

2018 Junior Dairy Quiz Bowl Questions

Round 01

Phase B 5 Questions Correct answers are worth 10 points each.

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

ANS: liquid nitrogen

2. Carotene is the precursor for Vitamin A. What color is carotene?

ANS: orange

3. Which of the following is not a good source of energy for dairy cows?

a) corn grain b) corn gluten feed c) cottonseed hulls d) barley grain

ANS: c) cottonseed hulls

4. What do nutritionists term the amount of feed left over after the water is removed from a feed sample?

ANS: Dry Matter

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

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

ANS: c) 50 to 55 degrees F

Phase C

20 Questions

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1. What is the common name for Traumatic gastritis?

ANS: Hardware disease

2. Which one of the following can happen when we feed excess crude protein in the ration?

a) acidosis b) fatty liver c) decrease fertility

ANS: c) decrease fertility

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

ANS: b) pulsator

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

ANS: a) abomasum

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

ANS: Freemartin

6. In the reproductive tract of a dairy cow, how many uterine horns are there?

ANS: two

7. Which dairy breed generally has the greatest volume of milk production?

ANS: Holstein

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

ANS: Homogenization

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

ANS: United States Department of Agriculture

10. What part of the cow's back is located between the chine and the rump?

ANS: d) loin

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

ANS: cervix

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

ANS: Whey

13. The normal water content of milk is approximately:

ANS: 87% (85-87% is acceptable)

14. In reference to forage analysis, what does "ADF" stand for?

ANS: acid detergent fiber

15. What does it mean when a heifer is "polled"?

ANS: she was born without horns

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

ANS: front feet first and then the head / diving position

17. Which of the following is a source of mycotoxins in feed?

ANS: molds

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

ANS: Colostrum

19. The disease "Rickets" is caused by a deficiency of a certain vitamin. What is the name of this vitamin?

ANS: Vitamin D

20. When a sperm cell with an X chromosome fertilizes an egg, the result will be a:

ANS: Female

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1. Which breed has its major All-American Show in Louisville, Kentucky?

ANS: Jersey

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

ANS: 5 feet

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

ANS: 1 to 1 ½ minutes

4. What is the financial indicator derived by dividing the total debt by the average number of cows?

ANS: Debt per cow

5. What is the importance of the esophageal groove in the digestive tract of calves?

ANS: It sends milk directly from the esophagus to the abomasum for digestion.

2018 Junior Dairy Quiz Bowl Questions

Round 02

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

ANS: Cheese

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

ANS: dystocia

3. 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?

ANS: udder edema

4. Name the parts of the cow’s small intestine?

ANS: duodenum, ileum, jejunum

5. What does MUN stand for?

ANS: Milk Urea Nitrogen

Phase C

20 Questions

Correct answers are worth 15 points each.

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1. Milk should be cooled to which of the following temperatures within 30 minutes after milking is completed?

ANS: 38° F

2. Which one of the following is the name of the feed additive commonly added to dairy rations that buffers the rumen and helps maintain milk fat test?

a) biotin b) dried molasses c) ionophores d) sodium bicarbonate

ANS: d) sodium bicarbonate

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

ANS: Anthelmintics (also accept dewormers or wormers)

4. Dairy calves typically are weaned at what age?

ANS: 6-8 weeks

5. What is the name of the hormone that causes milk "let down"?

ANS: oxytocin

6. When artificially inseminating cows the semen should be deposited in the _____?

ANS: c. uterine body

7. Which breed's milk generally has the highest level of beta-carotene which gives the milk a golden color?

ANS: Guernsey

8. **Ov-Synch, CIDR-PG, or Lutalyse** are used in cows primarily for what reason?

ANS: estrus synchronization

9. In reference to dairy cattle reproduction, what is the blister-like structure on the ovary that contains the egg before ovulation?

