

**National FFA Organization**  
2014 Meats Evaluation & Technology CDE  
**Written Test**

***Instructions: Carefully read each item and possible answers. Mark the correct answer on the correct CDE form. Completely fill the chosen ovals to indicate your answers.***

1. What are the recommended preventative measures to avoid *Perfringens* food infection?
  - A. Canning at 176°F
  - B. Cooking ground meat to an internal temperature of 140°F
  - C. Cooking pork to at least 137°F
  - D. Prompt refrigeration and proper sanitation

(CEV Meat Science & Food Safety slide #188)

2. Cold cuts contain only \_\_\_ meat unless stated on the label.

- A. Cured
- B. Fresh
- C. Skeletal
- D. Smoked

(CEV Meat Science & Food Safety slide #154)

3. Which of the following is food intoxication?

- A. Pathogenic bacteria grew in the food, produced a toxin and made the consumer sick after eating.
- B. Pathogenic bacteria was eaten by the consumer who then became sick.
- C. Pathogenic bacteria was in a food product consumed and made the consumer sick after eating.
- D. Pathogenic bacteria was treated by a toxin that made the consumer sick.

(CEV Meat Science & Food Safety slide #184)

4. Freezer storage can result in all of the following EXCEPT ...

- A. A deterioration of meat quality
- B. An improved quality grade
- C. Freezer burn
- D. Oxidative changes in the meat

(CEV Meat Science & Food Safety slide #106)

5. Which of the following is added to processed meat products to prevent the growth of *Clostridium botulinum*?
- A. NaCl
  - B. NaCO
  - C. NaNO<sub>2</sub>
  - D. NASSP

(CEV Meat Science & Food Safety slide #159)

6. Safety guidelines indicate that cooked leftovers should be used within \_\_\_\_ days.
- A. 4
  - B. 6
  - C. 8
  - D. 14

(CEV Meat Science & Food Safety slide #122)

7. What are CCPs?
- A. Combustible Creation Points
  - B. Crisis Causing Products
  - C. Critical Control Points
  - D. Cross Contamination Products

(CEV Meat Science & Food Safety slide #176)

8. Which cooking method involves completely covering the meat with liquid and cooking extensively?
- A. Braising
  - B. Roasting
  - C. Stewing
  - D. Stir Frying

(CEV Meat Science & Food Safety slide #148)

9. What are compounds which absorb oxygen, reducing or preventing the oxidation of food?
- A. Aerobics
  - B. Anaerobics
  - C. Antioxidants
  - D. Tenderizers

(CEV Meat Science & Food Safety slide #160)

10. It is recommended to let meat sit for at least three minutes after removing from heat to allow temperature to “rest” and prevent \_\_\_ loss.

- A. Blood
- B. Heat
- C. Juice
- D. Nutrient

(CEV Meat Science & Food Safety slide #129)

11. Which meat cookery method is best recommended for large cuts?

- A. Deep fat frying
- B. Pan frying
- C. Roasting
- D. Stir frying

(CEV Meat Science & Food Safety slide #140)

12. After a power outage, how long is meat safe in a freezer?

- A. 2 hours maximum
- B. 2 days if the freezer is full
- C. 2 days if the freezer is mostly empty
- D. 5 days if the door remains closed

(CEV Meat Science & Food Safety slide #111)

13. Generally, moist cooking methods should be used on the following meat cuts.

- A. Ground products
- B. Higher quality cuts
- C. Less tender cuts
- D. More tender cuts

(CEV Meat Science & Food Safety slide #131)

14. All of the following are suggested methods of defrosting meat EXCEPT

- A. In a microwave oven
- B. In a refrigerator
- C. In cold water
- D. On the counter

(CEV Meat Science & Food Safety slide #117)

15. Where in the refrigerator should ground beef be safely stored?

- A. On the bottom shelf in a cardboard container.
- B. On the bottom shelf in a plastic bag.
- C. On the top shelf in a cardboard container.
- D. On the top shelf in a plastic bag.

(CEV Meat Science & Food Safety slide #119)

16. Which of the following are also known as luncheon meats?

- A. Canned Cuts
- B. Cold Cuts
- C. Core Cuts
- D. Corned Cuts

(CEV Meat Science & Food Safety slide #154)

17. Which of the following is listed as a meat tenderizer?

- A. Bromelain
- B. Corn Syrup
- C. Di-glyceride
- D. Parsley

(CEV Meat Science & Food Safety slide #168)

18. Safe handling instructions with meat are regulated by

- A. EPA
- B. FFA
- C. FSIS
- D. OSHA

(CEV Meat Science & Food Safety slide #114)

19. Which method of defrosting will result in the greatest loss of juiciness?

- A. In a refrigerator
- B. In cold water
- C. In the microwave
- D. On the counter

(CEV Meat Science & Food Safety slide #118)

20. Deep fat frying meat is best completed when the fat is between \_\_\_\_ and \_\_\_\_.

- A. 140°F *and* 160°F
- B. 250°F *and* 260°F
- C. 300°F *and* 330°F
- D. 350°F *and* 360°F

(CEV Meat Science & Food Safety slide #136)

21. Grilling is the recommended cookery method for large cuts of meat.

- A. True
- B. False

(CEV Meat Science & Food Safety slides #137 & 140)

22. Dextrose is primarily used as a meat tenderizer.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #166 & 168)

23. Starter cultures are bacteria used for fermentation to create flavor and impart certain properties in processed meats.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #170)

24. Meat irradiation results in radioactive food.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #179)

25. Skeletal meat is defined by the USDA as the edible muscle tissue of an animal attached to the bone.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #156)

National FFA Organization  
2014 Meats Evaluation & Technology CDE  
Written Test

