

**2013 NY District Junior
Dairy Quiz Bowl Contest**

Junior Packet 1, Phase A

1. If a pH of 7 is neutral, what does a pH higher than 7 indicate: a) acidic condition, b) a basic condition, or c) a fever condition?

b) Basic Condition

2. The name of the process that distributes the fat evenly throughout the milk is called: a) Sterilization, b) pasteurization, or c) homogenization

c) Homogenization

3. The process of flushing fertilized eggs from donor cows and implanting them in recipient cows is called: a) Gestation, b) Embryo transfer, or c) artificial insemination

b) Embryo transfer

4. In the reproductive tract of a dairy cow, how many uterine horns are there: a) one, b) two, or c) four?

b) Two

Junior Packet 1, Phase B

1. You are entering the showmanship ring at your county fair. Name four things that a showmanship judge may be looking for when reviewing you and your animal while you are in the ring.

- Cleanliness
- Quality of the clipping of the animal
- Animal condition
- Appearance of the exhibitor
- Grooming
- How well the animal is led
- Posing of the animal
- Sportsmanship
- Poise, alertness, and attitude

2. Name three functions of saliva.

- Moistens food
- Lubricates food
- Acts as a buffer
- Provides fluid base for many nutrients
- Provides the proper environment for bacterial growth

3. Name three advantages of feeding a total mixed ration.

- Eliminate selective feeding, or sorting
- Consistency
- High dry matter intake
- Free-choice mineral is not needed
- Possibility for higher milk production
- Lower percent fiber needed in ration
- Easier to balance precisely
- Fewer digestive upsets
- Can feed a variety of by-products

4. Name two different types of milking parlors.

Herringbone, Parallel, Parabone, Rotary, Side Opening, Flat barn

Junior Packet 1, Phase C

1. Corn grain is a good source of what major nutrient group?

Energy

2. What year was chocolate milk invented?

1919

3. What is the common name for Traumatic Gastritis?

Hardware disease

4. How much water does a cow drink in a day?

25 to 50 gallons

5. What breed of dairy cattle are known for its “golden milk”?

Guernsey

6. What is often added to dairy cattle rations to improve taste and decrease dustiness?

Molasses

7. What does the acronym VFA stand for?

Volatile Fatty Acid

8. What is the normal range, in days, of the estrous cycle?

18 – 24 days

9. What is the planting process called when crops are planted without plowing or disking the field?

No-till

10. Scours and what other common disease are the leading causes of death in calves before weaning?

Pneumonia

11. Name a body part of the cow that can be twisted or wry?

Tail or face

12. What is the name of the device which tests the levels of antibodies in colostrum which involves a cylinder and specific gravity meter?

Colostrometer

13. During High Temperature-Short Time (HTST) pasteurization, milk is heated to what temperature for 15 seconds?

161 degrees Fahrenheit

14. What is the largest dairy cooperative in the United States?

Dairy Farmers of America (DFA)

15. What is the temperature of liquid nitrogen?

-320 Degrees Fahrenheit

16. What is made when you churn fresh milk?

Butter

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Junior Packet 2, Phase A

1. What does the acronym TMR stand for?

Total Mixed Ration

2. What does the acronym CMT stand when talking about mastitis?

California Mastitis Test

3. What does the acronym SCC stand for when talking about milk quality

Somatic Cell Count

4. What does the acronym NDF stand for when talking about feedstuffs?

Neutral Detergent Fiber

Junior Packet 2, Phase B

1. Name three factors that could influence the amount of water consumed by a dairy cow.

Body size
Environmental temperature
Water temperature
Water Quality
Relative humidity
Diet
Milk production

2. Name the four milk classes and give an example of a dairy product from each:

Class I – beverage milks (fluid milk)
Class II – fluid cream products, yogurt, and manufactured products
(Ice cream, cottage cheese, etc.)
Class III – cream cheese and hard manufactured cheese
Class IV – butter and milk in dried form

3. One category of mastitis in dairy cattle is environmental mastitis. Name three possible sources of environmental bacteria that could cause this infection.

Soil
Water
Bedding
Feedstuffs
Mud
Feces

4. Name three common off-flavors in milk:

Bitter
Fruity
Lacks freshness
Rancid
Fermented
High acid
Oxidized
Sour

Junior Packet 2, Phase C

1. In what city and state is the Hoard's Dairyman Headquarters located?

Fort Atkinson, Wisconsin

2. What type of crop shields the soil to reduce erosion, adds organic matter, and captures nutrients otherwise lost by runoff?

