2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 1
What lean quality defect sometimes is produced when swine are stressed immediately before slaughter?

Pale, Soft & Exudative (PSE) Pork
Question #2

What color of ink is used to apply the red meat carcass inspection stamp?

Purple
Question #3

What structures do bacteria such as *E. coli* use for movement?

Flagella
Question #4

What are edible meat by-products better known as?

Variety Meats
Question #5

Which muscle type is multi-nucleated?

Skeletal
Question #6

What is the most abundant myofibrillar protein?

Myosin
Question #7

What is the dressing percentage of a steer that had a live weight of 1,250 lb. and a carcass weight of 800 lb.?

64%
Question #8

Who is the president of AMSA?

Joe Sebranek
Question #9

What USDA Yield Grade would a lamb carcass with 0.26 inch of fat be assigned?

3
Question #10

What acid causes the pH of normal muscle to drop after slaughter?

Lactic
Question #11

What is the most well-known USDA Certified Program and is identified with carcass specification G1?

Certified Angus Beef
Question #12

Palatability of beef refers to what three main attributes?

Tenderness, Juiciness & Flavor
Question #13

What is the most common preservative in processed meats?

Salt
Question #14

Which USDA agency inspects red meat products at slaughter?

Food Safety and Inspection Service (FSIS)
Question #15

What technology is commonly used to decrease heat ring and cold shortening of beef?

Electrical Stimulation
Question #16

What protein comprises this part of the sarcomere?

Actin
Question #17

What is the defect condition of this ribeye called?

Blood Splash
In January of 1997, B-maturity beef carcasses with Slight degree of marbling were no longer eligible for what USDA Quality Grade?

Select
Question #19

What is the largest fast food chain in the world?

McDonald’s
Question #20

What shape are these bacteria?

Rod-shaped (Bacilli)
Question #21

In July 1996, USDA-FSIS made a final ruling that all meat processors must implement what?

HACCP
Who was the author of “The Jungle?”

Upton Sinclair
Question #23

What is the term used to describe tying the intestine during evisceration?

Bunging
Question #24

By FSIS regulations, the fat content of all sausages, except fresh pork sausage, cannot exceed what percent?

30
Question #25

What are fatty acids with two or more double bonds called?

Polyunsaturated
Question #26

What type of HACCP hazard would jewelry be considered? Physical
Question #27

What inorganic compound in red meat is needed for the manufacture of many enzymes and hormones in the human body?

Zinc
Question #28

What national organization was founded in 1922 by producers and packers to promote meat?

National Live Stock & Meat Board
Question #29

If this symbol appears on a product, what treatment has the product received?

Irradiation
Question #30

What is the most valuable by-product of cattle?
Question #31

When was the Meat Inspection Act passed?

1906
Question #32

A beef carcass with skeletal maturity of A\textsuperscript{40} would typically have what percent ossification in the first 3 thoracic buttons?

0
Question #33

What is the USDA Quality Grade (to the nearest one-third) of a “C” maturity beef carcass with a Slightly Abundant marbling score?

USDA High Commercial
Question #34

What is the term used when cattle producers sell feeder or slaughter cattle futures on the Chicago Mercantile Exchange to protect their position?

Hedge (Hedging)
Question #35

Which university was the first to host the RMC?

Michigan State University
Question #36

What is the term used to describe storing refrigerated meat to improve tenderness?

Aging
Question #37

What does IMPS stand for?

Institutional Meat Purchase Specifications
Question #38

What is the sausage product consumed in the greatest amount in the United States?

Wieners or Frankfurters (hot dogs)
Question #39

When was USDA founded?

1862
Question #40

Which muscle type is under involuntary control and striated?

Cardiac
Question #41

Which country produces the most pork?

China
Question #42

What is the common name of this muscle?

Ribeye
Question #43

Who pays for USDA Meat Grading services?

Company using services (packer)
Question #44

The most commonly used commercial method for freezing meat products is what?

Blast Freezing
Question #45

What does the acronym HACCP stand for?

Hazard Analysis Critical Control Points
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference
Round 2
Question #1

What is the USDA Quality Grade of a beef carcass with lean maturity of A^{90}, skeletal maturity of B^{30}, and marbling score of SI^{80}?

USDA Standard
Question #2

What is the connective tissue membrane surrounding a muscle fiber?

Endomysium
Question #3

What bacterium was responsible for the deaths of several children consuming undercooked ground beef patties in 1993 at Jack in the Box restaurants in the Northwest?

*E. coli* O157:H7
Question #4

What bovine gland is commonly marketed as “Sweetbreads”?

Thymus
Question #5

Muscle proteins are degraded during aging by what enzymes?

Calpains
Question #6

What is the most important characteristic used to determine the maturity of a veal carcass?

Lean Color
Question #7

What term describes microbes that need oxygen to grow?

Aerobic (Aerobes)
Question #8

What is the scientific name of the most tender muscle in a beef carcass?

*Psoas major*
Question #9

Identify the given compound.

Cholesterol
Question #10

Identify this equipment.

Band Saw
Question #11

What stromal protein comprises the *Ligamentum nuchae*?

Elastin
What is the common name of intramuscular fat?

Marbling
Question #13

What is the maximum level of nitrites allowed in finished hams?

200 ppm
Question #14

What kind of bacteria prefer to grow in cold temperatures?

Psychrophiles (Psychrophilic)
Question #15

What is this A-maturity beef carcass referred to as?

Dark Cutter
Question #16

What is used to rephosphorylate ADP to ATP during the onset phase of rigor?

Creatine Phosphate
What is the common name of Transmittable Spongiform Encephalopathy, a neurological disease found in sheep?

Scrapie
Question #18

Beef is high in what kind of vitamins?

B
Question #19

Identify this muscle.

*Semimembranosus*
Question #20

Who is the Secretary of Agriculture?

Ann Veneman
Question #21

Who was the first general manager of the National Live Stock & Meat Board?

R. C. Pollock
Question #22

At what temperature (°F) does meat freeze?

28
Question #23

Identify this equipment.

Weasand Rod
Question #24

Identify this wholesale cut.

Leg
Question #25

In what organelle in the cell does the Electron Transport Chain function?

