANS: b) pulsator

6. What is the normal delivery position when a calf is born?

- a) back feet first b) shoulders first c) front feet first and then the head

ANS: c) front feet first and then the head

7. Which of the following is the main reason that the feed additive Decco (decoquinat) is often included in calf starter feed?

- a) to control coccidia b) as a source of calcium c) to control flies

ANS: a) to control coccidian

8. What is the scientific term for the product Rumensin?

a) decoquinate b) lasalocid c) monensin d) lactoferrin

ANS: c) monensin

9. Which one of the following is the name of the acid produced during an improper silage fermentation that has an offensive odor and can cause cows to reduce their intake?

a) butyric acid b) lactic acid c) propionic acid

ANS: a) butyric acid

10. In a lactating dairy cow, which of the following is the hormone responsible for a cow not having milk letdown?

a) adrenaline (or epinephrine) b) oxytocin c) progesterone

ANS: a) adrenaline (or epinephrine)

11. On the PDCA Dairy Cow Unified Score Card, how many points are allotted to udder?

a) 10 b) 15 c) 20 d) 40

ANS: d) 40

12. Which one of the following is the percentage of water contained in normal milk?

a) 67.5% b) 77.5% c) 87.5% d) 97.5%

ANS: c) 87.5%

13. What compartment of the ruminant stomach is similar to the human stomach?

a) abomasum b) reticulum c) omasum d) rumen

ANS: a) abomasum

14. In the dairy cow, what is the name of the gland that produces the hormone oxytocin?

ANS: Pituitary gland

15. What is the name for a sterile heifer that is born twin to a bull?

ANS: Freemartin

16. What two amino acids are considered to be first limiting or co-limiting for milk protein synthesis?

- a) methionine and lysine b) arginine and leucine c) valine and tryptophan

ANS: a) methionine and lysine

17. Which one of the following ranges is closest to the total ration crude protein requirement for early lactation cows?

- a) 6 to 8% b) 10 to 12% c) 16 to 18% d) 25 to 28%

ANS: c) 16 to 18%

18. What is the name of the hormone that is secreted by the corpus luteum (yellow body)?

- a) testosterone b) progesterone c) adrenaline (epinephrine) d) oxytocin

ANS: b) progesterone

19. On a DHIA record, which of the following does days to first service refer to?

- a) the number of days from calving until first breeding date
b) number of days open
c) number of days dry

ANS: a) the number of days from calving until first breeding date

20. What is the name of the blister-like structure on the ovary that contains the egg before ovulation?

- a) cervix b) uterus c) follicle

ANS: c) follicle

Bonus Questions Each bonus question is worth 20 points.

1. Which of the following causes Blackleg in cattle?

- a) a virus b) a fungus c) a bacterium

ANS: c) a bacterium

2. What has the greatest effect on the concentration of fiber in a growing plant?

a) stage of maturity of the plant b) weed control c) amount of lime applied

ANS: a) stage of maturity of the plant

3. In reference to the dairy industry, what does ADSA stand for?

ANS: American Dairy Science Association

1. The disease Cryptosporidiosis (“Crypto”) in calves is caused by a protozoan parasite. Which one of the following sections of the digestive system does “Crypto” mainly affect?

a) rumen b) reticulum c) esophagus d) small intestine

ANS: d) small intestine

2. Why is colostrum from older cows normally higher in antibody concentration than colostrum from first calf heifers?

a) older cows have given birth to more calves b) older cows produce more milk

c) older cows have had more exposure to disease and have developed more antibodies

ANS: c) older cows have had more exposure to disease and have developed more antibodies

3. Write this down. A cow is consuming 200 pounds of a total mixed ration that contains 55% dry matter. How many pounds of dry matter is the cow eating?

a) 55 pounds b) 100 pounds c) 110 pounds

ANS: a) 110 pounds

Calculation: 200 pounds times 55% dry matter = 110 pounds of dry matter

4. What branch of the Federal government is the National Agricultural Statistics Service (NASS) a part of?

a) Food and Drug Administration (FDA) b) U.S. Department of Agriculture (USDA)

c) U.S. Census Bureau

ANS: b) U.S. Department of Agriculture (USDA)

5. Which one of the following is the name of the condition that can exist in a

cow after calving when an excessive amount of lymph fluid accumulates between the skin and the secretory tissue of the udder?

