**Utah FFA State Finals**

**2017 Meat Science and Technology CDE**

**Written Exam- Key**

Directions: Read all questions and choose the best possible answer. There are 30 multiple choice questions on this written exam.

1. What are two advantages of vacuum packaging meat?
   1. Decreased length of time meat can be kept AND decreased shrinkage
   2. Decreased length of time meat can be kept AND increased shrinkage
   3. **Increased length of time meat can be kept AND decreased shrinkage**
   4. Increased length of time meat can be kept AND increased shrinkage
2. Which of the following is a process of identifying possible sources of food adulteration during processing? It must be in place in all federal and state meat processing facilities.
   1. AMS
   2. OSHE
   3. NASA
   4. **HACCP**
3. Which component of meat is used to synthesize vitamin D, create hormones, and form bile salts to aid in fat digestion?
   1. Copper
   2. **Cholesterol**
   3. Folic Acid
   4. Protein
4. Which is the thin myofilament in the sarcomere?
   1. **Actin**
   2. Bundle
   3. Fiber
   4. Myosin
5. In the United States, growth-promoting implants are approved for use in
   1. Cattle and Swine
   2. **Cattle and sheep**
   3. Poultry
   4. Sheep and Swine
6. Which common foodborne infection has an onset time of three to four days and is a result

of undercooked meat?

* 1. **E. coli**
  2. Perfringens
  3. Staphylococcal
  4. Haemophilosis

1. Which foodborne illness is most directly related to insufficiently cooked or re-heated meat and/or eggs?
   1. *E. column*
   2. **Salmonellosis**
   3. *Staphylococcal*
   4. Trichinosis
2. All of the following are processed meats EXCEPT
   1. Cold cuts
   2. Frankfurters
   3. **Fresh ham slice**
   4. Fresh sausage
3. How are phosphates utilized in processed meats?
   1. To combine lean and fat for improved product texture
   2. To create flavor through fermentation
   3. **To increase watering holding capacity**
   4. To maintain color in mixes
4. What is the proper term for- pathogenic bacteria was in food product consumed and made the consumer sick after eating?
   1. Food inebriation
   2. Food intoxication
   3. Food toxicity
   4. **Food infection**
5. When did the FDA require nutritional labels to include trans-fat content?
   1. 1902
   2. 1985
   3. **2002**
   4. 2009
6. Which of the following are synthetic chemicals which shift nutrients away from fat production to the promotions of lean muscle growth?
   1. Antibiotics
   2. **Beta-agonists**
   3. Gama-hormones
   4. Growth-Promoting Implants
7. The physiological age of a lamb carcass can be determined by evaluating the joints of the \_\_\_ and ribs.
   1. Back shanks
   2. **Front shanks**
   3. Hips
   4. Scapula
8. Estradiol, Progesterone, and Testosterone are examples of gender-based \_\_\_.
   1. Antibiotics
   2. Beta-agonists
   3. **Hormones**
   4. Sterols
9. In beef, which maturity group consists of animals between 9-30 months of age?
   1. **A**
   2. B
   3. C
   4. D
10. Which of the following would be classified as “Lamb”?
    1. 1 break joint, 1 spool joint
    2. **2 break joints**
    3. 2 spool joints
    4. Joints are not evaluated when determining the physiological age of lamb.
11. Passed in 1967, this legislation was an amendment to the Meat Inspection Act. It requires state inspection of processing facilities to equal or exceed federal inspection standards.
    1. Packer and Stockyards Act
    2. Pure Food and Drug Act
    3. State Inspection Act
    4. **Wholesome Meat Act**
12. All of the following are essential amino acids EXCEPT
    1. Histidine
    2. **Iodine**
    3. Lysine
    4. Threonine
13. What are the amounts of a drug, antibiotic or hormone left behind in a product after the withdrawal period has passed?
    1. Enduring Amounts
    2. Lingering Effects
    3. **Residual Levels**
    4. Residual Stages
14. The foodborne bacteria that has an onset time of 12-72 hours and ten percent of all cases are fatal is
    1. Staphylococcal
    2. Salmonellosis
    3. **Botulism**
    4. Escherichia
15. Which of the following statements about safe handling instructions is not true
    1. They are regulated by the FSIS
    2. They are the same on all types of raw meat and poultry
    3. **They are required by the FSIS on all labels of raw meat and poultry**
    4. They can be found on all meat and poultry packaged by federally inspected plants
16. The minimum internal cooking temperature of all pork roasts, steaks and chops is
    1. 140 degrees Fahrenheit
    2. 160 degrees Fahrenheit
    3. **145 degrees Fahrenheit**
    4. 120 degrees Fahrenheit
17. Which of the following is not a commonly known food borne pathogenic bacteria
    1. *Campylobacter jejuni*
    2. ***Campylobacter coli***
    3. *Salmonella spp.*
    4. *Escherichia coli*
18. After a power outage, meat in the refrigerator is safe for \_\_\_\_\_\_\_\_\_\_\_\_ hours, unless meat temperatures rise above 40 degrees Fahrenheit for more than two hours.
    1. 4 to 6
    2. **6 to 8**
    3. 4 to 10
    4. 6 to 10
19. What is the approximate live age (in months) of a cow with 70-90% ossification in the cartilaginous buttons on the sacral and lumbar vertebrae?
    1. 30-42 months
    2. 42-72 months
    3. **72-96 months**
    4. More than 96 months
20. Three ounces of lean meat contains at most \_\_\_\_\_ calories.
    1. 100
    2. **200**
    3. 300
    4. 400
21. Halal is Arabic for ….?
    1. Properly prepared
    2. **Permitted**
    3. Allowed
    4. Both A & C
22. What grade would an “A” maturity carcass with a marbling score of Modest 50 be?
    1. Select +
    2. **Choice o**
    3. Choice +
    4. Prime –
23. The foodborne bacteria that causes nausea, occasional vomiting, abdominal pain and has an onset time of 8-24 hours is
    1. Salmonellosis
    2. **Perfringens**
    3. Listeriosis
    4. Trichinosis
24. Which of the following foodborne illness results from food intoxication
    1. Salmonella spp.
    2. **Clostridium botulinum**
    3. Staphylococcal aureus
    4. Escherichia coli