ANS: follicle

10. What is the approximate gestation length for a dairy cow?

ANS: 280 days

11. What does the Standard Plate Count measure in milk?

ANS: bacteria count

12. How soon after birth should Holstein calves be feed one gallon of colostrum?

ANS: as soon as possible after birth/ within 6 hours

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

a) Coastal Plain b) Piedmont c) Mountains

ANS: b) Piedmont

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

ANS: Clean-in-place

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

ANS: 10 pounds of milk

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

ANS: Mad Cow Disease

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

ANS: Lactose

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

ANS: it decreases

19. What is the term for an injection given just under the skin?

ANS: subcutaneous

20. What year was the first publication of Journal of Dairy Science?

Answer: 1917

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

ANS: Water

2. What disease is caused by *Mycobacterium paratuberculosis*?

ANS: Johne's Disease

3. Why should a teat dip be used after milking?

ANS: To reduce or prevent udder infections (mastitis)

4. What is the common name for "parturient paresis"?

ANS: Milk fever

5. What hormone is secreted by the Corpus Luteum?

ANS: Progesterone

2018 Junior Dairy Quiz Bowl Questions

Round 03

Phase B

5 Questions

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

ANS: calcium

2. What is the function of a regulator in a milking system?

ANS: keeps the vacuum at a constant level

3. What are the two main gasses produced in the rumen?

ANS: methane and carbon dioxide

4. 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

5. What is the name used to describe the waxy substance found in the teat duct that limits bacterial growth and provides a physical barrier against bacteria?

ANS: Keratin

Phase C

20 Questions

Correct answers are worth 15 points each.

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

ANS: 305 days

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

ANS: gestation

3. 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

4. What are the cluster of milk secreting cells called in the udder?

ANS: alveoli

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

a) North Carolina

b) Virginia

c) Alaska

d) Mississippi

ANS: c) Alaska

6. What does EPA stand for?

ANS: Environmental Protection Agency

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

ANS: pedigree

8. Which one of the following is not classified as a "fat-soluble" vitamin?

a) Vitamin D b) Vitamin K c) Vitamin E d) thiamine

ANS: thiamine

9. What breed of dairy cattle originated in Scotland?

ANS: Ayrshire

10. How many points are assigned to rear feet and legs on the PDCA Dairy Cow Unified Score Card?

ANS: 20 points

11. Which of the following is not digested by the dairy cow?

a) cellulose b) hemicellulose c) lignin

ANS: c) lignin

12. One gram of protein contains 4 kilocalories of energy. Which one of the following also contains 4 kilocalories of energy in one gram?

a) fat b) carbohydrate c) Vitamin D

ANS: b) carbohydrate

13. What does MUN stand for?

ANS: Milk Urea Nitrogen

14. A young calf needs energy to maintain body functions under normal temperature conditions, which for the dairy calf ranges from 50 degrees F to 78 degrees F. What is this temperature range called?

ANS: b) thermal-neutral zone

15. During digestion, which enzyme functions to break down fat (or lipids)?

ANS: lipase

16. A pH of 7.0 is neutral. Is a pH of 8.0 acidic or basic?

ANS: basic

17. In dairy cattle, what describes a bolus of regurgitated food that is chewed and re-swallowed?

ANS: cud

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

ANS: feed cost

19. Which of the following is the most common bacterium that causes chronic mastitis?

ANS: Staph. Aureus

20. After peak milk production, the cow's milk production starts to decline. What is the rate of decline of this milk production curve called?

ANS: persistency

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1. What enzyme is present in the abomasum of calves to break down milk fat?

ANS: Rennin

2. 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

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

ANS: To help detect heat or estrus

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

ANS: 5 to 10%

5. What percentage of their mature weight should first lactation cows weigh?

ANS: 85%

2018 Junior Dairy Quiz Bowl Questions

Round 04

Phase B

5 Questions

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1. What part of the cow does laminitis effect?

ANS: Hooves (or feet)

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

ANS: Pasteurization

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

ANS: pendulous

4. What does "TMR" stand for?

ANS: Total Mixed Ration

5. Name 3 breeds of dairy goats.

ANS: Alpine, LaMancha, Nigerian, Dwarf, Nubian, Oberhasli, Saanen, Sable, and Toggenburg.