Cover crop

3. What by-product of cheese making is known to be a muscle builder and to curb appetite?

Whey protein

4. How many pounds of blood are pumped through the udder to create one pound of milk?

400 pounds

5. What is the definition of castration?

Removal of the testes of the male animal

6. What is the name given to the process of squeezing 2 or 3 streams of milk by hand from the teat before putting on the milking machine

Fore stripping

7. What unit refers to the basic unit of inheritance?

Gene

8. Pneumonic pasteurellosis is another name for what respiratory disease?

Shipping fever

9. A plant that is seeded each year and whose growth cycle is completed in one year is called what?

An Annual plant

10. How many hours per day do cows spend eating?

3 – 5 hours

11. Where is the material deposited when an injection is given IV?

In the vein

12. What disease is prevented by orally placing a special magnet into the reticulum of a heifer or cow?

Hardware disease

13. In DHIA records, lactation length is standardized to how many days?

305 days

14. Which vitamin functions to coagulate blood?

Vitamin K

15. When looking at a dairy cow's production records, what does the term 3X mean?

Cow is milked 3 times daily

16. What is the name of the process called in mammals when the egg is released from the follicle?

Ovulation

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Junior Packet 3, Phase A

1. As a plant gets older, what happens to its concentration of fiber in the plant: it increases, it decreases or it doesn't change?

In increases

2. Of the following, what is the measure of how well a cow turns feed into milk: fat-corrected milk, average dairy gain or feed efficiency?

Feed efficiency

3. What does the term dystocia refer to: a difficult or abnormal calving, ketosis or milk fever?

A difficult or abnormal calving

4. Are warts caused by a fungus, virus or bacteria?

Virus

Junior Packet 3, Phase B

1. Name the two of the three main udder supports.

Median suspensory ligament
Lateral suspensory ligament
Skin

2. Name four dairy breeds and where they originated from.

Ayrshire: Scotland
Brown Swiss: Switzerland
Guernsey: Isle of Guernsey
Jersey: Isle of Jersey
Milking Shorthorn: England
Holstein: The Netherlands and Germany

3. Name two ways a cow can return nutrients to the pastures while grazing.

Manure
Urine

4. Name three parts of a milking machine.

Pulsator
Claw
Vacuum pump
Air tubes/hoses
Milk tubes/hoses
Inflations

Junior Packet 3, Phase C

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

It sends milk directly from the esophagus to the abomasum for digestion

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

Cystic

3. What early lactation disorder results from too much mobilization of body fat and is also called acetonemia?

Ketosis

4. What is the name of the wax-like material that lines the teat canal?

Keratin

5. What is the name of the mechanism that stirs the milk in a bulk tank?

Agitator

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

A follicle

7. What part of the plant cell wall is not digestible in the rumen?

Lignin

8. The Charm test and the Delvo test are used to test for what in milk?

Antibiotics

9. How often should a dairy farmer wash and sanitize the bulk tank?

Every time it is emptied

10. Name the hormone that is critical in the initiation and maintenance of lactation.

Prolactin

11. What is the name of the test developed at the University of Wisconsin and is used to measure the milk fat content in milk?

Babcock test

12. What is the most common cause of high bacteria counts in milk?

Dirty equipment

13. What vitamin helps to prevent rickets?

Vitamin D

14. What is the name of the process of heating milk to destroy pathogenic bacteria called?

Pasteurization

15. Which compartment of the cow's stomach is where the majority of the feed fiber is digested by the microorganisms?

Rumen

16. What is the name of the hormone that causes the cow to let down her milk?

Oxytocin

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Junior Packet 4, Phase A

1. If you breed a cow in March, what month will you expect her to freshen or have her calf?

December

2. To the nearest tenth of a pound, how much does a gallon of milk weigh?

8.6 pounds

3. What is the most common type of cancer that affects farmers?

Skin cancer

4. Name one breed of dairy cattle that requires an ear tattoo for permanent identification?

Brown Swiss, Jersey, or Milking Shorthorn

Junior Packet 4, Phase B

1. Name four methods or practices to use to help in reducing soil erosion.

- Wind breaks
- Cover crops
- Strip cropping
- Contour cropping
- Terracing
- Grass waterways
- Reduced tillage
- Soil seeding
- Planting hedge rows