25 Items @ 2 points per item = 50 points

**KEY**

<u>Page 1</u>	<u>Page 2</u>	<u>Page 3</u>	<u>Page 4</u>	<u>Page 5</u>
1. D 2. C 3. A 4. B	5. C 6. A 7. C 8. C 9. C	10. C 11. C 12. B 13. C 14. D	15. B 16. B 17. A 18. C 19. C	20. D 21. B 22. B 23. A 24. B 25. A

**National FFA Organization**  
 2015 Meats Evaluation & Technology CDE  
**Written Test**

***Instructions: Carefully read each item and possible answers. Mark the correct answer on the correct Meats CDE form. Completely fill the chosen oval to indicate your answer. Note: Multiple-Choice items are worth 3 points each. True/False items are worth 1 point each.***

1. In beef, which maturity group consists of animals between 9-30 months of age?
  - A. A
  - B. B
  - C. C
  - D. D

(CEV Meat Science & Food Safety slide #91)

2. The Meat Inspection Act was enacted to prevent the adulteration and misbranding of meat products. When was the Meat Inspection Act passed?
  - A. 1862
  - B. 1906
  - C. 1921
  - E. 1958

(CEV Meat Science & Food Safety slide #10)

3. Approximately \_\_\_ of graded beef in the United States grades at USDA Prime.
  - A. 0%
  - B. 2%
  - C. 12%
  - D. 22%

(CEV Meat Science & Food Safety slide #98)

4. Which of the following is the hind leg of a hog that has not been smoked and may be sold as bone-in or boneless?
  - A. Cured Ham
  - B. Fresh Ham
  - C. Smoked Ham
  - D. Water-Added Ham

(CEV Meat Science & Food Safety slide #68)

5. Which of the following would be classified as “Lamb”?
  - A. 1 break joint, 1 spool joint
  - B. 2 break joints
  - C. 2 spool joints
  - D. Joints are not evaluated when determining the physiological age of lamb.

(CEV Meat Science & Food Safety slide #95)

6. What are two advantages of vacuum packaging meat?
  - A. Decreased length of time meat can be kept AND decreased shrinkage
  - B. Decreased length of time meat can be kept AND increased shrinkage
  - C. Increased length of time meat can be kept AND decreased shrinkage
  - D. Increased length of time meat can be kept AND increased shrinkage

(CEV Meat Science & Food Safety slide #72)

7. Immediately preceding harvest, the meat animal must not have received a compound or drug. What is the term for this prescribed period of time?
- A. Extraction Period
  - B. Prescribed Period
  - C. Waiting Period
  - D. Withdrawal Period

(CEV Meat Science & Food Safety slide #34)

8. Which component found in meat contains the most energy per gram?

- A. Fat
- B. Iron
- C. Protein
- D. Water

(CEV Meat Science & Food Safety slide #49)

9. Which of the following are beef carcass maturity scores?

- A. 1, 2, 3, 4, 5
- B. A, AA, AAA
- C. A, B, C, D, E
- D. Prime, Choice, Select

(CEV Meat Science & Food Safety slide #90)

10. When was the first major outbreak of *Escherichia coli* 0157:H7? It was traced to ground beef from a major fast food chain.

- A. 1983
- B. 1993
- C. 2003
- D. 2013

(CEV Meat Science & Food Safety slide #24)

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.

- A. Packer and Stockyards Act
- B. Pure Food and Drug Act
- C. State Inspection Act
- D. Wholesome Meat Act

(CEV Meat Science & Food Safety slide #15)

12. Which piece of legislation was passed in 1906 to prevent the adulteration and misbranding of meat products?

- A. Adulteration Act
- B. Humane Methods of Slaughter Act
- C. Humane Slaughter Act
- D. Meat Inspection Act

(CEV Meat Science & Food Safety slide #10)



13. What meat originates from animals which have only consumed certified organic feed? Further, the animals have received no antibiotics.
- A. Certified Animate
  - B. Certified Irradiated
  - C. Certified Natural
  - D. Certified Organic

(CEV Meat Science & Food Safety slide #82)

14. All of the following are essential amino acids EXCEPT
- A. Histidine
  - B. Iodine
  - C. Lysine
  - D. Threonine

(CEV Meat Science & Food Safety slide #47)

15. What term is the total weight of the food product minus the weight of the packaging materials?
- A. Gross Weight
  - B. Net Weight
  - C. Packaged Weight
  - D. Serving Weight

(CEV Meat Science & Food Safety slide #74)

16. What is meat from a sheep more than one year of age that has a more intense flavor?
- A. Pork
  - B. Lamb
  - C. Mutton
  - D. Cabrito

(CEV Meat Science & Food Safety slide #87)

17. What do the letters HACCP represent?
- A. Hazard Analysis Classification Control Point
  - B. Hazard Analysis Critical Control Point
  - C. Holistic Analysis Critical Control Processes
  - D. Humane Analysis Classification Control Procedures

(CEV Meat Science & Food Safety slide #20)

18. Which of the following is a USDA Quality Grade for lamb?
- A. Commercial
  - B. Good
  - C. Select
  - D. Standard

(CEV Meat Science & Food Safety slide #98)

19. All of the following are examples of retail packaging EXCEPT
- A. Boxed Beef
  - B. Modified Atmosphere Packaging
  - C. Overwrap
  - D. Vacuum Packaging

(CEV Meat Science & Food Safety slide #69)

20. Which of the following is a primal cut of beef?

- A. Breast
- B. Chuck
- C. Ham/Leg
- D. Shoulder

(CEV Meat Science & Food Safety slide #62)

21. Typically, an ounce of meat contains \_\_\_\_ grams of protein.

- A. 3
- B. 7
- C. 13
- D. 17

(CEV Meat Science & Food Safety slide #48)

22. Which of the following involves vacuum packaging meat in moisture-proof vapor film, then refrigerated for various time periods?

