

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. In certain situations, dairy cattle nutritionists may recommend feeding a certain type of a **DCAD** (Dietary Cation-Anion Difference) diet for close-up dry cows. Would the nutritionist recommend feeding an anionic or a cationic diet to help prevent milk fever?

ANS: Anionic diet

2. What is the term used to describe 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)

3. Which of the following combine to form lactose?

- a) glucose and fructose      b) glucose and galactose      c) glucose and dextrose
- d) glucose and aspartame

ANS: b) glucose and galactose

4. The disease Cryptosporidiosis ("crypto") in calves is caused by a protozoan parasite. Which one of the following sections of the digestive system does "crypto" primarily affect?

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

ANS: b) small intestine

5. In reference to dairy herd management, which of the following describes morbidity rate?

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

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

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. In the metabolism process, what is the term for a protein that acts as a catalyst in starting or speeding up certain chemical reactions?**

ANS: enzyme

**2. In reference to milk quality testing, what do the initials P.I. stand for?**

ANS: Preliminary Incubation

**3. When posing a lactating dairy cow in the show ring, the rear leg closest to the judge should be in which of the following positions?**

a) forward    b) backward    c) it does not matter

ANS: a) forward

**4. When do we normally start feeding dairy cows a "transition diet"?**

a) 2 months after calving    b) in late lactation just before drying off the cow

c) 2 to 3 weeks before the expected calving date

ANS: c) 2 to 3 weeks before the expected calving date

**5. In reference to a dairy cow, which one of the following is located between the dew claw and the thigh?**

a) thurl      b) knee      c) hock      d) pastern

ANS: c) hock

**6. What is the name of the group of hormones, produced in the uterus, that causes regression of the corpus luteum, and contractions of the uterus.**

ANS: prostaglandins

**7. Which one of the following describes casein?**

**a) an amino acid    b) an enzyme    c) the primary protein found in milk    d) a fatty acid**

ANS: c) the primary protein found in milk

**8. A deficiency of which of the following can cause “white muscle disease” in calves?**

**a) Vitamin A    b) Selenium    c) Vitamin C    d) Vitamin D**

ANS: b) Selenium

**9. Which of the following is the primary reason that colostrum from older cows is normally higher in antibodies?**

**a) older cows produce more milk    b) older cows have given birth to more calves  
c) older cows have had more exposure to disease and more development of antibodies**

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

**10. Which one of the following is the CMT test used for?**

**a) to detect metritis    b) to detect foot rot    c) to detect mastitis    d) to detect mycotoxins**

ANS: c) to detect mastitis

**11. What is the name of the cells that surround the alveolus and contract during milking?**

ANS: Myoepithelial cells

**12. What is the maximum somatic cell count (cells/ml) allowed in milk that is sold in the U.S.?**

**a) 250,000    b) 450,000    c) 650,000    d) 750,000**

ANS: d) 750,000

**13. Which one of the following is the name of the condition in which a cow comes into heat every few days?**

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

ANS: c) cystic

**14. Which of the following are the two primary gases produced in the rumen?**

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

ANS: c) methane and carbon dioxide

**15. A dairy cow is producing 90 pounds of milk per day that contains 4% fat. How much fat is she producing daily?**

- a) 4 pounds   b) 4.6 pounds   c) 3.6 pounds   d) 3 pounds

ANS: c) 3.6 pounds

**16. When raising dairy heifers, which of the following stages of growth is the most costly period?**

- a) 100 to 200 pounds   c) 700 to 800 pounds  
b) 300 to 400 pounds   d) 1,200 to 1,300 pounds

ANS: a) 100 to 200 pounds

**17. In North Carolina, which of the following generally happens to dairy cow conception rates in the summer?**

- a) they stay the same   b) they decline   c) they increase

ANS: b) they decline

**18. Which of the following is another name for the metabolic disorder acetonemia?**

- a) brucellosis   b) leptospirosis   c) ketosis   d) acidosis

ANS: c) ketosis

19. Which one of the following is the major cause of death in calves that are scouring?

- a) pneumonia      b) malnutrition      c) dehydration      d) navel ill

ANS: c) dehydration

20. Which one of the following is the most costly form of mastitis?

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

ANS: d) subclinical

**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. Approximately how much water does normal whole milk contain?

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

ANS: c) 87.5%

2. In the USDA food pyramid guidelines, how many servings of dairy products per day are recommended for people?

- a) 1      b) 2      c) 3      d) 4

ANS: c) 3

3. Which of the following hormones is released when a cow is frightened?

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

ANS: a) adrenaline (epinephrine)