Mitochondria
Question #26

What pathogen reduction step utilizes a steam chamber for carcasses?

Steam Pasteurization
Question #27

What red meat has been marketed as “The Other White Meat?”

Pork
Peppercorns and bay leaf are commonly used spices that give which beef product its distinctive flavor?

Corned Beef
Question #29
What is the muscle condition of this bull most commonly called?

Double-muscled
Question #30

What would be the internal temperature (°C) of a steak cooked to a medium degree of doneness?

71
Question #31

What is the normal pH of fresh beef after chilling?

5.6 (5.4 – 5.8)
Which genus of bacteria, often associated with poultry, has species of *derby, havana, and enteritidis*?

*Salmonella*
Question #33

Give the common name of the Food Additives Amendment to the federal Food, Drug, and Cosmetic Act that states that no cancer-causing substance can be added in any amount to the food supply.

Delaney Clause
What poultry company purchased IBP?

Tyson
Question #35

What is this phase of microbial growth?

Log Phase
Question #36

What is the brand name of the β-agonist that is approved for use in swine in the United States?

Paylean®
Question #37

Which red meat animal species has the lowest average dressing percent?

Sheep
Question #38

Triglycerides are composed of what two components?

Glycerol and (Free) Fatty Acids
Question #39

What is a point or step in a process where control can be applied to prevent, eliminate, or reduce a hazard?

Critical Control Point
Question #40

What is the term given to the $1 per head assessed during the sale of domestic and imported cattle to fund marketing and research programs?

Checkoff
Question #41

What is the scientific name of the muscle from which Canadian Bacon is manufactured?

*Longissimus*
Question #42

What approximate chronological age is a C-maturity beef carcass?

42 – 72 months
Question #43

What is the term given to inspection of animals prior to slaughter?

Antemortem Inspection
Question #44

What is shape of the bacteria shown?

Spherical (Cocci or Round)
What are popular canned sausages, similar to frankfurters, although more bland in flavor and smaller?

Vienna Sausages
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 3
Question #1

Identify this muscle.

Gluteus medius
Question #2

What general name is given to bacteria that cause diseases?

Pathogens
Question #3

What syndrome in swine leads to increased susceptibility to PSE lean?

Porcine Stress Syndrome
Question #4

What beef hide defect costs the industry millions of dollars, but is a law in some states?

Branding
Question #5

Which muscle type is non-striated?

Smooth
Question #6

Which muscle protein must bind calcium for muscle contraction?

Troponin
Question #7

What is the U.S. Grade of a pork carcass with a thin muscle score and 0.5” last rib backfat with acceptable quality characteristics and belly thickness?

U.S. No. 2
Question #8

What is the time between ribbing and grading of beef carcasses called that allows oxygenation of the ribeye pigments?

Bloom Time
Identify this equipment.

Captive Bolt Stunner
Question #10

What is the common name of the microbial product that is added to lower pH in a timely fashion during manufacture of fermented sausages?

Starter Culture
What is frozen pork more susceptible to than frozen beef or lamb because pork fat has a higher proportion of unsaturated fatty acids?

Oxidative Rancidity
Question #12

Identify this muscle.

Spinalis dorsi
Question #13

What is a finely-comminuted dispersion of lean and fat particles into a two-phase system that consists of dispersed and continuous phases?

Meat Emulsion
Question #14

What is the connective tissue membrane surrounding a muscle bundle?

Perimysium
Question #15

What color is the horse meat inspection stamp ink?

Green
Question #16

What structural unit of a muscle fiber is measured by the distance between these 2 lines?

Sarcomere
As animals age, cartilaginous ends of vertebrae __________.

Ossify
Question #18

Identify this amino acid structure.

Tryptophan
Question #19

What is extracted from certain species of red seaweed and used as a thickening, gelling, stabilizing, and protein-suspending agent?

Carrageenan
Question #20

What year was the first intercollegiate meat judging contest held?

1926
Question #21

What is the quantity of heat that is necessary to raise the temperature of 1 g of water from 15 to $16^\circ$C?

Calorie
Question #22

What act of 1921 provided uniform rates and practices and prevented unfair, unjustly discriminatory, or deceptive practices of marketing livestock?

Packers and Stockyards
Question #23

What was the live weight of a lamb with a carcass weight of 60 lb and a dressing percentage of 50.0?

120
Question #24

What is defined as ingestion of pathogenic organisms that grow and cause illness in the host?

Food Infection
Question #25

What condition results during thawing of muscle that was frozen prerigor?

Thaw Rigor
Question #26

What national organization funded by membership dues and checkoff dollars represents cattle producers?

National Cattlemen’s Beef Association (NCBA)
Question #27

What two beef wholesale cuts yield “Middle Meats”?

Rib and Loin
Who is the executive director of AMSA?

Thomas Powell
Question #29

Identify this beef variety meat.

Oxtail
Question #30

Which artery is used when a ham is artery pumped?

Femoral
Question #31

How many ribs are in a beef forequarter?

12
Question #32

What viral disease in cloven-hoofed animals causes fluid-filled blisters on their mouth, tongue, teats, muzzle, and skin between their hooves?

Hoof (Foot) and Mouth Disease
Question #33

What is the term given to the contents of the GI tract at the time of slaughter and affects dressing percentage more than most other factors?

Fill
Question #34

What is the only meat wholesale cut traded on the Chicago Mercantile Exchange?

Pork Bellies
Question #35

Which country banned U.S. poultry imports in March of 2002?

Russia
Question #36

What is the embryonic development of muscle tissues?

Myogenesis
Question #37

What is the only meat cut rich in Vitamin A?

Liver
Question #38

Potentially hazardous foods have a pH above what value?

4.6
Question #39

What muscle hypertrophy condition in sheep, which develops approximately 3 weeks after birth, means “Beautiful Buttocks”?

Callipyge
Question #40

What is a mathematical technique for determining the best use of available resources when these resources can be used in other products?

Least Cost Formulation
Question #41

What is this phase of microbial growth?

Lag Phase
Question #42

What are “Chitterlings” made from?

Pork Intestine
Question #43

What month is designated as National Meat Month?