Phase C

20 Questions

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

ANS: Best Management Practices

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

ANS: 90%

3. What is the CMT test used for?

ANS: to detect mastitis

4. 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

5. 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

6. What is the name of the piece of equipment in a milking system which traps particles and debris from entering the bulk tank?

ANS: milk filter

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

ANS: embryo transfer

8. What is the minimum legal butterfat percentage found in processed whole milk?

ANS: 3.25%

9. What is first cause of calf deaths on a dairy operation?

ANS: Scours

10. COLOSTRUM CONTAINS:

- a) more than protein as whole milk
- b) less than protein as whole milk
- c) the same amount of protein as whole milk

ANS: a) MORE

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

ANS: 30

12. How many upper incisors does a cow have?

ANS: None

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

ANS: Class I

14. Which of the following is the main reason that the feed additive Deccox (decoquate) is often included in calf starter feed?

ANS: to control coccidia

15. 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)

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

ANS: Pituitary gland

17. What bacterial infection that occurs in the eyes of cattle can result in blindness and is thought to be spread by flies?

ANS: Pinkeye

18. What is the term for the type of fat that is usually liquid at room temperature and contains one or more double bonds?

ANS: unsaturated fat

19. Why is soybean meal commonly added to calf starters?

ANS: To provide protein

20. What part of the digestive tract is responsible for absorbing water?

ANS: Large intestine

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1. Which one of the following is the term for the diet that we feed to dairy cows 2 to 3 weeks before the expected calving date?

ANS: a) transition diet

2. A displaced abomasum is usually caused by the lack of what nutrient in the ration?

ANS: fiber or forage

3. What direction do you move when leading a dairy animal in the show ring?

ANS: Clockwise

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

ANS: b) 1885

5. What describes "the number of days from calving until first breeding date"?

ANS: c) days to first service

2018 Junior Dairy Quiz Bowl Questions

Round 05

Phase B

5 Questions

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1. What disease is caused by a virus and causes high fevers and flat discolored spots or bumps that may blister, on the hands, feet, and mouth, and occasionally buttocks and groin.

ANS: Foot and mouth disease

2. What is the common name for an erythrocyte?

ANS: Red blood cell

3. Which Breed association's headquarters are located in Ohio?

ANS: Jersey, Ayrshire, Guernsey

4. Which country has the greatest population of dairy cows?

ANS: India

5. Which organization developed the Dairy Cow Unified Score Card for judging dairy cattle?

ANS: Purebred Dairy Cattle Association (also accept PDCA)

Phase C

20 Questions

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

ANS: 400 to 500 gallons

2. Cows are most susceptible to mastitis infection:

a) at freshening b) during the early dry period c) in late lactation

ANS: a) at freshening

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

ANS: 12-14 months (12-15 acceptable)

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

a) a coarse grain mix b) whole milk c) corn silage

ANS: c) corn silage

5. What is the name of the law that many states are passing that prevents the taking of video and photos without the owners permission?

ANS: Ag-Gag law

6. What is another name for the hook of a cow?

ANS: d) hip

7. What condition can be prevented by feeding the additive Poloxalene?

ANS: Bloat

8. On average, how many hours per day does a cow spend eating?

ANS: 8-9 hours

9. List the top 3 milk producing states, in order first to last

ANS: California, Wisconsin, Idaho

10. What is the best sign that a cow is in heat?

ANS: c) she stands to be mounted

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

ANS: Mastitis

12. A type of mastitis in which there is not a detectable change in the udder itself and no observable abnormality of the milk is known as:

ANS: subclinical

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

ANS: cold shocked

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

ANS: reticulo-omasal orifice

15. In which one of the following can gossypol be found?

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

ANS: c) whole cottonseed

16. What is Failure to show signs of heat is called?

ANS: anestrus

17. What is the name of the price producers get for milk after all charges and incentives have been applied?

ANS: mailbox price

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

ANS: a) virus

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: 60 days

20. Ringworm is caused by which of the following: a fungus, bacteria, or virus?

ANS: Fungus

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1. Name three micro-minerals required by dairy cows.

