

# 2019 NYS Regional 4-H Junior Dairy Bowl Contest

## Junior Packet 1, Phase A

1) What is the single biggest expense when it comes to producing milk?

Feed

2) What term describes the return of the uterus to normal function after calving?

Involution

3) What is known as the principal protein in milk?

Casein

4) What is another name for the building blocks of proteins?

Amino Acids

## Junior Packet 1, Phase B

1) Name 3 factors that influence the amount of water consumed by a dairy cow

Body size

Environmental temperature/climate

Water temperature

Water quality

Relative humidity

Diet

Level of milk production

Distance to water

2) Give 2 examples of nutrients contained in feedstuffs

Carbohydrates

Fats

Protein

Minerals

Vitamins

Water

3) What does the acronym FSA stand for?

Farm Service Agency

4) *Name 3 common areas of the farm on which you could implement standard operating procedures*

*Parlor/milk house*

*Calving/Maternity Area*

*Fresh Cow Monitoring*

*Feed Management*

*Farm equipment*

### **Junior Packet 1, Phase C**

- 1) What is the name of the smooth muscle cells in the udder that oxytocin interacts with?

Myoepithelial cells

- 2) What is the name of the dairy cooperative that produces the greatest member milk volume in the United States?

Dairy Farmers of America

- 3) It is recommended that fans be run continuously in the barn once temperatures reach what degree Fahrenheit?

65 - 70 degrees F

- 4) How much stubble should remain after grass forage is cut?

3 to 4 inches

- 5) *What is the primary sugar found in semen?*

*Fructose*

- 6) To maximize efficiency, soil samples should be taken at least every how many years?

3 years

- 7) What is the desired angle of a dairy cow's hoof?

45 degrees

- 8) What acid is the primary one produced during silage's first three weeks in the bunk?

Lactic acid

- 9) *What type of organism causes Infectious Bovine Rhinotracheitis?*

*Virus*

- 10) In what year did sexed semen become commercially available?

2003

**11)** It is best to apply manure in the spring or fall when the soil is below what temperature?

50 to 55 degrees F

**12)** Ash is a measure of which feed component in a ration?

Minerals

**13)** Name the most common form of non-protein nitrogen fed to cows

Urea

**14)** In inches, what is the PDCA maximum allowable limit for topline hair in the show ring?

1 inch

**15)** *What is the name for the muscle at the bottom of the teat that allows for milk retention and let down?*

*Sphincter muscle*

**16)** In what organ is bST produced naturally by the cow?

Pituitary gland

## Junior Packet 1, Team Bonus Questions

1) Name 3 parts of a milking machine

Pulsator

Claw

Vacuum pump

Air tubes/hoses

Milk tubes/hoses

Inflations

2) Name 3 different areas of the farm that contribute waste to the nutrient management program

Feeding area

Housing area

Holding pen

Return alley

Foot baths

Milking parlor

3) What are 3 benefits of properly grouping cows?

Improve cow health

Boost milk production

Raise income over feed costs

4) Name 3 of the 5 major components of milk

Protein (Casein)

Fat

Water

Lactose

Vitamins & minerals

**Junior Packet 2, Phase A**

1) What month is National Grilled Cheese month?

April

2) During hot weather, a cow's body temperature often peaks at what time of day?

Midnight

3) *What did Dr. Harvey Thatcher invent?*

*The milk bottle*

4) How often should a bulk tank be washed and sanitized?

Each time it is emptied



## **Junior Packet 2, Phase B**

**1) Name the four stages of the estrus cycle**

Estrus

Metestrus

Diestrus

Proestrus

**2) Give four observations a dairy nutritionist should take note of when visiting a farm**

Manure consistency

Body condition score of cows

Cud chewing

Foot health

Barn conditions

Resting behavior

Water access and condition

Amount and condition of feed in the bunk

**3) Name two types of storage facilities for silage**

Bunker silo

Trench silo

Upright or tower silo

Oxygen limiting silo

Plastic bag

**4)** Name the 4 Classes of dairy products and the types of dairy products found in each of them.

Class 1 – Fluid milk

Class 2 – Soft products, ice cream

Class 3 – Cheese

Class 4 – Dry/powdered products, butter

## Junior Packet 2, Phase C

1) What calcium deficiency commonly affects the elderly?