February
Question #44

What is the USDA Yield Grade (to the nearest tenth) of a beef carcass with the following characteristics:

HCW = 600  
PYG = 3.0  
REA = 11.0  
KPH = 3.5%  
3.0
Question #45

According to the Beef Steak Color Guide, what end-point cooking temperature (°F) is associated with medium rare degree of doneness?

150
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Reciprocal Meat Conference
Round 4
Question #1

Which breed of swine often is associated with the Napole gene that can influence pork quality?

Hampshire
Question #2

What is the minimum recommended doneness (°F) for a whole chicken?

180
Question #3

Which genus of bacteria often associated with ready-to-eat foods, hot dogs or luncheon meats, can cause flu-like symptoms in healthy adults and abortions in pregnant women?

Listeria
Question #4

Identify this muscle.

Serratus ventralis
Question #5

What are descriptions of routine tasks in a food processing operation?

Standard Operating Procedures (SOPs)
Question #6

What is the ultimate source of energy for muscle contraction?

ATP (Adenosine Triphosphate)
Question #7

What is the USDA Yield Grade (to the nearest 0.1) of this steer:

HCW = 800     Adj. PYG = 3.0
KPH = 2.5%     REA = 14.2
2.6
Question #8

Where is AMSA’s headquarters?

Savoy, IL
Question #9

Identify this equipment.

Incubator
Question #10

What is depleted from muscle before slaughter to produce “dark cutting beef?”

Glycogen
Question #11
What is a batter-like meat product produced by forcing bones with attached edible meat under high pressure through a sieve or similar device to separate the bone from the edible meat tissue?

Mechanically Separated (Deboned) Meat
Question #12

What vitamin, when fed to cattle, has increased retail case-life of fresh beef?

Vitamin E
BHA, BHT, and propyl gallate are used in processed meats to do what?

Antioxidants
Question #14

What is the cooking loss percentage of a roast that had a raw weight of 20 lbs and a cooked weight of 15 lbs?

25
Question #15

What is an illness caused by ingestion of toxins?

Intoxication (Food Poisoning)
Question #16

What causes wrinkled casings of beef sticks?

Stuffed too loosely
**Question #17**

What is the scientific name of this bone?

Scapula
Question #18

What is inserted into the ear of feedlot cattle to increase growth and feed efficiency?

Implant
Question #19

What are beef or lamb carcasses with a thin layer of fat covering that are chilled rapidly susceptible to?

Cold Shortening
Question #20

What enzyme inhibits calpains during the cooler aging process?

Calpastatin
Question #21

Identify this equipment.

Meat Grinder
Question #22

Identify this wholesale cut.

Chuck
Question #23

What is the IMPS series for Fresh Lamb (standardized cuts)?

Series 200
Question #24

What temperature (°F) should water in sterilizers at meat processing facilities be kept?

180
Question #25

What is the largest national trade association representing the meat packing and processing industry?

American Meat Institute (AMI)
Question #26

Which line on the graph represents the normal pH decline of a beef carcass?

Line 2
Question #27

What is the term used for the weight animals lose while being hauled and held off feed before slaughter?

Shrink (Drift)
Question #28

What is a brine of salt, water, and sugar cure?

Sweet Pickle
Question #29

What pigment results when fresh meat (oxymyoglobin) is oxidized?

Metmyoglobin
Question #30

What study was conducted in 1991, 1995, and 2000 to establish baselines for beef quality shortfalls and identify targets for desired quality levels?

National Beef Quality Audit
Question #31

What talk show host was sued by cattle producers because of an episode aired in April 1996 about “Mad Cow Disease?”

Oprah Winfrey
Question #32

Identify this cut.

(Pork) Spareribs
Question #33

What is a high-quality fat lining the abdominal wall of pork carcasses?

Leaf Fat
Question #34

What company produces SPAM® and Cure81® Hams?

Hormel Foods
Question #35

What act of 1967 specifies that all states must have an inspection system “equal to” that of the federal meat inspection system?

Wholesome Meat
Question #36

Typically, what color is the fat of cow carcasses that have not been grain fed?

Yellow
Question #37

What organ converts lactic acid to glucose?

Liver
Question #38

What region of the protein molecule is attracted by fat in a sausage batter?

Hydrophobic
Question #39

What tropical plant produces bromelin, a meat tenderization enzyme?

Pineapple
Question #40

What are gram-negative, non-spore-forming rods that ferment lactose to acid and gas in 48 h at 37° C?

Coliforms
Question #41

Identify this muscle.

Biceps femoris
Question #42

What act of 1999 requires timely reporting of livestock market data?

Livestock Mandatory Reporting
Question #43

What microbiological test provides a general estimate of live, aerobic bacteria?

Aerobic Plate Count (APC) or Total
Question #44

Which act established Land Grant Universities in 1862?

Hatch Act
Question #45

What is the common name for the pelt removal process during sheep slaughter?

Fisting
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 5
Question #1

What is the USDA quality grade (to the nearest one-third of a grade) of a beef carcass with A\(^80\) lean maturity, D\(^80\) skeletal maturity, and Small\(^{50}\) marbling?

USDA High Utility
Question #2

What does FSIS recommend as the minimum degree of doneness (°F) for ground beef?

160
Question #3

In what city was the first meat judging contest held?

Chicago, IL
Question #4

Identify this muscle.

Infraspinatus
Question #5

Quality assurance employees in beef packing plants routinely perform AQL tests. What compound term does the acronym AQL represent?

Acceptable Quality Levels
Question #6

What two myofibrillar proteins form cross-bridges during muscle contraction?

Actin and Myosin
Question #7

What company produces and markets Sterling Silver Beef and Pork® and Cattleman’s Collection Beef®?

Excel (Cargill)
Question #8

Meat from which sex class of cattle typically has the most bind?

Bull
Question #9

What type of oxygen impermeable packaging is typically used in red meat fabrication facilities?

Vacuum Packaging
Question #10

What bacterium (genus & species) is yellow in color and found on the skin and hair of animal and man?

*Staphylococcus aureus*
Question #11

What is a person called who buys and sells futures contracts but has no role in the production of those commodities?

Speculator
Question #12

What is the scientific name of this bone?

Tibia
Question #13

What is the leading U.S. beef export item?