- A. Dry aging
- B. Organic
- C. Smoking
- D. Wet aging

(CEV Meat Science & Food Safety slide #80)

23. Generally, which statement is true of adverse weather conditions on livestock?

- A. Extreme weather conditions have no effect on livestock feed consumption.
- B. In exceptionally cold weather, animals will consume less feed.
- C. In exceptionally hot weather, animals will consume less feed.
- D. In exceptionally hot weather, animals will consume more feed.

(CEV Meat Science & Food Safety slide #42)

24. Which of the following is the thick myofilament in the sarcomere?

- A. Actin
- B. Bundle
- C. Minimere
- D. Myosin

(CEV Meat Science & Food Safety slide #59)

25. What are the amounts of a drug, antibiotic or hormone left behind in a product after the withdrawal period has passed?

- A. Enduring Amounts
- B. Lingering Effects
- C. Residual Levels
- D. Residual Stages

(CEV Meat Science & Food Safety slide #35)

26. The Wholesome Meat Act requires a federal, USDA or state inspection mark. The federal or state inspection mark indicates wholesomeness, not quality.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #16)

27. “Rib” is a primal cut of pork.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #63)

28. “Certified Angus Beef<sup>®</sup>” is an example of a branded program.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #78)

29. Isoleucine is an essential amino acid found in meat.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #47)

30. Growth-promoting implants decrease feed efficiency.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #28)

National FFA Organization  
 2015 Meats Evaluation & Technology CDE  
 Written Test

Pages 1-4

25 Multiple-Choice Items @ 3 points per item = 75 points

Page 5

5 Alternate-Choice Items @ 1 point per items = 5 points

Total points = 80 points

<b>KEY</b>
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<u>Page 1</u>	<u>Page 2</u>	<u>Page 3</u>	<u>Page 4</u>	<u>Page 5</u>
1. A	7. D	13. D	20. B	26. A
2. B	8. A	14. B	21. B	27. B
3. B	9. C	15. B	22. D	28. A
4. B	10. B	16. C	23. C	29. A
5. B	11. D	17. B	24. D	30. B
6. C	12. D	18. B	25. C	
		19. A		

National FFA Organization  
2016 Meats Evaluation & Technology CDE  
Written Test

**Instructions: Carefully read each item and possible answers. Mark the correct answer on the correct CDE form. Completely fill the chosen ovals to indicate your answers.**

1. Which of the following is the recommended refrigerator storage time for variety meats?
- A. 12 hours
  - B. 1-2 days
  - C. 3-4 days
  - D. 1 week

(CEV Meat Science & Food Safety slide #103)

2. Which meat cookery method heats only the top surface from a gas flame or electric coil in an oven?
- A. Broiling
  - B. Grilling
  - C. Pan Broiling
  - D. Roasting

(CEV Meat Science & Food Safety slides #133 & #134)

3. Which common foodborne bacteria has over 1,200 species, produces an enterotoxin common in canned meats and seafood, and causes illness 12 to 24 hours after consumption related to inflammation of the lining of the stomach and intestines?
- A. *Clostridium perfringens*
  - B. *Listeria monocytogenes*
  - C. *Salmonella spp.*
  - D. *Staphylococcal aureus*

(CEV Meat Science & Food Safety slide #187)

4. Which of the of the following cuts would require a higher internal temperature to ensure killing of harmful bacteria?
- A. Ground beef
  - B. Plate steak
  - C. Ribeye steak
  - D. Top round steak

(CEV Meat Science & Food Safety slide #127)

5. Which meat additive ( $\text{Na}_3\text{PO}_4$ ) is used to increase water holding capacity in bacon and ham?
- A. Lecithin
  - B. Niacin- Phosphorus
  - C. Phosphates
  - D. Water

(CEV Meat Science & Food Safety slide #172)

6. Curing Additives used for preserving meats are essential to manufacturing processed meats such as:
- A. Bacon
  - B. Beef sirloin steak
  - C. Bottom round roast
  - D. Lamb chop

(CEV Meat Science & Food Safety slide #162)

7. Which of the following is a proper storage temperature for meat?
- A. 30°F
  - B. 55°F
  - C. 100°F
  - D. 135°F

(CEV Meat Science & Food Safety slides #180 & #181)

8. What is the most common cause of foodborne illness?
- A. Genetic diseases in harvested livestock
  - B. Improper refrigeration of meat products
  - C. Mishandling food
  - D. Surplus chemicals in the nation's food supply

(CEV Meat Science & Food Safety slide #182)

9. Why is it advisable to let meat sit for at least three minutes after removing from heat?
- A. To allow freezer thaw
  - B. To allow temperature to “rest”
  - C. To ensure loss of juiciness
  - D. To prevent curability

(CEV Meat Science & Food Safety slide #129)

10. Safety guidelines indicate that cooked leftovers should be used within \_\_\_ days.
- A. 4
  - B. 6
  - C. 8
  - D. 14

(CEV Meat Science & Food Safety slide #122)

11. What is the recommended freezer storage time for bacon?
- A. 1 month
  - B. 2-3 months
  - C. 6-9 months
  - D. 10-12 months

(CEV Meat Science & Food Safety slide #109)

12. Safe handling instructions for the meats industry are regulated by

- A. Agricultural Marketing Service (AMS)
- B. Animal and Plant Health Inspection Service (APHIS)
- C. Food Safety and Inspection Service (FSIS)
- D. Grain Inspection, Packers and Stockyard Administration (GIPSA)

(CEV Meat Science & Food Safety slide #114)

13. What are compounds which absorb oxygen, reducing or preventing the oxidation of food?

- A. Aerobics
- B. Anaerobics
- C. Antioxidants
- D. Tenderizers

(CEV Meat Science & Food Safety slide #160)

14. Freezer burn can generally result in all of the following EXCEPT

- A. Compromised palatability
- B. Improved palatability
- C. Tasteless cooked food
- D. Tougher food

(CEV Meat Science & Food Safety slide #107)

15. Which of the following is the causative agent that involves raw and/or undercooked meat and exhibits symptoms of abdominal cramps, diarrhea, nausea, and vomiting?