Osteoporosis

2) What is the loose skin of the underside of the neck called?

Dewlap

3) What breed is always the last class presented in the Hoard's Dairyman Judging Contest?

Jersey

4) *The Babcock test evaluates levels of which milk component?*

*Fat*

5) In reference to milk, what do the initials FCM stand for?

Fat corrected milk

6) What part of the milking system creates alternating vacuum and air?

Pulsator

7) Vaccines should be stored at what refrigerator temperature?

35-45 degrees

8) Snaplage is produced from what plant?

Corn

9) How old is a calf when it begins to chew its cud?

2-3 weeks old

10) What mineral is required to establish legumes in the soil?

Phosphorous

11) When referring to harvesting all silage, what does TLC stand for?

Theoretical Length of Cut

**12)** Milk that comes straight from the cow, without being processed, is called what?

Raw milk

**13)** In a cow's diet, her major source of energy comes from what class of nutrients?

Carbohydrates

**14)** What breed of cattle most commonly gets milk fever?

Jersey

**15)** Who is the current United States Secretary of Agriculture?

Thomas J. Vilsack

**16)** What ligament provides major support for the udder?

Median suspensory ligament

## Junior Packet 2, Team Bonus Questions

1) Name 3 major feedstuffs used in dairy cattle rations that can currently be genetically modified

Corn

Soybeans

Cotton

Canola

Alfalfa

Sugar beets

2) List 3 reasons why a cow may become lame

Abscess

Foot rot

Infection

Injury

3) Name 3 sources of environmental mastitis-causing organisms

Manure

Bedding

Mud

Water

Feed

**4) Name 3 functions of saliva**

Moisten food

Lubricate food

Act as a buffer

Provide fluid base for nutrients

Provide environment for bacterial growth

### Junior Packet 3, Phase A

- 1) True or False: During milking, it is okay to use the same towel on more than one cow.

False

- 2) True or False: Pulsators with a pulsation ratio such as 70/30 generally milk slower than those with a pulsation rate such as 50/30

False, (Faster)

- 3) True or False: vitamins are classified as either fat-soluble or nutrient-soluble?

False – fat and water soluble

- 4) What does the acronym CIP stand for?

Clean in Place

### **Junior Packet 3, Phase B**

**1) Name 4 signs of estrus in dairy cattle**

Restlessness

Bellowing

Following/smelling other cows

Mounting other cows

Standing to be mounted

Clear mucus discharge

Red/swollen vulva

**2) Name the two major sources of energy for newborn calves**

Lactose

Fat

**3) Name two advantages of calf hutches**

Easily movable

Prevent disease from spreading from calf to calf

Low investment cost

Individual feeding

**4) Name 2 purposes for the drug known as prostaglandin in dairy management**

Estrus synchronization in heifers

Metritis

Induced abortion



### **Junior Packet 3, Phase C**

- 1) If you breed a red and white Holstein cow to a known red carrier sire, what is the percent chance you will get a red calf?

50%

- 2) What is the process by which white blood cells engulf microorganisms?

Phagocytosis/Leukocytosis

- 3) What dairy product does “kefir” most closely resemble?

Yogurt

- 4) What is another name for the subcutaneous abdominal vein?

Milk vein

- 5) How many daughters must be evaluated before a bull proof can be published?

10

- 6) How micro minerals are typically stated or measured?

Parts per million

- 7) How many points are assigned to the Dairy Strength category of the PDCA Dairy Cow Unified Scorecard?

25 points

- 8) As the cow's lactation begins, subclinical hypocalcemia usually occurs how many hours after calving?

24 to 72 hours

- 9) How many gallons of water per day does a dry dairy cow drink?

20 to 30 gallons

- 10) What is defined as the three weeks prior to and post calving?