Short Plate
Question #14

What sausage manufacturing process involves grinding and mixing meat ingredients with cure to permit protein solubilization and chemical analyses before final mixing in sausage manufacture?

Preblending
Question #15

Which university offered the first college “meats” course in 1893?

University of Minnesota
Question #16

What is the most abundant component of skeletal muscle?

Water
Question #17

What is a general term applied to any ingredient added to improve or modify flavor in processed meat products?

Seasoning
Question #18

What is the most abundant cytoskeletal protein in muscle?

Titin
Question #19

What is defined as the ability of meat to retain its water during application of external forces such as cutting, heating, grinding, or pressing?

Water Holding Capacity
Question #20

Which red meat species has the most similar dressing percentages to broilers?

Swine
Question #21

Which steak was cut from the most posterior location?

A

B

C
Question #22

The extraction technique used by the meat industry to remove fats from most by-products that have no better market potential is called what?

Rendering
To standardize the names of retail cuts, the meat industry has adopted a common list of names called what?

Uniform Retail Meat Identity Standards (URMIS)
Question #24

What is defined as any substance or agent present in food in an amount that renders the food unacceptable or potentially harmful to consumers?

Contaminant or Adulterant
Question #25

The beef rib and chuck are correctly separated between which two ribs?

5th and 6th
Question #26

Typical mutton carcasses always have ________ joints on their front shanks.

Spool
Question #27

What is the condition caused by loss of moisture from the frozen surface of meat?

Freezer Burn
What is an infection that can be caused by eating undercooked pork from swine fed raw garbage?

Trichinosis
Question #29

What slaughter type is performed according to prescribed rabbinical procedures, under supervision of authorized representatives of the Jewish faith?

Kosher
Question #30

Who conducts the voluntary seafood inspection program on a fee-for-service basis?

National Oceanic and Atmospheric Administration (NOAA)
Question #31

What is the most commonly used proteolytic enzyme, an extract from the papaya plant?

Papain
Question #32

What is the process of placing meat products into casings?

Stuffing
Question #33

What is an increase in size resulting from the multiplication or production of new cells?

Hyperplasia
Question #34

What are the U.S. Consumer Grades for poultry carcasses?

A, B, and C
Question #35

The per capita U. S. consumption of which kind of meat has decreased the most since 1985?

Beef
Question #36

What is the time necessary at a given temperature to sterilize a suspension of bacteria and their spores (if they form spores)?

Thermal Death Time
Question #37

Steer and barrow carcasses, unlike heifer and gilt carcasses, have what adjacent to the posterior end of the aitch bone?

Pizzle Eye
Question #38

In what U.S. city was the first meat packing plant started in 1818?

Cincinnati
Question #39

What are large fat particles that coalesce at the ends of sausages during heating?

Fat Caps
<table>
<thead>
<tr>
<th>Question #40</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the food poisoning resulting from ingestion of a toxin (produced from an anaerobic, spore-forming, gas-forming bacterium) that affects the central nervous system of its victims?</td>
</tr>
</tbody>
</table>

Botulism
The lamb shoulder is correctly separated from the lamb rack between what ribs?

4th and 5th
Question #42

A beef carcass had a cold carcass weight of 784 lbs and a hot carcass weight of 800, what is the percentage cooler shrink?
Question #43

What is the common name of this bone?

Aitch bone
Question #44

What is the shape of the federal inspection stamp for exotic meat?

Triangular
Question #45

Fresh smoked Kielbasa originated in what country?

Czechoslovakia
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 6
Question #1

What is the world’s oldest and most common form of food preservation?

Drying
Question #2

List one of the three safe methods to defrost food.

Refrigerator, Cold Water, or Microwave
Question #3

What are the 3 basic meat curing ingredients?

Salt, Sugar (sweetner), Nitrite
Question #4

What seafood has the highest per capita consumption in the United States?

Tuna
Question #5

What food stuff is in shortest supply in world?

Protein
Question #6

What are the only kind of uncooked hams of commercial significance produced in the United States?

Country Hams
Question #7

What is the “Ideal” pork color described in the Pork Quality Standards?

Reddish Pink
Question #8

What is the state of muscle when permanent cross-bridges form and prevent sliding of filaments, so that the muscle becomes inextensible?

Rigor Mortis
Question #9

Who was the first winner of the R. C. Pollock Award and the first president of AMSA?

R. W. Bray
Question #10

What is the name of the portion of this carcass that is shown?

Hindsaddle
Question #11

What is a technique used to inject pickle simultaneously and automatically through a series of hollow needles, the shafts of which have numerous evenly-spaced holes along their lengths?

Multiple injection
Question #12

What year was the Federal Meat Grading Service established?

1925
Question #13

Soy protein isolates have at least what percent protein?

90
Question #14

What is the USDA Quality Grade of a lamb carcass with Pr-conformation and Ch-quality?

USDA Choice
The USDA-FSIS requires that the internal muscle temperature of poultry be decreased to what temperature (°C) or lower within 8 hours of slaughter? 5
Question #16

Which chop has the **lowest** cutability?
Question #17

What innovation in beef marketing did IBP perfect in 1967 that dramatically changed the beef industry?

Boxed Beef
Question #18

Which company first utilized HACCP to ensure food safety in response to requirements imposed by NASA for “space foods”?

Pillsbury
What substance is formed when collagen is heated in the presence of moisture? 

Gelatin
Question #20

What is caused by the iron-catalyzed oxidation of unsaturated fatty acids and becomes more noticeable when refrigerated, precooked, uncured meats are reheated?

Warmed-over Flavor
Question #21

What portion of the sarcomere is indicated?

A Band
Question #22

Identify this amino acid.

Lysine
Question #23

What breed of cattle produces the most beef in the United States?

Holstein
Question #24

What is the minimum marbling requirement for an “A” maturity beef carcass to grade USDA Select?

Slight00
Question #25

Which organization is responsible for the collection, distribution, and program accountability of the pork checkoff?

National Pork Board
Question #26

Which sarcoplasmic muscle protein is primarily responsible for meat color?

Myoglobin
Question #27

What type of cholesterol is known as “Bad” cholesterol?