- a) bloat b) ketosis c) metritis d) udder edema

ANS: d) udder edema

1. Why are cottonseed hulls often included in dairy rations?

- a) to provide protein b) to provide energy c) to provide fiber

ANS: c) to provide fiber

2. In the ruminant digestive system, which one of the following is the name of the first section of the small intestine that is connected to the abomasum?

- a) duodenum b) jejunum c) ileum d) colon

ANS: a) duodenum

3. What is the name of the small projections that line the wall of the small intestine that function to absorb nutrients?

ANS: Villi

4. Which one of the following is the reason that we should we give a dairy heifer a special magnet that will stay in her reticulum?

- a) to help prevent ketosis b) to help prevent metritis
c) to help prevent "hardware disease"

ANS: c) to help prevent "hardware disease"

5. Dairy cattle are most comfortable within which of the following temperature ranges?

- a) 30 to 35 degrees F b) 50 to 55 degrees F c) 70 to 75 degrees F

ANS: b) 50 to 55 degrees F

6. What organization provides the majority of funding for the North Carolina 4-H Dairy Youth Program?

ANS: North Carolina Dairy Youth Foundation

7. How many double bonds does a completely hydrogenated (saturated) fat contain?

a) 2 b) 4 c) 6 d) none

ANS: d) none

8. Grade A milk that is used for fluid consumption is classified into which of the following classes?

a) Class 1 b) Class 2 c) Class 3 d) Class 4

ANS: a) Class 1

9. What is the name of the feed component found in plant cell walls that is not digestible by the cow?

ANS: Lignin

10. What disease does Mycobacterium paratuberculosis cause?

ANS: Johnes disease (pronounced YO-NEES disease)

11. Which one of the following is the name of the condition when a dairy cow is receptive to be bred?

a) artificial insemination b) heat (or estrus) c) cloning d) gestation

ANS: b) heat (or estrus)

12. In the process of artificial insemination (A.I.) on a dairy cow, what section of the reproductive tract does the inseminating rod pass through before the semen is deposited?

a) cervix b) fallopian tubes c) oviduct d) uterine body

ANS: a) cervix

13. What main problem is caused when a calf has scours and not enough fluids are absorbed?

a) rumination b) dehydration c) chelation

ANS: b) dehydration

14. What hormone is critical in the initiation and maintenance of lactation?

a) estrogen b) oxytocin c) prolactin

ANS: c) prolactin

15. Which one of the following is an example of a mineral found in dairy cattle diets:

- a) biotin b) niacin c) calcium d) nitrogen

ANS: c) calcium

16. What happens to the calf's energy requirement during cold weather?

- a) it decreases b) it increases c) it stays the same

ANS: b) it increases

17. Which one of the following is a true fat molecule that contains glycerol and three fatty acids?

- a) glycogen b) apoprotein c) mitochondria d) triglyceride

ANS: d) triglyceride

18. Which one of the following is the proper name for the condition known as milk fever?

- a) mastitis b) parturient paresis c) founder d) laminitis

ANS: b) parturient paresis

19. Which of the following countries has the greatest number of dairy cows?

- a) United States b) England c) India d) Brazil

ANS: c) India

20. What toxic substance is most likely to be found in frost-damaged sorghum?

ANS: Prussic acid

ANS: None of the major dairy cow breeds originated in the United States

2. What compartment of the ruminant digestive system is termed "manyplies"?

- a) rumen b) reticulum c) omasum d) abomasum

ANS: c) omasum

3. Approximately how many gallons of blood must pass through the udder in order for the cow to produce one gallon of milk?