Transition period

**11)** How often is the agricultural census conducted?

Every 5 years

**12)** Cows do not reach mature body weight until which lactation?

Third lactation

**13)** On average it takes how many pounds of whole milk to make a pound of butter?

21.2 pounds

**14)** What does the acronym DCHA stand for?

Dairy Calf and Heifer Association

**15)** What feedstuff commonly used in the dairy industry is a by-product of the sugar beet?

Beet pulp

**16)** Why is it a good idea to clean water troughs, especially in the summer?

To prevent the growth of algae or bacteria

### **Junior Packet 3, Team Bonus Questions**

**1) Name 3 reasons for culling a cow from the herd**

Low production

Mastitis

Reproduction

Udder

Feet and Legs

Disease

Injury

Disposition

**2) Name 3 organisms that can cause scours in young calves**

Cryptosporidium

E. coli

Salmonella

Rotavirus

Corona virus

Coccidia

**3) Name 3 methods of dehorning calves**

Electric dehorner

Caustic paste

Scoops

Tube dehorner

Gouge

Saw

**4) Name 3 different types of milking parlors.**

Herringbone

Parallel

Parabone

Rotary

Side Opening

Flat barn

### **Junior Packet 4, Phase A**

- 1) When loading the mixer wagon, should feed be placed in the front end, middle, or rear end?

Middle

- 2) What is the ideal body condition score for a dry cow?

3.5 (3.25 to 3.75)

- 3) On which side does a displaced abomasum most often occur on?

Left side

- 4) What does the acronym TDN stand for?

Total Digestible Nutrients

## **Junior Packet 4, Phase B**

**1) 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*

**2) If a fertilizer is labeled as 15-10-20, what percent nitrogen does it contain?**

15 percent

**3) Name 3 benefits to using renewable energy on a dairy farm**

Decrease in farm's carbon footprint

Lower farm expenses, lower electric bill

Tax credit

Recycle farm waste output

**4) Which two micronutrients are known to improve immune functions?**

Vitamin E and Selenium

### **Junior Packet 4, Phase C**

- 1) What term is used to describe when a calf does not achieve a specific concentration of immunoglobulin G in its blood serum?

Failure of passive transfer

- 2) A “bypass” protein is a protein source that avoids breakdown in which stomach compartment?

Rumen

- 3) Calves with pneumonia will have a fever and a rectal temperature of over how many degrees?

102.5 degrees F or greater

- 4) What is considered the heart of the milking system?

Vacuum Pump

- 5) In what year was the Journal of Dairy Science first published?

1917

- 6) *What term describes the time from the start to the end of a milking?*

*Milking unit-on time*

- 7) What piece of farm equipment is used to narrow the swath of hay for a baler and to move the wetter material at the bottom of the windrow through the outside?

Rake or merger

- 8) *What reproduction term is used to describe the proportion of breeding-eligible cows in the herd that become pregnant every 21 days?*

*Pregnancy rate*

- 9) *What term describes the fluid accumulation in the udder and the surrounding tissues near the time of calving?*

*Udder edema*

**10)** What is the volume, in gallons, of a cow's rumen?

25 gallons

**11)** Which of the volatile fatty acids produced in the rumen is useful for the production of milk fat?

Acetic acid

**12)** What component in plants gives them their green color?

Chlorophyll

**13)** What does the term "ad libitum" mean?

Free choice

**14)** What is another name for premature luteolysis?

Short estrus cycles

**15)** Lysine and what other amino acid tend to be the most limiting in a dairy cow's ration?

Methionine

**16)** What does the Delvo test detect?

Antibiotic residues in milk



### Junior Packet 4, Team Bonus Questions

1) If a cow is in need of more calcium, what are 3 ways of administering it?

IV

Oral Pills

Drenches

Pastes or Gels

Subcutaneously

Feed supplements

2) Name 3 reasons for which a calf may get scours

Bacterial infection

Drinking/eating too much

Viral infection

3) Name 3 legumes used for grazing or hay

Alfalfa

Clover

Lespedeza

Vetch

Soybeans

Peanuts

4) What are 3 rules that a farm must abide by in order to produce organic milk?