LDL
Question #28

What meat processing procedure is used to obtain pork with high pH and high water holding capacity?

Hot-boning
Question #29

Edible collagen casings used for many sausages are made from which layer of the beef hide?

Corium
Question #30

When counting bacterial colonies, the acronym TNTC stands for what?

Too Numerous To Count
Question #31

Who was the first person to claim that electricity made meat “uncommonly” tender?

Benjamin Franklin
Question #32

Under aerobic conditions, pyruvate from glycolysis goes to what cycle in the mitochondria?

TCA
Question #33

What tendon is used when beef carcasses are hung on the rail?

Achilles
Question #34

Between which two ribs should a pork carcass be ribbed to measure loineye area?

10\textsuperscript{th} and 11\textsuperscript{th}
Question #35

What is the pigment form that gives cured meat its typical pink color?

Nitrosohemochromochrom
Substances that inhibit microbial activity are called what?

Bacteriostats
Question #37

What is the common name of a spinous process of a vertebra?

Feather Bone
Question #38

Identify this muscle.

Trapezius
What inorganic compound, found in red meat, is needed for hemoglobin production?

Iron
What is the leading spice used in the U.S. meat industry?

Mustard (domestic)
Question #41

What year were the Official United States Standards for Grades of Carcass Beef promulgated?

1926
Question #42

What proteolytic enzymes are located in lysosomes?

Cathepsins
Question #43

Identify this item.

Gambrel
Question #44

What term is given to the organs of the thoracic cavity which include the heart, lungs, and trachea?

Pluck
Question #45

Where was the American Meat Science Association established?

University of Wisconsin
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 7
Question #1

Which country imports the most US beef?

Japan
Question #2

What are yield grades used to estimate?

Cutability
Question #3

What are the 4 major fat depots in a steer?

Backfat, Seam Fat, Marbling, KPH
Question #4

What is the second most popular sausage in the U.S.?

Bologna
Question #5

What substance is used in meat curing to counteract the harsh flavor of salt?

Sugar
Question #6

An increase in cell size is termed what?

Hypertrophy
What bacterium (genus & species), typically found on raw chicken, is the leading cause of bacterial diarrhea in the United States?

*Campylobacter jejuni*
In Japan, what fish is an expensive delicacy and extremely toxic?

Puffer
Question #9

What vertebra is found in a T-Bone steak?

Lumbar
Question #10

Name the two researchers who developed the most widely used and accepted machine to measure meat tenderness?

(Ken) Warner & (Lyman) Bratzler
Question #11

Approximately, how many broilers are slaughtered in the US per year?

8.5 Billion
Question #12

How many ribs are in an acceptable IMPS 204, Lamb Rib Rack?

8
Question #13

Over 90% of lamb carcasses graded in the United States are which USDA Quality Grade?

USDA Choice
Question #14

What is a transmissible spongiform encephalopathy that has been identified in free-ranging and captive mule deer, white tailed deer, and elk?

Chronic Wasting Disease
Question #15

What is characterized by extensive fat infiltration into muscle fibers, often caused by denervation of muscles?

Steatosis (Callus)
Question #16

What year was the American Meat Science Association established?

1964
Question #17

Identify this muscle.

Complexus
Question #18

What percentage of KPH would result in no adjustment being made to the USDA Yield Grade of a beef carcass?

3.5
Question #19

Most bacteria require a relative humidity in excess of what % to grow?

90
Question #20

What country is the largest producer and consumer of ducks?

China
Question #21

What is the incorporation of organic or inorganic compounds into the properly prepared hide or skin collagenous structure to produce a stable, flexible, sheet material called leather?

Tanning
Question #22

What USDA Quality Grade is designated for steer and heifer carcasses, but not cow carcasses?

USDA Prime
Question #23

Which chop was cut most anterior?

A  B  C

C
Question #24

What are the 4 most abundant chemical elements in an animal’s body?

Oxygen, Carbon, Hydrogen, & Nitrogen
Question #25

What protein exhibits little or no emulsifying properties due to its unique triple-helical structure, which is extremely stable and not readily solubilized?

Collagen
Question #26

What do you call a young, tender chicken about 7 weeks old with a dressed weight of $2\frac{1}{2}$ to $4\frac{1}{2}$ pounds?

Broiler
Question #27

What is the base USDA Quality and Yield Grade of most beef carcass pricing grids?

Choice YG 3
What is a savory, usually acidic, sauce in which meat is soaked to enrich its flavor or to tenderize it?

Marinade
Question #29

What is the nonprotein portion of myoglobin?

Heme ring
Question #30

If capillary breakage occurs in fat, the condition is commonly referred to as what?

Fiery Fat
Question #31

Fish fats are more what than the fats of either red or fowl meats, resulting in more rapid oxidation?

Unsaturated
Question #32

What city became immortalized as “hog butcher of the world” by poet Carl Sandburg?

Chicago
Question #33

In culinary terms, what can be meat from deer, elk, moose, antelope, caribou, and pronghorn?

Venison
Question #34

Which U.S. retailer is the leader in case-ready meat volume?

Wal-Mart
Question #35

What is the flavor enhancer manufactured from glutamic acid?

MSG
Question #36

What is the second most predominant fatty acid in beef and pork?

Palmitic
Question #37

What is the only known chemical substance that can be added to meat that prevents botulism?

Nitrite
Question #38

Which U.S. President signed the Wholesome Meat Act into law?

Lyndon B. Johnson
Question #39

Stuffing frankfurters too tightly could cause what defect?

Ruptured Casings
Question #40

Identify the common name of this connective tissue.

Backstrap
Question #41

What packaging method involves adding a head space gas to prolong the shelf life of the product?

Modified Atmosphere Packaging
Question #42

What is an unsexed male chicken usually under 8 months of age?

Capon
Question #43

What are unbranded hides commonly called?

Native
Question #44

Who were the 3 largest packers in the 1860’s?

Armour, Swift, and Morris
What is the proper location to measure fat thickness of a beef carcass?

\[ \frac{3}{4} \text{ distance opposite the ribeye} \]
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 8
Question #1

What is the most important (factor) step in improving palatability of meat products?