2. Name two storage options for excess colostrum that is not fed immediately.

- Add preservative acid
- Ferment
- Freeze
- Refrigerate

3. What are the two main functions of the large intestine?

- Water absorption
- Storage of waste materials

4. There are several important points to consider when selecting a calf as a 4-H project animal. Please name three.

- Age
- Breed
- Health
- Pedigree or Genetics
- Conformation

Junior Packet 4, Phase C

1. What is the number one reason to cull a cow in the United States?

Reproduction or Mastitis

2. What time of year is keratoconjunctivitis or pink eye most prevalent?

Summer

3. What is the term used to describe animals that give birth to live young and suckle their offspring after birth?

Mammals

4. What is residual milk?

Milk left in the udder after a normal milking

5. What is the Spanish word for cheese?

Queso

6. Which mineral is used to build strong bones and teeth, in conjunction with calcium?

Phosphorus

7. What does DIP stand for, relative to nutrition?

Degradable Intake Protein

8. During which month is National Agriculture Day celebrated?

March

9. What vitamin is contained in green forage?

Vitamin A

10. Which dairy breed organization was the first to register and transfer animals by computer data processing?

American Guernsey Association

11. What organ system does Johne's disease affect?

Digestive system

12. What breed of dairy cattle has the undesirable recessive trait called weavers?

Brown Swiss

13. What organization do the letters NDB stand for?

National Dairy Board

14. The term stillborn describes a calf that is born what?

Dead

15. When referring to equipment sanitation, what do the letters CIP stand for?

Clean-in-place

16. What is the name of the primary sugar found in milk?

Lactose

**2013 NY District Junior
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Junior Packet 5, Phase A

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

4 months

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

3 to 4 quarts or 8 to 10 % of its body weight

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

Loin

4. Is blackleg caused by a virus, fungus, or bacterium?

Bacterium

Junior Packet 5, Phase B

1. What are three other animals, other than a cow, that are used to produce milk for consumption throughout the world?

Human
Goat
Sheep
Camel
Water Buffalo
Horse
Yak

2. Name four of the five major components in milk.

Protein (Casein is acceptable)
Fat
Water
Lactose
Vitamins and minerals

3. Name two reasons why straw is added to a dairy cow's feed ration.

Increase the fiber content
Slow down the digestion rate
Lower ration feed cost
Expand the gut

4. You, as the calf manager on a dairy farm, have the responsibility for the health and care of all the young stock on the farm. Name 4 signs of illness in your calves.

Decreased appetite
Coughing
Heavy breathing
Nasal discharge
Watery manure
Drippy ears
Elevated or below normal temperature
Dull eyes and hair coat
Lack of energy

Junior Packet 5, Phase C

1. What is a coarse textured grain fed to baby calves called that is necessary for rumen development?

Calf starter

2. What is the term for white blood cells and epithelial cells found in milk?

Somatic cells

3. The Corpus Luteum is a reproductive structure that is commonly referred to as what?

Yellow body

4. How many pounds are in a bushel of corn?

56 pounds

5. Where is Follicle Stimulating Hormone, or FSH, produced?

Pituitary gland

6. What mammal produces milk that is used for Romano cheese?

Sheep

7. Who invented the centrifugal cream separator?

Dr. Gustaw Delaval

8. Who is the world's largest private exporter of dairy products?

New Zealand Dairy Board

9. ADG is a significant factor in monitoring growth rates in dairy heifers. What do the letters ADG stand for?

Average Daily Gain

10. What is the term for the feed material found in the small intestine?

Chyme

11. What are the building blocks of fats and lipids?

Fatty acids

12. Which volatile fatty acid is a precursor for glucose and is produced from digestion of starch and grain?

Propionic acid

13. What is the name used to describe the general class of chemicals which are used for weed control?

Herbicides

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

30 pair

15. Human resource management is the management of who or what?

People

16. On the dairy farm, what do we call the cow that is not producing milk?

Dry cow

**2013 NY District Junior
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Junior Packet 6, Phase A

1. What is the taste or likability of a feedstuff called?

Palatability

2. What percent of fat is low-fat milk?

1 Percent

3. Which is larger, a 14 gauge needle or a 16 gauge needle?

14 Gauge

4. Is a subcutaneous injection given in the muscle, into a vein, or under the skin?

Under the skin

Junior Packet 6, Phase B

1. What are the three volatile fatty acids produced in the Rumen?

Acetic acid (acetate)
Butyric acid (butyrate)
Propionic acid (propionate)