- a) 400-500 gallons b) 40-50 gallons c) 10-15 gallons

ANS: a) 400-500 gallons

1. Rennet is the name of the enzyme that is added to milk to make what dairy product?

ANS: Cheese

2. Why is sodium bicarbonate (baking soda) commonly added to dairy cow rations?

ANS: To buffer the rumen and to help maintain fat test

3. In a dairy cow, which of the following normally occurs second during the lactation cycle, “peak feed intake” or “peak milk production”?

ANS: Peak feed intake

4. In the United States, dairy farms with this herd size produce the largest percentage of the milk:

- a) 100 to 499 cows b) 600 to 900 cows c) 1000 to 2000 cows
d) Over 2000 cows

ANS: a) 100 to 499 cows

5. What is a “blind” quarter on a dairy cow?

ANS: A quarter of the udder that does not secrete milk

1. If a feed contains 70% moisture, what percentage dry matter does it contain?

ANS: 30%

2. Which of the following are often included in rations as good sources of rumen undegradable or “bypass” protein?

- a) cottonseed hulls and molasses b) alfalfa hay and corn silage
c) corn gluten meal and blood meal

ANS: c) corn gluten meal and blood meal

3. In reference to milk quality, what is the maximum legal limit of somatic cells concentration (cells/ml) that milk can contain?

ANS: 750,000 cells/ml

4. Bovine spongiform encephalopathy or BSE is more commonly known as what disease?

ANS: Mad Cow Disease

5. When a calf nurses milk, what stomach compartment receives the milk directly?

ANS: Abomasum

6. What muscle keeps the teat end closed and helps prevent organisms from entering the

udder?

ANS: Sphincter muscle

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7. Which of the following states has the fewest number of dairy cows?

a) North Carolina b) Virginia c) Alaska d) Mississippi

ANS: c) Alaska

8. What is the proper name for a “yellow body” in the cow’s reproductive system?

a) ovary b) follicle c) corpus luteum d) uterus

ANS: c) corpus luteum

9. Which of the following is a warm season or C4 grass?

a) fescue b) alfalfa c) bermuda d) orchardgrass

ANS: c) Bermuda

10. On the PDCA Dairy Cow Unified Score Card, how many points are allotted

to udder?

a) 15 b) 40 c) 20 d) 10

ANS: b) 40

11. Which of the following is the weight of one gallon of whole milk?

a) 8.6 pounds b) 9.6 pounds c) 10.6 pounds d) 11.6 pounds

ANS: a) 8.6 pounds

12. In reference to a sire summary, what does the abbreviation PTA stand for?

ANS: Predicted Transmitting Ability

13. What does Klebsiella cause in lactating dairy cows?

ANS: mastitis

14. What is the name of the substance in a semen tank that is used to freeze semen straws?

a) liquid oxygen b) liquid carbon dioxide c) liquid helium d) liquid nitrogen

ANS: d) liquid nitrogen

15. Which one of the following is the main reason why you should keep newborn calves separated from each other?

a) to reduce fighting among the calves b) to prevent transmission of disease
c) to reduce labor costs

ANS: b) to prevent transmission of disease

16. Which of the following plants is not classified as a legume?

a) soybean b) clover c) alfalfa d) corn

ANS: d) corn

17. What is the term for the condition involving the ovaries when the cow comes into heat every few days?

- a) lactation b) cystic c) anestrus d) placenta

ANS: b) cystic

18. What is “morbidity rate” in dairy calf management?

- a) the average daily gain of the calves b) the number of calf death losses
c) the number of sick calves in a certain period of time

ANS: c) the number of sick calves in a certain period of time

19. At the end of what major sporting event does the winner traditionally drink milk?

- a) Kentucky Derby b) Wimbledon c) Indianapolis 500
d) Super Bowl

ANS: c) Indianapolis 500

20. What do we call the condition in the cow when the abomasum twists out of normal position?

ANS: displaced abomasum (also accept DA)

1. What do the initials NDF stand for on a feed analysis report?

ANS: Neutral Detergent Fiber

2. What is the technical term for the class of chemicals used to kill internal parasites in cattle?

ANS: Anthelmintics (also accept dewormers)

3. In dairy cattle judging, what are you referring to when you describe this part as having a higher and wider attachment?