Cooking
Question #2

What is the one principal reason that so much chicken is consumed?

Cheaper than red meats or seafood
Question #3

What is the scientific name of these fat depots?

Intermuscular
Question #4

What words does the acronym VPP represent in meat processing?

Vegetable Protein Product
Question #5

What relies on abrasion of meat against meat or meat against stainless steel rotating paddles to accomplish diffusion and binding of curing ingredients with meat?

Massaging
Question #6

What company marketed bologna based on the song beginning with the lyrics: My bologna has a first name, it’s …?

Oscar Mayer
Question #7

The hump of *Bos indicus* cattle contains which enlarged muscle?

*Rhomboideus*
Question #8

Identify this equipment.

Air Knife
Question #9

Identify these vertebrae.

Lumbar
Question #10

What is the scientific name of the beef tri-tip muscle?

Tensor fasciae latae
Question #11

What equals the vapor pressure of the solution divided by the vapor pressure of the pure solvent (water)?

Water Activity
Question #12

Tests for which two bacteria must be conducted under the Final Rule on Pathogen Reduction and HACCP?

Generic *E. coli* and *Salmonella*
Question #13

What are fresh hams are commonly called by the packing industry?

Green Hams
Question #14

What single kind of restructured meats represents the most volume and value and involves binding meat pieces into a single piece?

Sectioned and Formed
Question #15

What has been replaced by cattle hides as a covering for footballs?

Pigskin
Which country has the highest per capita consumption of beef?

Argentina
Question #17

Potassium sorbate can be applied to sausage casings before or after stuffing to retard what?

Mold Growth
Question #18

What are the 3 USDA Quality Grades of rabbits?

A, B, & C
Question #19

In 1989, the pork industry began a national eradication program for what virus, which is nearing completion?

Pseudorabies
Question #20

What is accomplished by passing steaks or boneless sub-primals through a bank of needles or through a steak mascerator?

Mechanical Tenderization
Question #21

What is the top broiler producing company in the United States?

Tyson
Question #22

What country is the leading importer of Canadian pork?

United States
Question #23

Identify this wholesale cut.

Boston Butt (Shoulder)
Question #24

What is the average dressing percentage of a male broiler?

73% (71-75)
Question #25

From what language was the word “sausage” derived?

Latin
Question #26

What spice from the dried leaves of an herb in the mint family gives pork sausage its typical flavor?

Sage
What is glucose stored as in the liver and in skeletal muscle?

Glycogen
Question #28

The first alteration observed in ultrastructural integrity of postmortem muscle fibers is degradation of what?

Z Disks
Question #29

Which was cut most cranial?

A

B

C

C
Question #30

In the food service industry, the acronym HRI stands for what?

Hotel, Restaurant, Institution
Question #31

What are the two principal sources of juiciness in meat, as detected by consumers?

Water and Intramuscular Fat (Marbling)
Question #32

Excessive amounts of nitrite in cures may cause a greening of cured meat pigment called what?

Nitrite Burn
A steer was sold on the rail. Its 700-lb carcass graded USDA Choice, YG 5. The base price for Choice YG 3 steers was $130/cwt with a $30/cwt discount for YG 5. How much money did the producer receive for the steer?

$700
Question #34

Which steak has the highest muscle to bone ratio?

A  B  C
Question #34

What is the disease found in humans that is similar to BSE?

vCj D
Aerobic plate counts are reported as CFU/g or mL. What does the acronym CFU stand for?

Colony Forming Unit
Question #37

The tongue is divided into 4 general regions of taste. What taste is detected on the tip of the tongue?

Sweetness
Question #38

The single most important phase of a sterile canning operation is what?

Retorting
Question #39

What is a cornmeal-based suspension of head meat and/or pork sausage originating from the Pennsylvania Dutch?

Scrapple
Question #40

Which university will host the 2004 RMC?

University of Kentucky
Question #41

Tissues or ingredients that have a binding index lower than 50 are called what?

Fillers
Question #42

What is defined as chopped fresh and/or frozen beef, with or without added beef fat and/or seasonings? It shall not contain more than 30% fat, and shall not contain added water, binders, or extenders.

Hamburger
Question #43

What sausage probably is produced in the greatest amount in the world? In some regions, the green pistachio nut is a traditional ingredient.

Mortadella
Question #44

What is the common name of this steak region?

Tail
Question #45

Who is the most well known scientists for developing livestock handling facilities and studying animal behavior?

Temple Grandin
2nd Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Round 9
Question #1

What act established the Cooperative Agricultural Extension Service?

Smith-Lever Act
Question #2

Emulsifying proteins are called what because of their ability to harden during the cooking cycle?

Heat-coagulable
Question #3

What bacteria (genus & species) is the leading cause of food poisoning in Japan and is almost exclusively contracted from seafood?

*Vibrio parahaemolyticus*
Question #4

Withholding feed 12 to 24 hours prior to slaughter results in greater ease of what?

Evisceration
In June 2002, a U.S. District Court judge in South Dakota ruled what unconstitutional and ordered collection stopped by July 15, 2002?

Beef Checkoff
Question #6

Which country produces the most meat in the world?

United States
Question #7

Identify this bone.

Femur
Question #8

What does the acronym PETA stand for when referring to animal activist organizations?

People for the Ethical Treatment of Animals
Question #9

When what is too high, moisture condenses on meat; if too low, moisture is lost to the atmosphere?

Relative Humidity
Question #10

Where is most calcium stored in relaxed skeletal muscle?

Sarcoplasmic Reticulum
Question #11

FSIS allows poultry carcasses and parts to pick up water during chilling. How much weight gain does FSIS allow in red meat carcasses?

None
Question #12

What is the IMPS series for Fresh Veal and Calf (standardized cuts)?

Series 300
Question #13

The number shown on the federal inspection stamp, in this case 38, is what number?

Establishment
Question #14

What is the name of this cut, which is from the distinctive shape of this bone?

7-Bone
Question #15

What is the typical length of a sarcomere in resting mammalian muscle?

2.5 µm
Question #16

Which line on the graph represents the pH decline of a pork carcass that was stressed immediately prior to slaughter?

Line 3
Question #17

What joint is cut to remove the head of a pork carcass?