- A. *Escherichia coli*
- B. *Lymphoma*
- C. *Phenylketonuria*
- D. *Triglyceride*

(CEV Meat Science & Food Safety slide #192)

16. When repackaging meat before freezer storage, choose a \_\_\_-proof wrap.

- A. Bacteria
- B. Chemical
- C. Moisture
- D. Pest

(CEV Meat Science & Food Safety slide #105)

17. Which form of meat cookery would be recommended for large cuts of meat?

- A. Pan Frying
- B. Roasting
- C. Stewing
- D. Stir Frying

(CEV Meat Science & Food Safety slide #140)

18. Which of the following is best identified as a meat tenderizer?

- A. Bromelain
- B. Dextrose
- C. Lecithin
- D. Phosphate

(CEV Meat Science & Food Safety slide #168)

19. When freezing cooked meat, all of the following steps should be followed EXCEPT

- A. After cooking, remove all bones
- B. Leave pieces of meat large
- C. Temperature of freezer should be 32°F
- D. Wrap tightly in moisture-proof material

(CEV Meat Science & Food Safety slide #123)

20. Ingredients included in processed meats must be listed on the label in order of \_\_\_\_.

- A. Decreasing weight
- B. Increasing weight
- C. Nutritional value
- D. Protein percentage

(CEV Meat Science & Food Safety slide #153)

21. Which meat cookery method is recommended for thinner sliced meats?

- A. Broiling
- B. Pan Frying
- C. Roasting
- D. Stewing

(CEV Meat Science & Food Safety slide #139)

22. Which of the following is NOT an example of skeletal meat?

- A. Brisket
- B. Heart
- C. Rack
- D. Shoulder

(CEV Meat Science & Food Safety slide #156)

23. What is the spread of harmful, pathogenic bacteria from one surface to another, one surface to a person, or person-to-person?

- A. Correlate-Septicity
- B. Cross -Contamination
- C. Cross-Contagion
- D. Limited-Viability

(CEV Meat Science & Food Safety slide #116)



24. What is the temperature range cited for smoking meats?

- A. 107°F to 176°F
- B. 175°F to 220°F
- C. 225°F to 350°F
- D. 375°F to 450°F

(CEV Meat Science & Food Safety slide #142)

25. Which of the following is used to retard mold growth on the outside of dried sausages?

- A. Bromelain
- B. Ficin
- C. Potassium Sorbate
- D. Sucrose

(CEV Meat Science & Food Safety slide #169)

26. Frozen meat can be cooked satisfactorily without first defrosting.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #120)

27. When microwave cooking frankfurters, avoid piercing casings to prevent the casings from splitting.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #145)

28. Starter cultures are bacteria used for fermentation to create flavor and impart certain properties in processed meats.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #170)

29. *Trichinella spiralis* is a nematode worm.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #191)

30. When defrosting meat, ice crystals will melt releasing liquid that will increase the juiciness of the cut.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #118)

National FFA Organization  
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Pages 1-5

(Items 1-25) – 25 Multiple-Choice Items @ 3 points per item = 75 points

Page 5

(Items 26-30) – 5 Alternate-Choice Items @ 1 point per items = 5 points

Total points = 80 points

KEY

Multiple Choice Items

1. B
2. A
3. D
4. A
5. C
6. A
7. A
8. C
9. B
10. A
11. A
12. C
13. C
14. B
15. A
16. C
17. B
18. A
19. C
20. A
21. B
22. B
23. B
24. C
25. C

True/False Items

26. A
27. B
28. A
29. A
30. B

National FFA Organization  
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***Instructions: Carefully read each item and possible answers. Mark the correct answer on the correct CDE form. Completely fill the chosen ovals to indicate your answers.***

1. Which of the following is a primal cut of pork?
  - A. Breast
  - B. Loin
  - C. Rib
  - D. Round

(CEV Meat Science & Food Safety slide #63)

2. What do the letters HACCP represent?
  - A. Hazard Analysis Classification Control Point
  - B. Hazard Analysis Critical Control Point
  - C. Holistic Analysis Critical Control Processes
  - D. Humane Analysis Classification Control Procedures

(CEV Meat Science & Food Safety slide #20)

3. Which of the following is true of ground beef and hamburger?
  - A. Hamburger can contain added water, ground beef cannot.
  - B. Neither can contain binders.
  - C. Neither can contain seasoning.
  - D. Unadulterated ground beef contains less than 30% fat, hamburger contains more.

(CEV Meat Science & Food Safety slide #67)

4. Which of the following is a natural hormone found in growth-promoting implants?
  - A. antibiotic
  - B. progesterone
  - C. trenbolone acetate
  - D. zeranol

(CEV Meat Science & Food Safety slide #29)

5. Which product date designates the best taste and texture for the product?
  - A. “Best if Used By”
  - B. “Sell by Date”
  - C. “Store By”
  - D. “Use By”

(CEV Meat Science & Food Safety slide #76)

6. Which of the following is the thick myofilament in the sarcomere?
  - A. Actin
  - B. Bundle
  - C. Minimere
  - D. Myosin

(CEV Meat Science & Food Safety slide #59)

7. Which of the following specifies that meat be held for ten days to six weeks at 34°F to 38°F in a humidity controlled cooler?
- A. Brine aging
  - B. Dry aging
  - C. Smoking
  - D. Wet aging

(CEV Meat Science & Food Safety slide #80)

8. What are compounds that absorb oxygen, reducing or preventing the oxidation of food?
- A. Aerobics
  - B. Anaerobics
  - C. Antioxidants
  - D. Tenderizers

(CEV Meat Science & Food Safety slide #160)

9. Which of the following is true about lamb and mutton?
- A. Lamb has a more intense flavor than mutton.
  - B. Lamb meat is from a sheep older than one year of age.
  - C. Mutton is more tender than lamb.
  - D. Mutton is preferred by some cultures because it has a more intense flavor than lamb.