2. Name three reasons that a judge would disqualify a cow in the show ring.

Total blindness
Blind quarter
Abnormal milk (bloody, clotted, watery)
Signs the animal has been tampered with to conceal faults
Faults in conformation or soundness
Free martin heifer

3. Name three reasons why artificial insemination is better than breeding a bull.

Faster genetic process
Access to larger selection of bulls
Farm safety cost savings
Fewer opportunities for reproductive disease transmission

4. Name two fat soluble vitamins.

Vitamin A, D, E and K

Junior Packet 6, Phase C

1. How many glasses of milk does the average cow produce per day?

90 glasses

2. In regards to animal identification, what do the initials NAIS stand for?

National Animal Identification System

3. What are extra teats called on a heifer?

Supernumerary teats

4. What is the ideal temperature comfort zone for Dairy Cattle?

35-65 Degrees Fahrenheit

5. What do we call the liquid that is left over after making cheese?

Whey

6. What does the acronym BTSCC stand for in reference to milk quality?

Bulk Tank Somatic Cell Count

7. When an animal has grass tetany, she is deficient in what mineral?

Magnesium

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

Acidosis

9. Which breed of dairy cows is affected by white heifer disease?

Milking Shorthorns

10. What is the name of the tool that is filled with liquid solution that cows walk through and is used to prevent foot warts and foot rot?

Footbath

11. During normal calving, what part of the calf is seen first?

Front feet

12. What is added to crop fields to make the soil less acidic and more productive?

Lime

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

1885

14. Where is the World Dairy Expo held?

Madison, WI

15. Anaerobic manure digesters convert what gas into electricity?

Methane

16. What percentage of normal milk is water?

87.5 % (Accept 87 %)

**2013 NY District Junior
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Junior Packet 7, Phase A

1. As a person's age increases, his or her milk consumption tends to increase or decrease?

Decrease

2. Which direction do you lead a dairy animal in the show ring – clockwise or counterclockwise?

Clockwise

3. What part of a plant is responsible for the uptake of nutrients?

Roots

4. A bag of 15-10-20 fertilizer contains what percent nitrogen?

15 percent

Junior Packet 7, Phase B

1. Name 4 ways that a dairy cow loses or excretes water.

- Breathing
- Feces
- Milk
- Sweat
- Urine

2. Name two purposes for a footbath.

- Remove irritants from the foot
- Disinfect the foot
- Cleanse the foot
- Dry and toughen the foot

3. Name 3 legumes that are used in dairy cow rations.

- Alfalfa
- Bird's Foot Trefoil
- Clover
- Lespedeza
- Peanuts
- Peas
- Soybeans
- Vetch

4. Name three signs that a cow is near calving.

- Udder full
- Vulva enlarged or swollen
- Mucous discharge
- Restlessness
- Relaxation of ligaments at tail head
- Leaking milk

Junior Packet 7, Phase C

1. In 2012, more corn was harvested for what use?

Silage

2. In regards to animal handling, where is the animal's blind spot?

Directly behind the animal

3. A letter in a bull's stud code number tells you what about him?

His breed

4. In the life cycle of the fly, what is the first phase?

Egg

5. What does the acronym SMV stand for?

Slow Moving Vehicle

6. What month is national grilled cheese month?

April

7. What popular dairy magazine has the dairy cattle judging contest consisting of 5 picture classes and begins in January each year?

Hoard's Dairyman Cow Judging Contest

8. What is the common term for mastication?

Chewing

9. On the average, how much time does a dairy animal spend ruminating or cud chewing?

7 to 10 hours

10. What is the name of the antibody found, in the largest quantity, in colostrum that a calf needs for immunity?

Immunoglobulin G or IgG

11. Which breed of dairy cattle has on average the longest gestation length?

Brown Swiss

12. In reference to dairy cattle, what does BVD stand for?

Bovine Viral Diarrhea

13. What is the term for the accumulation of fluid in the udder?

Edema

14. What metabolic disease is caused by low blood calcium?

Milk fever

15. What class of vitamins does niacin fall into?

B vitamins

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

5 feet

**2013 NY District Junior
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Junior Packet 8, Phase A

1. Mange or scabies is a contagious skin disease caused by what type of organism: a mite, a protozoa, or a flea?

Mite

2. What happens to the body weight of an early lactation dairy cow when she enters the negative energy balance phase: it increase, it decreases, or it stays the same?