Atlas joint
Question #18

Identify this retail cut.

Lamb Loin Double Chop
What invention shortly after the Civil War enabled slaughter operations to be located near points of production instead of near points of consumption?

Refrigerated Railroad Car
Question #20

What amino acids are those that cannot be synthesized by the body in amounts sufficient to meet its requirements?

Essential
Question #21

What causes “muddy” smoked color in processed meat products?

Smokehouse too cold
Question #22

Which fatty acid is most prevalent in beef, pork, and lamb?

Oleic
Question #23

Which arteries and veins are severed when cattle and swine are properly stuck?

Carotid arteries and Jugular veins
Question #24

What multicellular microorganisms are characterized by their mycelial morphology, display a variety of colors, and are generally recognized by their fuzzy appearance?

Molds
Question #25

What meat packaging innovation, involving meat cuts being shipped directly to the retailer for display, has improved merchandizing, quality, and food safety?

Case-Ready
Question #26

What did one cow in Canada test positive for that caused the US Secretary of Agriculture to prohibit import of ruminants or ruminant products from Canada in May?

BSE
Question #27

What are the 3 factors used to determine the USDA Quality Grade of a lamb carcass?

Maturity, Conformation, Flank Streakings
Question #28

What USDA beef carcass grade includes only those carcasses that are inferior to the minimum requirements specified for the Cutter grade?

Canner
Question #29

What describes the intensity of a fundamental color with respect to the amount of white light that is mixed with it?

Chroma
Question #30

What is the rehandling or repacking of meat during the pickling period to permit a more uniform distribution of pickle?

Overhaul
Question #31

How many ounces are considered a serving of cooked meat?

3 oz.
Question #32

This ham exhibits color differences between muscles. What is this condition called?

Two-toning
Question #33

What is the average dressing percentage of steers?

62% (60 – 65%)
Question #34

What portion of the sarcomere is indicated?

H Zone
Question #35

Which tendon connects the Gastrocnemius to the fibular tarsal bone?

Achilles
Question #36

What are the 4 methods of heat transfer?

Conduction, Convection, Radiation, Microwave
Question #37

Identify this muscle.

Vastus Lateralis
Question #38

What commonly-used procedure to determine fat content involves placing a previously-dried meat sample in organic solvent and heating it for several hours?

Ether Extraction
The checkoff program for which red meat species was established by the USDA on April 11, 2002?

Lamb
Question #40

What is a small, intracellular protozoan parasite that reproduces only in a cat’s intestine?

*Toxoplasma gondii*
Question #41

What are the 5 USDA Quality Grades of ovine carcasses?

Prime, Choice, Good, Utility & Cull
Question #42

What causes gelatin pockets in bologna?

Too much connective tissue
Question #43

What is the common name of this muscle?

False Lean
Question #44

Who is the Research Leader of the Meats Research Unit at the Roman L. Hruska Meat Animal Research Center in Clay Center, NE?

Dr. Mohammad Koohmaraie
It has been reported that ______ Airport sells the most hot dogs of any place in the world.

O’Hare (Chicago)
2\textsuperscript{nd} Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Finals Round 1
Question #1

Identify this muscle.

_Supraspinatus_
Question #2

What is the graphic shown commonly known as?

Food Guide Pyramid
Question #3

Which product has the most cholesterol per 3 oz. serving?

A. Cod  
B. Tuna  
C. Shrimp  
D. Crab  
E. Flounder

C. Shrimp
Question #4

What type of poisoning results when histidine in fish is converted to histamine?

Scrombroid poisoning
Question #5

What is the first rule of safe food preparation in the home?

Keep It Clean
Question #6

What is the average dressing percentage of a market barrow?

75% (70 – 78%)
Question #7

What type of vertebrae are found in the forequarter of a beef carcass?

Cervical & Thoracic
Question #8

What organization is a non-profit trade association working to create new opportunities and develop existing international markets for U.S. beef, pork, lamb and veal?

U.S. Meat Export Federation (USMEF)
Question #9

When was poultry inspection started in the United States?

1957
Question #10

By FSIS regulations, what percentage fat is allowed in fresh pork sausage?

50%
Question #11

What does the 2002 Farm Bill require the Secretary of Agriculture to implement at the final point of retail sale for beef, lamb, pork, fish, shellfish, perishable agricultural commodities, and peanuts?

Country of Origin Labeling
Question #12

What is the most abundant protein in an animal’s body?

Collagen
Question #13
Identify the technology shown.

Steam
Vacuuming
What company marketed bologna based on the song beginning with the lyrics: “My bologna has a first name, it’s …?”

Oscar Mayer
Question #15

What 2 factors determine USDA Quality Grade of a beef carcass?

Marbling & Maturity
Question #16

Which country is the leader in broiler production, per capita consumption, and exports?

United States
Question #17

*E. coli* O157:H7 causes what disease resulting in kidney failure?

Hemolytic Uremic Syndrome (HUS)
Question #18

Which food component is known to have the greatest effect on sustained juiciness?

Fat
Question #19
In the diagram shown, which injection site location is most acceptable?
Question #20

What is the most common instrument used to measure ribeye area and fat thickness of live animals?

Ultrasound
Question #21

What is the length of time before meat products become unpalatable, unsafe for human consumption, or unattractive in the display case?

Shelf-life
Question #22

Oxidation occurs when $O_2$ attaches at what location in a fatty acid?

Double Bond
Question #23

The cell membrane surrounding the muscle fiber is called what?

Sarcolemma
Question #24

Lack of what stored component in muscle causes the DFD condition?

Glycogen
Question #25

What veal is from calves that are 1 to 7 days old and have received only milk as a feed source?

Bob
Question #26

In the picture shown, which location should fat thickness be measured to determine preliminary yield grade?

A
Question #27

What type of water is attached to protein and not released by chewing?

Bound
Question #28

What is the maximum level of nitrites allowed in bacon?

120 ppm
Question #29

What spice is commonly used if black pepper specs are not desired, but pepper flavor is desired?

White Pepper
Question #30

Under anaerobic conditions, glucose metabolism produces what two compounds?

ATP & Lactic Acid
Question #31

What describes the wavelength of light radiation?