(CEV Meat Science & Food Safety slide #87)

10. Which method of slaughter, meat processing and handling follow Jewish dietary laws?
- A. Halal
  - B. Kindred
  - C. Kosher
  - D. Permitted

(CEV Meat Science & Food Safety slide #19)

11. For a maturity score “A” beef carcass to make quality grade Choice-, the marbling score should be \_\_\_\_.
- A. Moderate<sup>0-100</sup>
  - B. Modest<sup>0-100</sup>
  - C. Slightly Abundant<sup>0-100</sup>
  - D. Small<sup>0-100</sup>

(CEV Meat Science & Food Safety slide #93)

12. Which of the following is the causative agent that involves raw and/or undercooked meat and exhibits symptoms of abdominal cramps, diarrhea, nausea, and vomiting?
- A. *Escherichia coli*
  - B. *Lymphoma*
  - C. *Phenylketonuria*
  - D. *Triglyceride*

(CEV Meat Science & Food Safety slide #192)

13. Most of the beef in U.S. grocery stores is USDA \_\_\_\_.
- A. Choice
  - B. Prime
  - C. Select
  - D. Standard

(CEV Meat Science & Food Safety slide #99)

14. Which meat cookery method is recommended for thinner sliced meats?

- A. Broiling
- B. Pan Frying
- C. Roasting
- D. Stewing

(CEV Meat Science & Food Safety slide #139)

15. Which of the following is the result of oxidative changes in fat found in foods?

- A. Fetidization
- B. Freezer Burn
- C. Preservation
- D. Rancidity

(CEV Meat Science & Food Safety slide #106)

16. According to the Humane Methods of Slaughter Act, which of the following is NOT an approved method of stunning?

- A. Captive bolt
- B. Carbon dioxide gas
- C. Electric shock
- D. Sticking

(CEV Meat Science & Food Safety slide #18)

17. Which of the following is true specific to home freezer storage?

- A. Meat will retain its quality best if stored in a very cold freezer.
- B. Moisture-proof wrapping has no effect on meat storage quality.
- C. Thick cuts will freeze faster than thin cuts.
- D. Thin cuts will freeze slower than thick cuts.

(CEV Meat Science & Food Safety slide #110)

18. Generally, three ounces of lean lamb contains 74 percent of the RDA for \_\_\_\_.

- A. Carbohydrates
- B. Protein
- C. Vitamin B12
- D. Zinc

(CEV Meat Science & Food Safety slide #57)

19. How soon should ground beef be used after it is stored in a refrigerator?

- A. Within two days
- B. Within three days
- C. Within one week
- D. Within two weeks

(CEV Meat Science & Food Safety slide #119)

20. Which of the following is used to retard mold growth on the outside of dried sausages?

- A. Bromelain
- B. Ficin
- C. Potassium Sorbate
- D. Sucrose

(CEV Meat Science & Food Safety slide #169)

21. Which of the following is true or recommended for cooking refrigerated meat?
- A. Allow the meat to reach room temperature before cooking.
  - B. Cooking timetables are based on meat at room temperature.
  - C. Meat should be cooked at refrigerator temperature.
  - D. Partially frozen meet will cook faster.

(CEV Meat Science & Food Safety slide #125)

22. Riboflavin is an example of these water soluble vitamins.
- A. A Vitamins
  - B. B Vitamins
  - C. C Vitamins
  - D. D Vitamins

(CEV Meat Science & Food Safety slide #53)

23. What is the minimum internal temperature of a “medium rare” beef steak?
- A. 125°F
  - B. 130°F
  - C. 140°F
  - D. 160°F

(CEV Meat Science & Food Safety slide #128)

24. The Meat Inspection Act was enacted to prevent the adulteration and misbranding of meat products. When was the Meat Inspection Act enacted?
- A. 1862
  - B. 1906
  - C. 1921
  - A. 1958

(CEV Meat Science & Food Safety slide #10)

25. Deep fat frying is best completed when fat is heated at the following temperatures.
- A. 150°F – 160°F
  - B. 250°F – 260°F
  - C. 350°F – 360°F
  - D. 450°F – 460°F

(CEV Meat Science & Food Safety slide #136)

26. This important piece of legislation was enacted the same day as the Meat Inspection Act. It prohibited the sale, manufacture and transportation of adulterated food products.
- A. Food and Drug Act
  - B. Packers and Stockyards Act
  - C. Pure Food and Drug Act
  - D. Wholesome Meat Act

(CEV Meat Science & Food Safety slide #12)

27. Which is true of roasting as a meat cookery method?
- A. Roasting should be conducted in a deep pan while covering the meat.
  - B. Roasting should be conducted in a deep pan without covering the meat.
  - C. Roasting should be conducted in a shallow pan while covering the meat.
  - D. Roasting should be conducted in a shallow pan without covering the meat.

