

Livestock Knowledge Challenge 2026
Intermediate/Senior Study Guide: All of the Junior Study Guide Plus
the Following

What are the two main types of cuts when processing meat? Wholesale and Retail

What are the two types of grades for carcasses? Yield grade and Quality Grade

Urinary calculi is another name for. Water Belly

What is a marking harness and when is it used? It is used during mating season, and it is used to visibly mark the females which have been ridden or mounted by the male.

Iron deficiency causes what? Anemia

Lack of red blood cells is called what? Anemia

The first compartment in the stomach of a ruminant is the? Rumen

A definite quantity of feed allowed daily is called a Ration

A substance used to stimulate an animal to build up resistance to a disease is called what? A Vaccine

What is mastitis? An inflammation of the mammary gland; usually halts production of milk in the infected area.

What is a parasite? An organism that depends on another organism for its nourishment

What abnormal condition is caused by animals standing in muddy pens or lake beds for too long? Foot rot

What percent of a calf, lamb, or pig crop should you try to obtain? 90-100% is acceptable

A characteristic of an animal that can be seen and/or measured such as color, weight or presence or absence of horns is termed: A. genotype B. phenotype C. prototype D. heritability
Answer = B. phenotype

What type of animal is one that has a stomach divided into four components and chews a cud consisting of regurgitated partially digested food? Ruminant

In what livestock species is a "hind feet first" birth presentation considered a normal delivery?
Swine

What is the condition that occurs when gas is trapped in the ruminant digestive tract causing rumen enlargement? Bloat

Sire summaries generally report EPD's on birth, growth, and maternal traits. What do the initials E.P.D. stand for? (Wyoming 4-H Beef Manual) Expected Progeny Difference

What is a type of identification, used primarily on cattle intended for showing, that involves an ink imprint on a piece of paper? (BU-6352 Revised 1999) Nose Print

What is the hormone produced by the cells of the testis that stimulates male sex drive, masculine characteristics, development of the male reproductive tract and spermatogenesis? (BU 6353 Revised 1999) A. Estrogen B. Prostaglandin C. Testosterone (C)

When the rear hocks have too much set, the hind legs are too far under an animal it is said to be. (4HCCS BU-6367 Revised 2000) A. Cow hocked B. Pigeon toed C. Sickle hocked* Answer= C. Sickle hocked

What is a condition when the front knees are too close together? (BU-6352 Revised 1999) Knock-kneed

When administering fluids through the mouth the piece of equipment used is often referred to as a _____ gun. (4H194R) Drench

What animal do we get insulin, heart valves, second skin for burn victims, and heparin for heart patients from? Pigs

What are the beneficial bugs in the rumen? A. viruses and bacteria B. viruses and fungi C. bacteria and fungi D. parasites E. bacteria and protozoa* Answer= E. bacteria and protozoa

What is a TMR? A. Total Meal Ration B. Total Mixed Ration* C. Total Mineral Ration D. Tub Mixer Ration Answer= B Total Mixed Ration

How long after the first vaccination does an animal start developing immunity to the disease? A. about 1 week B. about 2 weeks* C. about 3 weeks D. about 1 month Answer = B. about 2 weeks

This is the act of giving birth. A. dilation B. capaciation C. hemostasis D. parturition E. fertilization Answer= D. parturition*

Which of the following would be expected to have the highest protein content? A. Prairie hay B. Alfalfa hay* C. Wheat straw D. Sorghum silage Answer= B. Alfalfa hay

Intramuscular injections should only be given in what body part? (Nebraska 4-H 2002 Livestock Quiz Bowl Questions) Neck or front shoulder

What common compound makes up most of the blood, carries nutrients to cell waste products away from cells and out of the body, helps to regulate body temperature, and acts as a lubricant? (Nebraska 4-H 2002 Livestock Quiz Bowl Questions) Water

Persistent diarrhea in young animals is commonly called what? (Nebraska 4-H 2002 Livestock Quiz Bowl Questions) Scours

What general term describes a ration that is low in energy, high in roughage and fiber and high in protein relative to the energy content? (Texas 4-H Quiz Bowl Sample Questions) Starter Ration

What term describes a ration that typically consists of 12 percent protein, moderate fiber and moderate energy content? (Texas 4-H Quiz Bowl Sample Questions) Growing Ration

What general term describes a ration that is utilized as the last stage of feeding and is very high in energy? (Texas 4-H Quiz Bowl Sample Questions) Finishing ration

Define the term infusion as it relates to medicine. (Texas 4-H Quiz Bowl Sample Questions) The continuous slow introduction of a solution, especially into the vein.