No hormone usage

No antibiotic usage

No mammalian or poultry byproduct usage

100% organic feed

**Junior Packet 5, Phase A**

1) True or False: Animal welfare is directly linked to the size of the dairy operation

False

2) True or False: Fat contains more energy than other feed sources

True

3) True or False: The small fingerlike projections in the small intestine are called villi

True

4) True or False: Limestone is added to dairy rations as a source of magnesium

False

## Junior Packet 5, Phase B

1) What are two of the main functions of the large intestine?

Water absorption

Storage of waste materials

Excrete

2) Name 2 substances commonly added to the water in a foot bath on a dairy farm

Copper sulfate

Zinc sulfate

Tetracycline

Formalin, Formaldehyde

3) Name 4 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

Cost efficient,

Time efficient

4) Name 2 conditions that can happen during the dry period and the first few days post calving, that can result in poor quality colostrum

Cows dry less than 3-4 weeks

Dirty udder and teats

Pre-milking young cows

Leaking cows

Improper milk handling

### **Junior Packet 5, Phase C**

**1)** Which important nutrient is found in the nodules on the roots of legumes?

Nitrogen

**2)** Which disease is likely to develop if calves are raised in a drafty environment?

Pneumonia

**3)** Subclinical rumen acidosis occurs when the pH of the cow's rumen drops below what level?

5.8 pH

**4)** Cows should never have to walk more than how many feet to get a drink of water?

50 feet

**5)** Regarding milk quality, what do the initials LPC stand for?

Laboratory Pasteurization Count

**6)** Define a biennial plant

Lives two years of its life cycle

**7)** What does the acronym VFD stand for?

Veterinary Feed Directive

**8)** Who is the New York State Commissioner of Agriculture and Markets?

Richard Ball

**9)** Stand density and what other factor are the largest influencers of corn yield?

Uniformity

**10)** How much time is required after milking for the teat end to close entirely?

1 hour

**11)** How many gallons of water does a cow need to drink to make one gallon of milk?

4 gallons

**12) What is the respiratory rate of a healthy lactating dairy cow?**

*30 breaths per minute*

**13) How many months of age is the average heifer developed enough to be bred?**

12 to 14 months

**14) In order to kill bacteria in a batch pasteurizer, you have to hold the temperature at 145 F for how long?**

30 minutes

**15) What do the initials UHT stand for in relation to dairy products?**

Ultra-high temperature

**16) Cows in a herringbone milking parlor stand at what angle?**

45-degree angle

## Junior Packet 5, Team Bonus Questions

1) What are the 3 classic signs of a cow with hypocalcemia?

Staggering

Cold ears

Lying with head tucked

Not able to get up

2) What are 3 conditions in which manure can be stored?

Liquid

Slurry

Solids

3) According to the PDCA Showmanship Evaluation Card, what are 3 slight exhibitor discriminations?

Inappropriate halter

Lead strap slightly looped

Sidesteps when leading calf

Has stiff outreached arm

Poor posture

Improper head carriage

Stepping on the animal's front feet, inappropriate size of calf for competitor

Calf's head not turned slightly toward judge when hide is felt

4) Name the 3 of the 4 necessary economic inputs for a dairy farm

Land



Labor

Capital

Management

### **Junior Packet 6, Phase A**

1) Where is the National 4-H Dairy Conference located?

Madison, Wisconsin

2) If a cow is scored 90 when classified, what is she considered?

Excellent

3) What does the acronym ADG stand for?

Average Daily Gain

4) True or False: A preweaned calf should receive 20 to 25 percent of its bodyweight in milk or milk replacer daily.