(CEV Meat Science & Food Safety slide #140)

28. All of the following are major components of meat essential to good health EXCEPT
- A. Zernal
  - B. Fat
  - C. Iron
  - D. Protein

(CEV Meat Science & Food Safety slide #45)

29. The following is a moist cooking method.
- A. Braising
  - B. Broiling
  - C. Grilling
  - D. Stir frying

(CEV Meat Science & Food Safety slide #146)

30. Due to regulations concerning BSE, downer cattle cannot be harvested for human or animal consumption. What is BSE?
- A. Bovine Spondilosis Endoscopy
  - B. Bovine Spongiform Encephalopathy
  - C. Breed Sporozoite Encephalopathy
  - D. Breed Sustained Embryotomy

(CEV Meat Science & Food Safety slide #39)

31. The fat content of a frankfurter may not exceed \_\_\_ by weight.
- A. 30 Grams
  - B. 30 Ounces
  - C. 30 Percent
  - D. 30 PPM

(CEV Meat Science & Food Safety slide #155)

32. Which meat additive ( $\text{Na}_3\text{PO}_4$ ) is used to increase water holding capacity in bacon and ham?
- A. Lecithin
  - B. Niacin- Phosphorus
  - C. Phosphates
  - D. Water

(CEV Meat Science & Food Safety slide #172)

33. Which food additive is used as a curing accelerator in combination with other curing agents to fix color at a faster rate or preserve color during storage?
- A. Ascorbic Acid
  - B. Potassium Nitrate
  - C. Sodium Chloride
  - D. Sodium Nitrite

(CEV Meat Science & Food Safety slide #161)

34. What is a synthetic chemical that shifts nutrients away from fat production to the promotion of lean muscle growth?
- A. Antibiotic
  - B. Beta-agonist
  - C. Oleoresin
  - D. BHA

(CEV Meat Science & Food Safety slide #31)

35. Which of the following is a “flavoring” food additive?

- A. Butylated Hydroxyanisole
- B. Oleoresin
- C. Starter Culture
- D. Vitamin C

(CEV Meat Science & Food Safety slide #164)

36. What is the recommended freezer storage time for bacon?

- A. 1 month
- B. 2-3 months
- C. 6-9 months
- D. 10-12 months

(CEV Meat Science & Food Safety slide #109)

37. What is the purpose of mono and di-glycerides as processed meat additives?

- A. They aid in binding lean and fat for improved product texture.
- B. They aid in maintaining an emulsion in mixes.
- C. They increase water holding capacity in bacon and ham.
- D. They keep ingredients and seasonings evenly distributed throughout the mix.

(CEV Meat Science & Food Safety slide #171)

38. What term describes the case where pathogenic bacteria grew in the food, produced a toxin and made the consumer sick after eating?

- A. Food Infection
- B. Food Intoxication
- C. Food Vulnerability
- D. Foodborne Virus

(CEV Meat Science & Food Safety slide #184)

39. What standards assure labeling on a uniform basis? A pork loin chop in Maine is the same cut as a pork loin chop in Arizona.

- A. Consistency Across State Boundaries Standards
- B. Retail Meat Reliability Standards
- C. Uniform Retail Meat Identity Standards
- D. USDA Quantity Grading Standards

(CEV Meat Science & Food Safety slide #66)

40. Which component found in meat contains the most energy per gram?

- A. Fat
- B. Iron
- C. Protein
- D. Water

(CEV Meat Science & Food Safety slide #49)



41. When storing leftovers, meat should be cut into small pieces.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #123)

42. If an antibiotic has been used to treat a disease, the animal will lose its organic status.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #82)

43. Eggs have been linked to the food infection Listeriosis.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #190)

44. Irradiation alters the taste of a food.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #178)

45. The Wholesome Meat Act requires a federal, USDA or state inspection mark. True or false – The federal or state inspection mark indicates wholesomeness, not quality.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #16)

46. Short-fed beef is from cattle fed in a feedlot for 150 days.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #86)

47. Isoleucine is an essential amino acid found in meat.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #47)

48. Frozen meat can be cooked satisfactorily without first defrosting.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #120)

49. *Trichinella spiralis* is a nematode worm.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #191)

50. When defrosting meat, ice crystals will melt releasing liquid that will increase the juiciness of the cut.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #118)

**National FFA Organization**  
2017 Meats Evaluation & Technology CDE  
**Written Test**

**KEY**

- |       |       |
|-------|-------|
| 1. B  | 26. C |
| 2. B  | 27. D |
| 3. B  | 28. A |
| 4. B  | 29. A |
| 5. A  | 30. B |
| 6. D  | 31. C |
| 7. B  | 32. C |
| 8. C  | 33. A |
| 9. D  | 34. B |
| 10. C | 35. B |
| 11. D | 36. A |
| 12. A | 37. D |
| 13. C | 38. B |
| 14. B | 39. C |
| 15. D | 40. A |
| 16. D | 41. B |
| 17. A | 42. A |
| 18. C | 43. A |
| 19. A | 44. B |
| 20. C | 45. A |
| 21. C | 46. B |
| 22. B | 47. A |
| 23. B | 48. A |
| 24. B | 49. A |
| 25. C | 50. B |

**National FFA Organization**  
2018 Meats Evaluation & Technology CDE  
**Written Test**

***Instructions: Carefully read each item and possible answers. Mark the correct answer on the correct CDE form. Completely fill the chosen ovals to indicate your answers.***

1. According to FSIS, which of the following applies to meat labeled as “Natural”?
- A. No added color
  - B. No artificial ingredients
  - C. Minimally processed
  - D. All of the above apply to meat labeled as “Natural”

(CEV Meat Science & Food Safety slide #84)

2. Growth-Promoting Implants are NOT approved for use in which species?
- A. Hormonal implants are approved for use in all species.
  - B. Cattle
  - C. Sheep
  - D. Swine

(CEV Meat Science & Food Safety slide #30)

3. After a power outage, meat in the refrigerator is safe for 6 to 8 hours, unless meat temperature rises above \_\_\_ for more than 2 hours.
- A. 10°F
  - B. 20°F
  - C. 30°F
  - D. 40°F

(CEV Meat Science & Food Safety slide #111)

4. Which of the following is a primal cut of lamb?
- A. Breast
  - B. Brisket
  - C. Ham
  - D. Round

(CEV Meat Science & Food Safety slide #64)

5. Meat should be defrosted in all of the following ways EXCEPT
- A. In a microwave oven
  - B. In a refrigerator
  - C. In cold water
  - D. On a countertop at room temperature

(CEV Meat Science & Food Safety slide #117)

6. Which of the following statements is true of Water-Added Ham?
- A. It must be the entire hind leg of a hog.
  - B. It shall not contain more than 30% of the fresh ham in added moisture.
  - C. It can be made from the Boston or picnic shoulder.
  - D. It uses water as an essential part of the curing process.