ANS: Co, Cu, Zn, Mn, Fe, I, Se

2. In reference to forage analysis, what does "ADF" stand for?

ANS: acid detergent fiber

3. Which one of the following is the approximate percentage of solids in normal milk?

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

ANS: c) 13%

4. Give three of the four methods for determining pregnancy in cattle.

ANS: Rectal palpation, urine test, Blood test, and Ultrasound.

5. More than half of the milk sold in the United States is sold where?

a) convenience stores b) supermarkets (grocery) stores c) fast-food restaurants

ANS: b) supermarkets (grocery) stores

2018 Junior Dairy Quiz Bowl Questions

Round 06

Phase B

5 Questions

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1. Name the three volatile fatty acids.

ANS: Acetic acid, butyric acid, propionic acid.

2. When evaluating the effects of heat stress on dairy animals, what do the initials THI stand for?

ANS: Temperature Humidity Index

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

ANS: adrenaline

4. A digestive upset in cattle where large amounts of gas are trapped in the rumen is called?

ANS: Bloat

5. Which two breeds of dairy cattle originated on islands in the English Channel?

ANS: Guernsey and Jersey

Phase C

20 Questions

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1. Grass tetany is caused by a deficiency of what element?

ANS: Magnesium

2. What compartment of a baby calf's stomach is the largest?

ANS: Abomasum

3. What feedstuff is the largest component of dairy rations?

ANS: Forage (also accept silage)

4. What body organ is necessary for nutrient regulation and glucose production?

ANS: Liver

5. What substance is dipped on the umbilical cord of the calf immediately after birth?

ANS: Iodine

6. A colostrometer tests for concentrations of what?

ANS: Immunoglobins

7. What substance is given to calves with severe dehydration and diarrhea?

ANS: electrolytes

8. Which one of the following is a class of immunoglobulins (or antibodies) ?
a) FSH b) IgG c) CLA

ANS: b) IgG

9. What age should the diet of heifers be changed from starter to a grower ration?

ANS: 4 months

10. 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 foot rot b) to reduce heat stress c) to reduce metritis

ANS: b) to reduce heat stress

11. Your veterinarian advises you to drench your cow with propylene glycol. What metabolic disorder are you trying to prevent?

ANS: Ketosis (also accept Acetonemia)

12. What is the most dangerous symptom of scours?

ANS: Dehydration

13. What is inflammation of the Uterine lining called?

ANS: endometritis

14. Ideally, how long can frozen colostrum be stored

ANS: 1 year

15. What are a bull' progeny?

ANS: Sons and daughters

16. Scours effects which organ system?

ANS: digestive

17. Name 3 reasons to cull a dairy cow.

ANS: feet and legs, low production, mastitis, reproduction, udder, disease, injury and disposition

18. What is the name for plants that persist for several years without reseeding?

ANS: perennial

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

ANS: Gregor Mendel

20. In which season of the year is lice most prevalent?

ANS: Winter

Bonus Questions Each bonus question is worth 20 points.

Bonus questions may be earned in the toss-up round. To receive a bonus question, 3 different team members must correctly answer the toss-up questions. Bonus questions are not passed to the other team, nor are points deducted for an incomplete or incorrect answer to the question. Bonus question will be asked whenever 3 team members have answered toss-up questions correctly with the count kept individually for both teams within a match. Eligibility for bonus questions does not carry over to another match. The answers must come from the team captain but assistance can come from the other team members. Only the number or answers required by the bonus question will be accepted. Example: If the bonus has a four-part answer - the first four answers given by the team will be accepted. Answers to a bonus question must start within 20 seconds and be completed within 60 seconds.

1. What is the name of the condition in which a cow comes into heat every few days?

ANS: Cystic

2. Name 3 heat detection methods?

ANS: Kamar patch, activity level (through monitors), Tail chalk, visual observation

3. Name three internal parasites that affect dairy cattle.

ANS: round worm, stomach worm lungworm, coccidia, liver flukes.

4. Cystitis is an inflammation of what organ?

ANS: Bladder

5. Which country is the largest importer of cheese?

ANS: United States

2018 Junior Dairy Quiz Bowl Questions

Round 07

Phase B

5 Questions

Correct answers are worth 10 points each.