False

## **Junior Packet 6, Phase B**

**1)** Name 2 ways colostrum can be stored.

Add preservative acid

Fermented

Frozen

Refrigerated

**2)** Name 4 physiological functions of water in the body.

A medium to transport nutrients

To carry waste products to the point of excretion

Functions as a universal solvent

To cool the body at high environmental temperatures

Serves as a fluid to lubricate joints

Serves as a substrate for metabolic reactions

Serves as a fluid base for milk

**3)** Name 3 recommended protein sources for milk replacer

Casein

Modified wheat protein

Dried skim milk

Protein modified soy flour

Dried whey

Soy protein concentrate

Dried whey product

Soy protein isolate

Dried whey protein concentrate

**4)** Name 4 macrominerals.

Calcium

Magnesium

Potassium

Sulfur

Chlorine

Phosphorus

Sodium

### **Junior Packet 6, Phase C**

**1)** What agency is funded by farmer's dairy checkoff dollars in New York State?

American Dairy Association Northeast

**2)** What acid is the precursor to glucose production

Propionic

**3)** Regarding preventing milk fever, what does the acronym DCAD stand for?

Dietary Cation-Anion Difference

**4)** What is the term for mastitis characterized by visible abnormalities in the udder or milk?

Clinical Mastitis

**5)** What hormone can interfere with milk ejection when a cow becomes frightened or upset?

Adrenaline (epinephrine)

**6)** Name one way to increase the starch availability of corn silage that is too dry

Chopping more finely, or processing and ensiling longer

**7)** What is the traditionally recommended length of the dry period for a dairy cow?

45-60 days

**8)** What is the test that detects rancidity in milk?

Acid Degree Value

**9)** One stick of butter is equivalent to how many cups?

$\frac{1}{2}$  cup

**10)** What fast food chain uses the most milk in the United States?

McDonald's

**11)** 1 kilogram is equivalent to how many pounds?

2.2 pounds

**12)** Regarding reproduction, what does the term Anestrus mean?

Failure to have an estrous cycle

**13)** What is the basic unit of inheritance?

Gene

**14)** Regarding animal health, what does the acronym BSE stand for?

## Bovine Spongiform Encephalopathy

**15)** High concentrations of what hormone are necessary to maintain pregnancy?

Progesterone

**16)** What is the temporary gland that forms on the ovary after the ovum is released; also called the 'yellow body'?

Corpus Luteum

## Junior Packet 6, Bonus Questions

1) Name 3 metabolic diseases found in dairy cattle

Displaced abomasum

Ketosis

Laminitis

Milk fever

Retained placenta

2) Name 3 signs of coccidia in calves

Watery scours with flakes of blood

Dull listlessness

Mucus in the feces

Dehydration

Weight loss

3) Name 3 organisms that can cause pneumonia

Bacteria

Molds

Parasites

Viruses

Yeasts

4) Name 3 diseases that can cause abortions in dairy cattle

Brucellosis

Campylobacteriosis (Vibriosis)

Chlamydia

IBR

Leptospirosis

Listeriosis

Neospora caninum

Trichomoniasis





**Junior Packet 7, Phase A**

1) *What vitamin, found in green leafy feeds, is important for the blood clotting process?*

*Vitamin K*

2) What is the term for flushing an embryo from a donor cow and placing it into a recipient cow?

Embryo Transfer

3) What is residual milk?

Milk left in the udder after milking

4) In reference to the dairy cow, which one of the following is located between the dew claw and the thigh? The hock, the knee or the pastern?

Hock

## **Junior Packet 7, Phase B**

**1) Name 4 types of bedding typically used for dairy cattle**

Straw

Sand

Recycled Manure Solids

Newspaper

Sawdust

Shavings

Old Hay

Wood Chips

Almond Hulls

Rubber Mats

Feed By-products

Gypsum

**2) Name 3 internal parasites of dairy cows**

Lung worm

Round worm

Stomach worms

Liver flukes

Coccidian

**3) What are the 3 volatile fatty acids produced by microorganisms in the rumen that are absorbed through the rumen walls?**

Acetate (acetic acid)

Butyrate (butyric acid)

Propionate (propionic acid)