(CEV Meat Science & Food Safety slide #68)

7. In meat products, what is the major reason for net weight loss from packaging to counter?
- A. Fat evaporation
  - B. Loss of vitamins and minerals
  - C. Moisture loss
  - D. Protein breakdown

(CEV Meat Science & Food Safety slide #75)

8. Generally, three ounces of lean lamb contains 74 percent of the recommended daily allowance (RDA) for \_\_\_\_.
- A. Carbohydrates
  - B. Protein
  - C. Vitamin B12
  - D. Zinc

(CEV Meat Science & Food Safety slide #57)

9. What compounds are used to absorb oxygen, reducing or preventing the oxidation of food?
- A. Anaerobicoxidants
  - B. Antioxidants
  - C. Curing Corroders
  - D. Oxygen Inhibitors

(CEV Meat Science & Food Safety slide #160)

10. Maturity classes divide meat into categories based on age. Which of the following utilize maturity classes?
- A. Cattle & Pork
  - B. Cattle & Sheep
  - C. Goats & Pork
  - D. Pork & Sheep

(CEV Meat Science & Food Safety slide #85)

11. All of the following are plant enzymes used to tenderize meat EXCEPT
- A. Bromelain
  - B. Ficin
  - C. Neotame
  - D. Papain

(CEV Meat Science & Food Safety slide #168)

12. Riboflavin is an example of these water soluble vitamins.
- A. A Vitamins
  - B. B Vitamins
  - C. C Vitamins
  - D. D Vitamins

(CEV Meat Science & Food Safety slide #53)

13. What is another term for Cold Cuts?
- A. Cured meats
  - B. Luncheon meats
  - C. Meat by-products
  - D. Variety meats

(CEV Meat Science & Food Safety slide #154)

14. Which of the following is the thin myofilament in the muscle sarcomere?

- A. Actin
- B. Actosin
- C. Bundle
- D. Myosin

(CEV Meat Science & Food Safety slide #59)

15. What should be done to pre-cooked sausages (such as frankfurters) when using a microwave oven?

- A. Cut off the ends to allow expansion
- B. Keep the casings whole to preserve moisture
- C. Pierce the casings to vent steam
- D. Split the sausage in quarters to assure even cooking

(CEV Meat Science & Food Safety slide #145)

16. This important piece of legislation was enacted the same day as the Meat Inspection Act. It prohibited the sale, manufacture and transportation of adulterated food products.

- A. Food and Drug Act
- B. Packers and Stockyards Act
- C. Pure Food and Drug Act
- D. Wholesome Meat Act

(CEV Meat Science & Food Safety slide #12)

17. The Meat Inspection Act of 1906 was prompted by which book by Upton Sinclair?

- A. *Charlotte's Web*
- B. *FSIS Standards*
- C. *The Jungle*
- D. *The Meat We Eat*

(CEV Meat Science & Food Safety slide #10)

18. What does the acronym HACCP stand for?

- A. Hazmat Critical Control Point
- B. Hazard Analysis Critical Control Point
- C. Hazard Awareness Critical Collection Program
- D. Harmful Analysis Crucial Control Program

(CEV Meat Science & Food Safety slide #20)

19. Handling leftovers should have the ultimate goal of \_\_\_ to slow bacterial growth.

- A. fast cooling
- B. fast heating
- C. slow cooling
- D. slow heating

(CEV Meat Science & Food Safety slide #121)

20. Due to regulations concerning BSE, downer cattle cannot be harvested for human or animal consumption. What is BSE?

- A. Bovine Spondilosis Endoscopy
- B. Bovine Spongiform Encephalopathy
- C. Breed Sporozoite Encephalopathy
- D. Breed Sustained Embryotomy

(CEV Meat Science & Food Safety slide #39)

21. When is it better to use a dry cooking method?
- A. For cuts with large amounts of connective tissue
  - B. For ground products
  - C. For less tender cuts
  - D. For lower quality cuts

(CEV Meat Science & Food Safety slide #131)

22. All of the following are true about water in the meat industry EXCEPT
- A. Water aids in evisceration
  - B. Water is essential to all life processes
  - C. Water makes hide removal more difficult
  - D. Water must be provided to livestock through the life cycle until the point of harvest

(CEV Meat Science & Food Safety slide #36)

23. When smoking meats, two thermometers are recommended. One thermometer is used to measure the internal temperature of the meat. What should the other thermometer measure?
- A. The air temperature of the smoker
  - B. The surface temperature of the meat
  - C. The internal temperature of the meat taken at a second location
  - D. The temperature outside of the smoker

(CEV Meat Science & Food Safety slide #142)

24. What is a synthetic chemical that shifts nutrients away from fat production to the promotion of lean muscle growth?
- A. Antibiotic
  - B. Beta-agonist
  - C. Growth-Promoting Implant
  - D. Zeranol

(CEV Meat Science & Food Safety slide #31)

25. Which piece of legislation passed in 1921 resulted in the monitoring of scales and brands?
- A. Meat Inspection Act
  - B. Packers and Stockyards Act
  - C. Pure Food and Drug Act
  - D. Uniform Wholesale Act

(CEV Meat Science & Food Safety slide #13 & #9)