- a) fore udder b) rear udder c) tail head d) muzzle

ANS: b) rear udder

1. What is the term for the process where, in the presence of sunlight, chlorophyll-containing plants convert carbon dioxide and other elements into simple carbohydrates with oxygen also being produced?

ANS: Photosynthesis

2. During digestion, which one of the following is an enzyme that functions to break down fat (or lipids)?

a) peptidase b) lipase c) amylase d) lactase

ANS: b) lipase

3. What does “palatability” mean in reference to dairy feed?

a) the taste or likability of a feed b) The color of a feedstuff
c) the energy level of a feedstuff

ANS: a) the taste or likability of a feed

4. What are the two main gases produced in the rumen?

a) methane and oxygen b) methane and carbon dioxide c) oxygen and helium

ANS: b) methane and carbon dioxide

5. Where is the National 4-H Dairy Cattle Judging Contest held?

ANS: Madison, Wisconsin (also accept Wisconsin or the World Dairy Expo)

1. Which one of the following describes the Pasteurized Milk Ordinance (PMO)?

a) the document that establishes the Federal Milk Orders
b) the document that establishes the guidelines for feeding dairy cows
c) the document that establishes the standards for Grade A milk

ANS: c) the document that establishes the standards for Grade A milk

2. What type of organism causes “Bovine Leukosis”?

a) virus b) bacteria c) protozoa d) lymphocytes

ANS: a) virus

ANS: b) teat dipping

10. Which one of the following is a class of immunoglobulins (or antibodies)?

a) FSH b) IgG c) CLA

ANS: b) IgG

11. As corn silage ferments properly in the silo, what happens to the pH of the silage?

a) it increases b) it decreases c) it does not change

ANS: b) it decreases

12. Name the part of the cow that is located just forward of the chine.

ANS: withers

13. In a dairy cow, which of the following is the normal range in the length for the estrous cycle

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- a) 5 to 10 days b) 18 to 24 days c) 35 to 40 days

ANS: b) 18 to 24 days

14. Which one of the following is the number of upper front teeth in a dairy cow?

- a) 5 b) 12 c) 15 d) none

ANS: d) none

15. In reference to DHIA records, what is significant about the factor 305 days?

ANS: 305 days is the standardized lactation length

16. Which one of the following describes the function of the Cooperatives Working Together (CWT) program?

- a) an international program used to market whey protein
b) a national dairy farmer-funded program that is used to help stabilize milk prices
c) a state-wide program that addresses the cost of dairy feeds

ANS: b) a national dairy farmer-funded program that is used to help stabilize milk prices