What causes warts? (Texas 4-H Quiz Bowl Sample Questions) a virus

Ringworms can be spread from animal to animal. What type of infection of the skin causes them? (Texas 4-H Quiz Bowl Sample Questions) Fungus

Referring to male livestock, what does B.S.E. stand for? (Kansas 4-H Sheep Quiz Bowl Manual) Breeding Soundness Examination

What is a disease characterized by a hard, swollen udder? (Kansas 4-H Sheep Quiz Bowl Manual) Mastitis

What is the greatest importance of salt in a livestock ration? (Kansas 4-H Sheep Quiz Bowl Manual) Stimulates appetite

Hormones are carried in the _____ of an animal. (Kansas 4-H Sheep Quiz Bowl Manual) Bloodstream

1. What does the term "70-70-0" mean? "70-70-0" applies to packers and feeders that ideally would like 70% of all fed cattle to grade Choice and higher with 70% YG 1s and 2s and zero outs.

Bonus: Name two functions of water in the body. Digestion Carrying food nutrients throughout the body Carrying waste products out of the body Cooling the body Lubricating joints

2. The cooking method that consists of browning meat in fat and then cooking it (covered) in a small amount of liquid is known as? Braising

Bonus: What is the name for the rhythmic smooth muscle contractions that propel foodstuffs distally through the esophagus and intestines? Peristalsis

3. Cattle grubs are part of the life cycle of which insect? a. Black fly b. Deer fly c. Heel fly* d. Horn fly Answer= c. Heel fly

Bonus: What is the major difference between a bull carcass and a bullock carcass? Maturity 4.

Which of the following is a synthetic hormone that is fed to feedlot heifers to keep them from coming into heat? a. Melengestrol acetate (MGA*) b. Rumensin c. Synchromate-B d. Progesterone

Answer= a. Melengestrol acetate (MGA*)

Many producers dock and castrate ram lambs at the same time.

Teeth can be used to determine the age of goats.

Which species of livestock has a diploid number of 27(pairs of chromosomes)? **Sheep**

Which trait in beef cattle has the highest heritability estimate? **Final Feedlot Weight**

Sheep have the highest heritability estimate for which of the following traits? Staple length, feed efficiency, conformation score, fat thickness? **Answer: Staple length**

Which trait for swine has the lowest heritability estimate? Percent ham, carcass length, loin muscle area, or litter size? **Answer: Litter size**

The physical appearance of an animal is referred to as its phenotype

The hormone responsible for the masculine appearance in animals is testosterone.

Which species of livestock reaches puberty based on the season and not age? Cattle, goats, sheep, or swine? **Answer: Goats**

The release of the egg from the ovary is called ovulation.

Which breed of beef cattle has been the leader on total number registered since 1970? Simmental, Hereford, Angus, or Charolais? **Answer: Angus**

Which breed of cattle did NOT originate in Scotland? Angus, Galloway, Shorthorn, or Highland? **Answer: Shorthorn.**

Which English breed of cattle was originally called Durhams? **Answer: Shorthorn**

In beef cattle, a muscle conformation score for feeder calves of 1 indicates which of the following? An exceptionally thin calf, a light muscled calf, a heavy muscled calf, or a double muscled calf? **Answer: an exceptionally thin calf.**

Which of the following breeds of beef cattle has the heaviest birth weight for calves of either sex for performance testing? Angus, Charolais, Hereford, Limousin? **Answer: Charolais**

In some cattle, a condition in which the lean meat is darker than normal is called what? A black cutter, a low cutter, choice, or dark cutting beef? **Answer: Dark cutting beef**

In comparing breed performance for litter size in swine, which breed has the highest litter size ratio? Hampshire, Landrace, Duroc, Chester White? **Answer: Landrace**

The four primal cuts of a hog carcass represent what percent of the total value of the animal? **Answer: 75 percent.**

Bonus: What is the natural barrier in a cow's reproductive tract through which an AI rod must be passed before semen can be properly deposited? Cervix

5. What is preconditioning? Include two practices that are typically done in preconditioning. Preparing feeder calves for market and shipment May include vaccinations, parasite control, weaning prior to shipment, castration, training cattle to eat and drink when in pens with other cattle