26. When did labeling begin as a result of the Nutritional Labeling & Education Act?
- A. January 1973
  - B. December 1979
  - C. January 1990
  - D. January 2012

(CEV Meat Science & Food Safety slide #23)

27. What is used to retard mold growth on the outside of dried sausages?
- A. Di-Glycerides
  - B. Isolated Soy Proteins
  - C. Lecithin
  - D. Potassium Sorbate

(CEV Meat Science & Food Safety slide #169)

28. Which of the following specifies that meat be held for ten days to six weeks at 34°F to 38°F in a humidity controlled cooler?
- A. Brine aging
  - B. Dry aging
  - C. Smoking
  - D. Wet aging

(CEV Meat Science & Food Safety slide #80)

29. Which of the following are the proper storage temperatures?
- A. Below 32°F for cold products and above 140°F for hot products
  - B. Below 32°F for cold products and above 165°F for hot products
  - C. Below 40°F for cold products and above 140°F for hot products
  - D. Below 40°F for cold products and above 165°F for hot products

(CEV Meat Science & Food Safety slide #180)

30. Which nutrient is essential for the absorption of vitamins A, D, E, and K?
- A. Carbohydrates
  - B. Fat
  - C. Minerals
  - D. Protein

(CEV Meat Science & Food Safety slide #49)

31. Which of the following is the most common cause of foodborne illness?
- A. Mishandling food
  - B. Misidentifying meats
  - C. Misreading labels
  - D. Mistreating animals

(CEV Meat Science & Food Safety slide #182)

32. For a maturity score “A” beef carcass to make quality grade Choice<sup>o</sup> (Average Choice) the marbling score should be \_\_\_\_.
- A. Moderate<sup>0-100</sup>
  - B. Modest<sup>0-100</sup>
  - C. Slightly Abundant<sup>0-100</sup>
  - D. Small<sup>0-100</sup>

(CEV Meat Science & Food Safety slide #93)

33. Which type of meat cookery uses heated air circulated around the meat by a fan?
- A. Convection Oven
  - B. Grilling
  - C. Microwave Oven
  - D. Smoking

(CEV Meat Science & Food Safety slide #135)

34. Food is deemed “\_\_\_\_” unless it has a nutritional label.
- A. Misappropriated
  - B. Misbranded
  - C. Misregulated
  - D. Mistaken

(CEV Meat Science & Food Safety slide #21)

35. Which meat cookery method is recommended for thinner sliced meats?
- A. Broiling
  - B. Pan Frying
  - C. Roasting
  - D. Stewing

(CEV Meat Science & Food Safety slide #139)

36. Which of the following is the correct recommended refrigerated storage time?
- A. Fresh, Uncooked Beef = 6-8 days
  - B. Frankfurters = 2-3 weeks
  - C. Fresh, Uncooked Ground meats = 4-6 days
  - D. Sausage = 1 week

(CEV Meat Science & Food Safety slides #103 & #104)

37. What is the primary function of phosphates as processed meat additives?
- A. They add to nutritional value.
  - B. They aid in drying the product.
  - C. They increase water holding capacity.
  - D. They keep ingredients and seasonings evenly distributed throughout the mix.

(CEV Meat Science & Food Safety slide #171)

38. Prime, Choice, Good, Utility, and Cull are all quality grades for which species?
- A. Beef
  - B. Exotics
  - C. Lamb
  - D. Pork

(CEV Meat Science & Food Safety slide #98)

39. Which nutrient's primary function is to aid in the repair and maintenance of body cells?
- A. Carbohydrate
  - B. Fat
  - C. Protein
  - D. Water

(CEV Meat Science & Food Safety slide #46)

40. In order to aid in evisceration and reduce microbial contamination, feed is withheld from animals \_\_\_ prior to slaughter.
- A. 6 hours
  - B. 12 hours
  - C. 1 day
  - D. 2 days

(CEV Meat Science & Food Safety slide #37)

41. Improperly cooked beef products have been commonly associated with Trichinosis.
- A. True
  - B. False

(CEV Meat Science & Food Safety slide #191)

42. If an antibiotic has been used to treat a disease, the animal will lose its organic status.
- A. True
  - B. False

(CEV Meat Science & Food Safety slide #82)



43. In the beef carcass, physiological age is an estimate of the actual chronological age.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #90)

44. Lysine is an essential amino acid found in meat.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #47)

45. Over 12,000 species of *Salmonella* cause illness when ingested.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #189)

46. Pan broiling is recommended for steaks and chops more than 2 inches thick.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #138)

47. Re-Freezing meat causes no deterioration of quality as long as it is done correctly.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #112)

48. “Shoulder” is a primal cut found in the beef carcass.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #62)

49. *Trichinella spiralis* is a nematode worm.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #191)

50. Uniform retail meat identity standards were implemented in 1973. This established a single, specific name for each basic retail cut.

- A. True
- B. False

(CEV Meat Science & Food Safety slide #17)

**National FFA Organization**  
2018 Meats Evaluation & Technology CDE  
**Written Test**

**KEY**

- |       |       |
|-------|-------|
| 1. D  | 26. D |
| 2. D  | 27. D |
| 3. D  | 28. B |
| 4. A  | 29. C |
| 5. D  | 30. B |
| 6. D  | 31. A |
| 7. C  | 32. B |
| 8. C  | 33. A |
| 9. B  | 34. B |
| 10. B | 35. B |
| 11. C | 36. D |
| 12. B | 37. C |
| 13. B | 38. C |
| 14. A | 39. C |
| 15. C | 40. B |
| 16. C | 41. B |
| 17. C | 42. A |
| 18. B | 43. A |
| 19. A | 44. A |
| 20. B | 45. B |
| 21. B | 46. B |
| 22. C | 47. B |
| 23. A | 48. B |
| 24. B | 49. A |
| 25. B | 50. A |