Hue
Question #32
What is this portion of a beef carcass?
Hindquarter
Question #33

The thick filament of a sarcomere is composed primarily of what protein?

Myosin
Question #34

Identify this bone.

Humerus
Question #35

Since sodium is the element in salt that causes hypertension, substitution of what for part of the NaCl has been used for producing sodium-reduced meat products?

Potassium Chloride
Question #36

What term refers to the cartilage located on the ends of the spinous processes of the thoracic vertebrae?

Buttons
Question #37

What is the juice exuded from fresh, cooked and cured meats after they are packaged and remains in the package at the time of opening?

Purge
What is a cloth that has been soaked in chlorinated water then wrapped around a carcass to smooth the fat, remove the blood and reduce cooler shrink?

Shroud
Question #39

What folk legend was a meat packer that provided meat to the US Army during the War of 1812?

Uncle Sam (Samuel Wilson)
Question #40

Other than adding moisture, what is the purpose of adding ice in sausage production?

Keep Batter Cool
A steer weighed 1,200 lbs at slaughter and dressed 64%. The packer paid $125/cwt for the carcass. How much was paid for the steer?

$1000
Question #42

What gas is used to chemically stun hogs?

Carbon Dioxide
Question #43

What is the common name for potassium nitrate?

Saltpeter
Question #44

What are the two types of adipose tissue found in many animal species at birth?

White and Brown
Question #45

Use Pearson Square (Sausage Maker’s Square) to determine the percent of each meat source shown to formulate a 25% fat sausage.

Meat Source 1 = 90:10 beef trimmings
Meat Source 2 = 50:50 pork trimmings

62.5% Source 1; 37.5% Source 2
2\textsuperscript{nd} Annual AMSA Quiz Bowl

Reciprocal Meat Conference

Finals Round 2
Question #1

What type of cut has been made to this chop to split it in half but leaving halves hinged on one side?

Butterfly
Question #2

What is the process of killing all bacteria, spores and viruses in a meat product?

Sterilization
Question #3

What is the process of removing hair on a hog carcass by burning it off?

Singeing
Question #4

What defect condition is caused by the cold shortening of the outside edges of ribeye muscle which causes a darkened and sunken appearance?

Heat Ring
Question #5

What is fat that has been deposited in the remaining portion of the scrotum of a steer?

Cod Fat
Question #6

What is the portion of the diaphragm muscle that is attached to the back region of the last rib?

Hanging Tender
Question #7

Identify the breed type these ribeye steaks were produced from. These steaks are a delicacy in Japan.

Waygu
Question #8

What is the inner layer of skin that has been left on a lamb carcass after the pelt has been removed?

Fell Membrane
Question #9

What is a young immature chicken, usually five to seven weeks of age, weighing not more than two pounds ready-to-cook weight?

Cornish Game Hen
Question #10

Identify the retail cut.

Beef Shank
Cross Cut
Question #11

What disease affects channel catfish and other species due to elevated levels of nitrite in water?

“Brown Blood” Disease
Question #12

What country exports the most shrimp to the United States?

Thailand
Foot and Mouth disease is found on all continents except what three?

Antarctica, Australia, and North America
Question #14

What cooking method is used when meat is browned in a small amount of fat then cooked slowly in a covered pan with a small amount of liquid?

Braising
What is the quality grade of an A maturity beef carcass with Sm²⁰ marbling that is a 1/3 dark cutter?

USDA Select
Question #16

What is defined as those animal tissues that are suitable for food?

Meat
Question #17

The structural unit of skeletal muscle tissue is the highly specialized cell known as what?

Muscle Fiber
During ante-mortem inspection, animals that have an abnormal temperature or display other symptoms of disease that would render their meat unfit for food are marked what?

U.S. Condemned
Question #19

What is the gender of this beef carcass?

Male
Question #20

What does the “T” in T-bone indicate?

Transverse Process
Question #21

What sub-primal would be made by removing the section of the round indicated?

Knuckle
Question #22

What three basic operations are involved in sharpening a knife?

Grinding, Honing, & Steeling
Question #23

What are the protein-rich solids that remain after lard has been pressed from rendered pork fat?

Cracklings
Question #24

How many servings per day of meat, poultry or fish are suggested in the Food Guide Pyramid?

2 to 3 Servings
Question #25

Which product has the least protein per 3 oz. serving?

A. Ground beef patty
B. Beef and pork frankfurter
C. Pork Cutlet
D. Chicken Breast
E. Veal Cutlet

B. Beef and pork frankfurter
Question #26

What type of polyunsaturated fatty acids found in fish oils is believed to decrease the tendency to develop cholesterol clogged arteries?

Omega-3
The percent daily value of each nutrient on a food label is based on a diet of how many calories?

2,000
Question #28

Which country has the highest per capita consumption of beef?

Argentina
Question #29

How many thin filaments surround 1 thick filament in a cross-sectional view of a muscle fiber?

6
Question #30

What is the shape of the horse meat inspection stamp?

Hexagonal
Question #31

What year did the Nutrition Labeling and Education Act become mandatory?

1994
Question #32

What is major meat ingredient in Braunschwieger?

Liver
Question #33

Identify the muscle.

Psoas minor
How much nitrite is in an 833 curing brine?

3 ounces
Question #35

Chlorine is commonly used at what concentration to sanitize processing equipment?

200 ppm
Question #36

Identify the structure.

Myoglobin
Which company uses “Today’s Flavor” as their current catch phrase?

Hormel
Question #38

What synthetic hormone used in beef was banned in 1979 by FDA because it was classified as a carcinogen by EPA?

DES
Question #39

What is the shape of a typical growth curve of red meat animals?

Sigmoid Curve
Question #40

What is the common name this muscle?

Rose Meat
Question #41

What 3 forms does water exist in muscle?

Bound, Immobilized, & Free
Question #42

When referring to hog scalding, what are the months from September – November known as?

Hard-hair months (season)
Question #43

Of the 4 tissue types in the animal body, quantitatively, which tissue contributes the least to meat?

Epithelial
Question #44

Identify this retail cut.

Lamb Rib
Crown Roast
Question #45

Who was the first Executive Director of AMSA?

H. Kenneth Johnson