Bonus: What is the primary filtering organ in a cow's body? a. Reticulum b. Pancreas c. Liver* d. Kidney Answer = c. Liver

6. Name two factors that can affect the quality of hay. Kind of hay (i.e., prairie vs alfalfa), fertilizers, age/stage of maturity, how well it has been dried after being cut, storage and handling

Cuts of meat from some wholesale cuts of beef are best cooked by dry heat methods such as grilling and roasting. Name one of the wholesale cuts from which all of the meat should be cooked by dry heat methods. Rib and loin (includes shortloin and sirloin)

Bonus: If you found a cow in your herd in heat one morning, when would be the optimal time to breed her? a. Right away b. In 3 hours c. That evening* d. The next morning
Answer= c. That evening

8. Which nutrient supplies the materials necessary to make body tissues such as blood, muscle and skin? Protein

Bonus: Which class of nutrients is used primarily to build bones and teeth, with smaller amounts used for energy utilization, milk production and basic body function? Minerals

9. What are F1 crosses? Offspring resulting from the mating of parents of different breeds The first generation of crosses between two unrelated (though not necessarily purebred) populations

Bonus: During times of abundant intake, which organ stores vitamin A? Liver

Bonus: The mock tender comes from which beef wholesale cut? Chuck

Bonus: How many testicles have descended into the scrotum in a unilateral cryptorchid? 1

13. Which of these drugs, used to relieve pain in humans, is made from the gallbladder of a cow? a. Tetracycline b. Aspirin c. Cortisone* d. Codeine
Answer = c. Cortisone

Bonus: A feedbunk for a market animal should be how far above the ground or floor? a. 6-10 inches b. 10-18 inches c. 18-24 inches* d. 24-36 inches

Answer= c. 18-24 inches

Bonus: Which tissue has the highest water content-fat, muscle or bone? Muscle

Bonus: If an animal is 12% below the average in a particular trait, what is its trait ratio? 88

16. Cattle usually enter feedlots weighing between 700 and 850 pounds and finish between what weights? a. 850 and 1,000 pounds b. 1,000 to 1,300 pounds* c. 1,300 to 1,600 pounds

Answer= b. 1,000 to 1,300 pounds

Bonus: Feed costs represent what percent of the total cost to finish cattle? a. 55-65% b. 70-80% C. 85-95%*

Answer= C. 85-95%

17. What performance measurement is used to calculate a bull's maternal milk EPD? Weaning weights of the bull's daughters' calves

Bonus: If the genetic correlation between two traits is close to zero, what type of effect would you expect one trait to have on the other? Essentially no effect

Bonus: In a sperm cell, genetic information is contained in the a. acrosome b. head* c. tail

Answer= b. Head

Bonus: USDA feeder cattle grades are based on what two characteristics? a. Frame size and muscling* b. Age and weight c. Breed and sex d. Age and condition

Answer= a. Frame size and muscling

1. Brucellosis, also called Bang's disease, is a contagious bacterial disease that causes abortion in cattle. In terms of human health, this disease is important because this bacteria is responsible for this disease caused in man. a. Scarlet Fever b. Undulant fever* c. Typhoid fever d. Rocky Mountain spotted fever

Answer= b. Undulant fever*

2. The average rectal temperature of a cow is a. 98.6°F b. 101.5°F* c. 104.3°F d. 107.1°F

Answer= b. 101.5°F

3. is an abnormal condition of cattle caused by excessive production of methane gas in the rumen. It is characterized by distention of the rumen and is usually seen on the animal's upper left side. Name this condition. (Bloat)

4. Forage preserved by anaerobic fermentation is known as (Silage)

5. How many upper incisors does a mature cow typically have?(Zero, 8 lower incisors)

6. Upton Sinclair's book The Jungle depicted unsanitary conditions in the meat packing industry and was partially responsible for enactment of this federal law. a. The Meat Inspection Act of

1906* b. The Humane Slaughter Act of 1958 c. The Wholesome Meat Act of 1967 d. The Processed Products Inspection Improvement Act of 1986

Answer= a. The Meat Inspection Act of 1906

7. Which of these wholesale beef cuts contains the femur bone? a. Chuck b. Rib c. Loin d. Round*

Answer= d. Round

8. is characterized by localized areas of dehydration and discoloration on meat surfaces and is caused by excessive loss of moisture during freezer storage. (Freezer Burn)

16. In mature cattle, the largest compartment of the stomach is the rumen. What is the largest compartment in newborn calves? Abomasum

13) What is the length of the gestation period of a cow? A. 285 days (9 months and 7 days).