17. In what year was Hoard's Dairyman magazine first published?

- a) 1860 b) 1885 c) 1908 d) 1945

ANS: b) 1885

18. Which of the following is the main component of adipose tissue?

- a) protein b) carbohydrate c) minerals d) fat

ANS: d) fat

19. The DRMS is located in Raleigh. What does DRMS stand for?

ANS: Dairy Records Management Systems

20. Which one of the following describes soybean hulls and corn gluten feed.

- a) forages b) bentonites c) by-product feeds

ANS: c) by-product feeds

1. In reference to digestion and metabolism, which one of the following best describes Beta hydroxybutyrate?

- a) a mastitis pathogen b) an amino acid c) a ketone body

ANS: c) a ketone body

2. What compartment of the ruminant stomach has a honeycomb lining?

- a) rumen b) reticulum c) omasum d) abomasum

ANS: b) reticulum

3. How old should the average well-grown Holstein heifer be when she is bred?

- a) 8-12 months b) 13-15 months c) 16-18 months d) 22-24 months

ANS: b) 13-15 months

1. Which one of the following is a good source of starch in the cow's diet?

- a) alfalfa hay b) corn grain c) soybean meal

ANS: b) corn grain

2. In a forage analysis, what is measured to determine the crude protein content in the forage?

- a) Calcium b) Sulfur c) Nitrogen d) Fiber

ANS: c) Nitrogen

3. As of 2010, what state has the highest milk production per cow?

- a) Michigan b) Wisconsin c) New Mexico d) California

ANS: c) New Mexico

4. The duodenum, jejunum and ileum are three sections of the _____.

- a) large intestine b) small intestine c) cow's reproductive tract

ANS: b) small intestine

5. What is the name of the tiny, finger-like projections which line the wall of the rumen and increase the surface area for absorption of nutrients?

a) crypts b) jejunum c) leaves d) papillae

ANS: d) papillae

1. In dairy cattle judging, what part are you referring to when you describe the cow as being sickle-hocked?

ANS: rear legs

2. In lactating dairy cows, a low milk fat test is an indication of a low ration level of:

a) protein b) energy c) fiber

ANS: c) fiber

3. When you measure the heart girth of a dairy animal with a special tape, what are you trying to estimate?

ANS: Body weight

4. What is the name of the primary digestive process that occurs in the rumen?

ANS: Fermentation

5. In reference to DHIA records, what is significant about the factor 305 days?

ANS: 305 days is the standardized lactation length

6. Which of the following describes a completely hydrogenated fat that contains no double bonds?

a) unsaturated fat b) saturated fat c) vegetable oil

ANS: b) saturated fat

7. In reference to feeding guidelines for dairy animals, what does NRC stand for?

ANS: National Research Council

8. Which of the following normally occurs first during a lactation cycle?

a) peak feed intake b) peak milk production c) both occur at the same time

ANS: b) peak milk production

9. At which of the following temperatures should milk be held in the farm bulk tank?

a) 60 degrees F b) 50 degrees F c) 38 degrees F

ANS: c) 38 degrees F

10. Which one of the following minerals provided in excess during the dry period may result in milk fever?

a) Sodium b) Selenium c) Calcium d) Phosphorous

ANS: c) Calcium

11. Bypass protein refers to the part of feed protein that, in the cow's rumen, is:

a) degraded b) undegraded c) fermented to volatile fatty acids

ANS: b) undegraded

12. What are the basic structural components of proteins called?

ANS: amino acids

13. Who is the Commissioner of Agriculture for North Carolina?

ANS: Steve Troxler

14. What is the name of the toxic yellow pigment that can be found in cottonseed?

ANS: Gossypol

15. A deficiency of this trace mineral has been associated with retained placenta in cows and white muscle disease in calves?

a) potassium b) iron c) selenium d) magnesium

ANS: c) selenium

16. Drought-stressed forages can be toxic to dairy animals if they contain:

a) high levels of protein b) high levels of fat c) high levels of nitrates

ANS: c) high levels of nitrates

17. What are acetate, propionate and butyrate?

a) volatile fatty acids (VFA) produced in the rumen b) amino acids c) somatic cells

ANS: a) volatile fatty acids produced in the rumen

18. How many amino acids are considered to be essential in the dairy cow and are required in the diet?

ANS: 10

19. What infection causes milk somatic cell counts to increase?

ANS: Mastitis

20. Which of the following describes “ovulation”?

a) parturition b) palpation c) milk ejection d) the release of an egg from a follicle

ANS: d) the release of an egg from a follicle

1. What part of the alfalfa plant has the highest % digestibility?

ANS: the leaves

2. TDN is a common term to nutritionists. What does TDN stand for:

a) Total Digestible Nutrients
b) Total Dietary Nitrogen
c) Total Daily Needs

ANS: a) Total Digestible Nutrients

3. When should cows with mastitis be milked?

a) first b) last c) in any group

ANS: b) last