**4) Name 3 ways for testing pregnancy in cows**

Palpation

Testing hormones in milk

Testing hormones in blood

Ultrasound

Bumping

### **Junior Packet 7, Phase C**

- 1) Heifers account for what percent of total farm expenses on many dairy operations?  
15-20 percent
- 2) What part of the plant takes up nutrients?  
The Roots
- 3) Heifers should be what percent of their body weight at first breeding?  
55%
- 4) Regarding metabolism, what term is given when an early lactation dairy cow loses body weight?  
Negative Energy Balance (Hoard's Dairyman)
- 5) *What are supernumerary teats in dairy cattle?*  
*Extra teats that are nonfunctional (Holstein Foundation)*
- 6) No matter what solution is used in a footbath, the footbath needs to be a minimum of how many feet long?  
10 ft. long (Hoard's Dairyman)
- 7) What type of fly is responsible for grubs or warbles in cattle?  
Heel fly
- 8) What famous individual is responsible for inventing the continuous cream separator in 1878?  
Dr. Gustav De Laval
- 9) What year was the World Dairy Expo founded?  
1967
- 10) How many pounds of whole milk does it take to make one pound of cheese?  
10 pounds of whole milk
- 11) What hormone is released by the pineal gland in response to longer day length?  
Melatonin
- 12) When was the National Dairy Shrine Founded?  
1949
- 13) What is the tissue that surrounds a cow's heart?  
Pericardium
- 14) What is the name of the document that establishes the standards for Grade A milk?

Pasteurized Milk Ordinance (PMO)

**15)**What is the name of the natural protective substance that lines the inside of the streak canal?

Keratin

**16)** A toxic substance produced by a mold is called.

Mycotoxin

## Junior Packet 7, Bonus Questions

1) Name 3 parts of a cow's reproductive tract

Vulva

Vagina

Cervix

Uterus

Oviduct

Ovary

2) Inbreeding can have serious effects on dairy cattle, name 3 consequences of inbreeding

Decreased general vigor

Decreased production

Decreased reproductive performance

Increased calf mortality

Increasing similarity between animals

Smaller mature size

More recessive genes exposed

Slower growth rate

3) Name 3 laboratory tests available through DHI

Butterfat percentage

Solids-not-fat percentage (SNF)

Protein percentage

Milk urea nitrogen (MUN)

Johne's disease

4) Name 3 sources of on-farm milk contamination

Air (dust)

Dirt (outside of the cow)

Feed

Interior of udder

Antibiotics

Equipment

Insects

Water

**Junior Packet 8, Phase A**

1) What is the common name for Traumatic Gastritis?

Hardware Disease

2) Of the dairy breeds, which one has the longest gestation period?

Brown Swiss

3) What is the liquid left over from making cheese?

Whey

4) What is the first phase in the life cycle of the fly?

Egg



## **Junior Packet 8, Phase B**

**1) Name 2 uses of ultrasound in managing the reproduction of your dairy herd**

- Pregnancy Determination
- Determine Embryonic Losses
- Monitor Cystic Ovaries
- Determine the Sex of the Embryo

**2) Name 3 advantages of intensive rotational grazing**

- Low input costs
- Low labor requirement
- Even manure distribution
- Reduced soil erosion
- Improved weed control

**3) Name the 4 phases of a standard milking equipment cleaning protocol**

- Pre-rinse
- Chlorinated alkaline cleaning
- Acid Rinse
- Sanitization

**4) Name 3 advantages of a high-quality milk from a dairy producer's point of view**

- Greater profitability
- Low treatment costs
- Increased milk yield
- Reduced labor and labor costs
- Low culling rates
- Larger milk checks due to improved milk per cow and premiums

### **Junior Packet 8, Phase C**

- 1) How much does a bushel of corn weigh?  
56 pounds
- 2) Regarding reproduction what does the acronym IVF stand for?  
In Vitro Fertilization
- 3) What is the hormone produced by the pancreas that promotes cell growth and division?  
Insulin
- 4) What year did the Dairy Herd Information or DHI testing program start?  
1926
- 5) What is the ideal environmental temperature range for dairy cattle?  
25 to 65°F
- 6) What government position regulates the federal milk marketing order?  
The Secretary of Agriculture
- 7) What is the structure that holds the uterus and ovaries in their proper position?  
Broad Ligament
- 8) What is an area of grassland installed between cropland or feedlots and waterways to take up nutrients and prevent nutrients from running off into water?  
Buffer Strips
- 9) During parturition what part of the calf is seen first?  
Front feet
- 10) Where was the first dairy cooperative in the United States organized?  
Goshen, Connecticut
- 11) What is the most common source of Leptospira bacteria?  
Rodents
- 12) What does the acronym FSIS stand for?  
Food Safety Inspection Service
- 13) What is a free martin?  
Sterile heifer born twin to a bull
- 14) What is the most effective management tool to control flies on a dairy farm?  
Sanitation