It decreases

3. During cold weather, what happens to a calf's need for energy: it increases, it decreases, or it stays the same?

It increases

4. No till cropping programs help reduce soil erosion-true or false.

True

Junior Packet 8, Phase B

1. Name three environmental factors that can lead to thermal stress.

- Temperature (heat or cold)
- Humidity
- Wind
- Solar Radiation

2. Name 3 signs of mastitis.

- Heat
- Pain
- Redness or swelling of affected quarter(s)
- Reduced milk production
- Water milk
- Bloody or grassy milk clumps
- Fever

3. Pneumonia is the second largest cause of calf deaths each year. List four symptoms of pneumonia.

- Fever
- Depression
- Off-feed
- Mild diarrhea
- Nasal and eye discharge
- Coughing
- Rapid, shallow breathing
- Labored breathing
- Muscle and joint soreness
- Crusty muzzle

4. Name the four stomachs and the functions of each.

- Rumen – fermentation
- Reticulum – collect hardware
- Omasum – water absorption
- Abomasum – enzyme secretion

Junior Packet 8, Phase C

1. What are the tiny fingerlike projections that line the wall of the rumen called?

Papillae

2. Which nation leads the world in the number of cows and water buffalo used for milk production?

India

3. What term refers to the corn stalk after the ear is removed?

Corn stover

4. The act of taking a young animal off of milk as the main source of nutrition is called what?

Weaning

5. Who invented pasteurization?

Louis Pasteur

6. According to the PDCA dairy cow unified score card, how many points are allotted for dairy strength?

25 points

7. What organelle of the cell is DNA found in?

Nucleus

8. What does the word carcinogenic mean?

Cancer causing

9. What is the actual amount of energy the body can use for growth, lactation, reproduction, and body maintenance?

Net energy

10. If dry hay is considered a forage, then grain is considered what?

A concentrate

11. What does the acronym PDCA stand for, in regarding to dairy cattle?

Purebred Dairy Cattle Association

12. What is the name of the enzyme used to coagulate protein when making cheese?

Rennin

13. As of 2010, the Dietary Guidelines for Americans has changed. Now we are to follow an illustration of the five food groups arranged in the form of a place setting. What is this illustration called?

My Plate

14. Locomotion scoring is used to identify cows with what physical condition?

Lameness

15. What is the primary acid found in the abomasum?

Hydrochloric acid

16. A pregnant cow will generally have higher concentrations of which hormone during pregnancy compared to non-pregnant cows?

Progesterone

**2013 NY District Junior
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Extra Questions**

1. The CME is where block and barrel cheese, butter futures, and Class III and Class IV milk futures are traded. What do the initials CME stand for?

Chicago Mercantile Exchange

2. Feeding an excess of what is the principal cause of over conditioning in heifers?

Energy, Carbohydrates, or Fats

3. What part of the cow does founder affect?

The feet/lower leg

4. What is the normal birth presentation of a calf?

Front feet first and head between the feet

5. This dried dairy food is a by-product of the manufacturing of sugar from sugar beets. Name the dairy feed described here.

Dried beet pulp

6. What are you estimating when you measure a cow's heart girth?

Her weight

7. In what year was the pulsator invented?

1895

8. What is the single largest expense on a dairy farm?

Feed

9. At what temperature should semen be thawed?

95 degrees Fahrenheit

10. What fast food chain recently vowed to not use products from pigs in gestation crates and poultry raised in cages?

Burger King

11. What is another name for ascorbic acid?

Vitamin C

12. When do dairy cattle drink the most water?

As soon as cows leave the milking parlor or when cows consume large amount of dry matter (at feeding)

13. What is the name of the mineral matter present in feed?

Ash

14. In the area of business management, what is the name given to an estimate of the revenue, costs, and net income of a farm unit or enterprise?

Budget

15. What can both the dairy cow and plants make from some form of nitrogen?

Protein

16. The creamy color seen in high butterfat milk is due to the presence of what substance in milk?

Carotene (carotenoid)

17. What body system is affected by osteoporosis?

Skeletal system

18. Which class of dairy products includes fluid cream products, yogurt, and manufactured products?

Class II

19. What state leads the nation in milk production?

California

20) What is another name for enteritis in calves?

Scours

Team

20. What are the three segments of the small intestine?

Duodenum
Jejunum
Ileum

21. Mastitis causing organisms can be divided by their source. What are the two sources of these organisms?

Environmental
Contagious