Only the team being asked the questions is to be in the room. Each team will be asked these 5 questions. Answers are to be given by a team captain, but assistance may come from any team member. A question may be repeated only once. Answers must be started within 20 seconds. Partial credit may be given at the discretion of the judges. After one team has been questioned, the other team will enter the contest room and be asked the same 5 questions.

1. **One primary rule in calf care is to never withhold milk from scouring calves, as they require energy and protein to meet maintenance requirements, continue growth and what else?**

ANS: Fight disease

2. **During the cooler months, how many inches of silage from the bunker face should be removed per day?**

ANS: 6-12 inches

3. **Dairy provides how many of the five nutrients of concern that are lacking in diets of American children?**

ANS: 3 nutrients

4. **Name 3 ways in which excess colostrum can be stored until needed.**

ANS: Add preservative acid; Ferment; Freeze; Refrigerate;

5. **What 3 things are identified in a bull's NAAB code number?**

ANS: Bull stud; Breed; Individual bull

Phase C

20 Questions

Correct answers are worth 15 points each.

Both teams are in the room for Phase C. The first contestant to signal will answer the question within 5 seconds after being acknowledged by the moderator. Failure to do so will cost that team 10 points. Any contestant answering a question without being acknowledged by the moderator will lose 10 points. If an answer is incorrect, members of the other team will have the opportunity to answer the question without having it reread except for true/false, either or and yes or no type questions. If an answer is given in these types of questions, the question will be replaced with a tie breaker question, and given to the other team. No points are deducted for giving an incorrect answer. Team members are not allowed to discuss the answers in this phase. No partial credit is available in Phase C, except for bonus questions. If neither team can offer an answer to the question within 10 seconds, the moderator will give the answer and the question will be dropped but neither team will forfeit points.

1. Which trait evaluation system serves as the basis of all modern dairy cattle type classification systems?
ANS: Linear type traits
2. Which part of the digestive tract is responsible for reabsorbing water?
ANS: Large intestine
3. What is the name of the document that establishes the standards for Grade A milk?
ANS: Pasteurized Milk Ordinance (PMO)
4. What is the technical term for belching?
ANS: Eructation
5. How many inches of lunging space does a large cow require to rise with reasonable comfort?
ANS: 30 to 40 inches
6. Name 3 types or brands of milking equipment.
ANS: Bodmin-Nupulse; Boumatic; DeLaval; Germania; Mueller; Westfalia Surge; Universal
7. When comparing vacuum pumps, the term CFM is frequently used. What does this acronym stand for?
ANS: Cubic feet per minute
8. Which dairy show is held in Madison, Wisconsin during the first week of October?
ANS: World Dairy Expo
9. For what purpose are tube coolers and plate coolers used on a dairy farm?
ANS: Cool milk prior to entering the bulk tank
10. T/F Ice cream has a minimum of 40 percent milk fat.
ANS: False
11. Name 3 configurations (types) of milking parlors.
ANS: Herringbone; rotary or carousel; Side-opening; Walk through; Polygon; Trigon; Stanchion; Parallel
12. When showing a heifer, how should her feet be placed?
ANS: Front feet square and hind leg closest to the judge back
13. When milking a cow, which milk is lowest in butterfat?
ANS: First milk

14. **What are the 2 most important management practices for the reduction of foot problems?**

ANS:Hoof trimming; Foot baths

15. **How frequently should a cow freshen on the average?**

ANS:Every 12 to 13 months

16. **Which of the following is not an approved visible method of identification for DHI: freeze branding, tattoo, neck chain, or anklet?**

ANS:Tattoo

17. **In terms of input cost to produce milk what is the largest expense?**

ANS:Feed

18. **Define the term symbiotic relationship?**

ANS:A relationship that benefits both organisms

19. **Name 3 factors which influence the amount of water consumed by dairy cattle.**

ANS:Body size; Environmental temperature; Water temperature; Relative humidity; Breed; Diet; Milk production; Water quality

20. **T/F Cheddar cheese was first made in the United States**

ANS:False

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1. Which one of the six major dairy breeds originated in the United States?

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