**15)** In what state was the first cheese factory built?

New York

**16)** What is the technical term for a fertilized ovum?

Zygote

## Junior Packet 8, Bonus Questions

1) Name 3 conditions that can result in poor quality colostrum

Cow is dry less than 3-4 weeks

Dirty udder and teats

Pre-milking

Young cow

Leaking teats

2) Name 3 physiological functions of water in the body

A medium to transport nutrients

Functions as a universal solvent

Serves as a fluid to lubricate joints

Serves as a base fluid for milk

To carry waste products to the point of excretion

To cool the body at high environmental temperatures

Serves as a substrate for metabolic reactions

3) Name the 3 reasons to treat every quarter of every cow at drying off

Higher concentration of antibiotics (than lactating products)

Antibiotics remain longer

No discarding of saleable milk

Prevent new infections

4) *Cryptosporidium parvum* is a protozoan parasite that causes diarrhea in calves, humans and other animals, name 3 management practices that can reduce cryptosporidiosis in newborns

Provide clean, dry areas for cows to calve

Feed colostrum using a clean bottle and sanitized nipple

Provide clean, dry pens for calves

Allow pens to thoroughly dry between calves

Feed and care for sick calves last

## Extra Questions for 2019 NYS Regional 4-H Junior Dairy Bowl Contest

- 1) When determining a Comprehensive Nutrient Management Plan, the first step is to determine what?

Amount of waste produced

- 2) How many ounces of milk are in one serving?

8 ounces

- 3) What off-flavor of milk is characterized as chalky, cardboard-flavored, or bland?

Oxidized

- 4) When is the most effective time to treat mastitis infections?

At drying off

- 5) The cryoscope measures what in milk to determine if water has been added?

Freezing point

- 6) What does the acronym CMT stand for?

California Mastitis Test

- 7) What is the most common pathogen found in raw milk?

E. coli

- 8) After how many days after calving is a cow's milk considered acceptable for human consumption?

3 days

- 9) Proteases break down which milk component?

Proteins

- 10) What is the recommended goal for the percent of clinical cases of mastitis per month in a herd?

1 Percent

**11)** What is the milk called which remains in the udder at the end of milking?

Residual milk

**12)** What is the largest cell in the body of a mature cow?

Oocyte

**13)** Where does the United States rank in the consumption of ice cream and related products?

First

**14)** Which breed of dairy cattle originated in Scotland?

Ayrshire

**15)** The acute effects of pesticide exposure will show up within how many hours?

12 hours

**16)** What month of the year is National Ice Cream Month?

July

**17)** Name the part of the cow located just forward of the chine

Withers

**18)** What percent of all dairy cattle hoof lesions occur in the rear limbs?

90%

**19)** How many pounds of blood are pumped through the udder to make one pound of milk?

400 pounds

**20)** Cortisol is a stress hormone secreted by which gland?

Adrenal

**21)** After hybrid selection and packing density, what is the third most important thing you can do to ensure the quality of forages in bunker silos?

Get a good seal

**22)** MilkPEP's "Got milk?" slogan re-branded with which new slogan in 2014?

Milk life

**23)** In which country did Bovine spongiform encephalopathy originate?

Great Britain

**24)** Fat has how many times more energy than carbohydrates?

2.25

**25)** When is the peak period of silo gas formation, in weeks?

2 to 3 weeks after filling

**26)** When breeding cows, which type trait has the highest heritability?

Stature

**27)** How many chromosomes are found in the gamete of a dairy cow?

60

**28)** Name 3 causes of embryonic loss

Nutrition

Chromosomal abnormalities

Metritis

Abnormal hormone levels

Infection

Immunological abnormalities

Heat stress effects