14) What feed helps your animal grow and build muscle? A. Proteins

15) Name two feeds for cattle that are a good source of protein. A. Cottonseed, Soybean, Linseed, Alfalfa Hay

16) What do you call high energy source feeds? A. Carbohydrates

17) Name 3 carbohydrate type energy feeds. A. Barley, Corn, Oats, Wheat, Milo, Beet Pulp, Molasses

18) What is the Food Conversion Ratio; FCR? A. FCR is the amount of gain you get from every pound of grain you feed.

19) What is the Food Conversion Ratio for cattle? A. The Food Conversion Ratio for cattle is 8:1

20) Feed that is low in digestibility and high in fiber is called what? A. Roughage

21) Give an example of roughage or high fiber feed. A. Hay or Pasture

22) A feed that is highly digestible and low in fiber is called what? A. Concentrate

23) What is the term "finish" describing? A. Degree of fatness and readiness for market.

24) What is the term used for describing the process of fattening, training, and grooming an animal for show or sale called? A. Fitting

25) What is a beef animal that has one or both parents not registered with a breed association called? A. Grade Animal

26) A table that gives a line of ancestors for an animal; a genealogical tree, is called what? A. Pedigree

27) T or F? Genetics is the study of how an animal processes its food. A. False. Genetics is the study of how animal or plant characteristics are passed from parent to offspring.

28) T or F? A small amount of marbling is necessary for juiciness and flavor of meat. A. True

29) T or F? Yield (Dressing Percent) is the weight (yield) of the carcass as a percent of live weight. A. True. Example: A 1000 lb. live steer yields a 600 pound carcass. The “dressing percent” is 60% (600 divided by 1000x100%=60%).

30) T or F? A “Rib Eye” is a cross section of the loin muscle (longissimus dorsi). The large muscle of a rib steak or loin chops. A. True

Wool is classified as fine, medium, or long

In a typical 250 lb market hob the four primal cuts make up about 44 percent of the live weight and represent about 75 percent of the total value of the animal.

The Chester White originated in Chester County, Pennsylvania, with additional development of the breed also occurring in Delaware County, Pennsylvania

On a beef carcass, the high-value wholesale cuts come from the loin, the rib, the round, and the rump.

The Murray Grey is a breed of cattle that originated in Australia

When discussing heredity in livestock species, not all differences in animals are caused by genetics. Some are caused by the environment.

When rotational grazing is used, the carrying capacity of the pasture is increased.

Creep feeding calves produces heavier calves, higher grade and more finish and creates less feedlot stress

When adding the enzyme Phytase to swine diets, the excretion of phosphorus in the manure is reduced.

The two factors that have a major influence on profitability in swine production are the number of pigs weaned per sow per year and feed efficiency.

The number one animal that causes predator losses in sheep is coyotes.

The Spanish Goat is a mongrel descendant of the milk goat breeds. They are also known now as brush goats or scrub goats.

When self-feeding bulls, use plenty of roughage so the bull will not become too fat or go off feed.

The main interest in Chinese breeds of swine for crossbreeding is for their large litter sizes.

On a standard ear notching system, the 5 numbers used for identification on the right ear are 1, 3, 9, 27, and 81.

Dorset sheep originated in Southern England, were developed in the 1800's, first imported into the United States in 1838, are considered a medium wool breed, and are white.

1. Market lambs can eat grass and be ready for slaughter without eating grain True or False (T)

2. Sheep may safely graze in the yard since ornamentals shrubs and bushes are not poisonous to sheep. True or False (F)

5. The average gestation length of a ewe is 9 months. True or False (F)

6. Which substance is used to treat a disease? A. fertilizer b. Vaccine c. antibiotic* d. Implant
Answer = c. antibiotic

7. What is creeping? A. Locking a Ram Up at night, b: providing extra feed for nursing lambs* c exercising market lambs, d. Bagging a ewe
Answer= b: providing extra feed for nursing lambs

8. A three-year old slaughter wether will have a break joint. True or False (F)

10. What is a prolapse? A. A feed additive B. A medicine C. When the vagina becomes inverted and sticks out D. lamb born backwards (C)

11. When a lamb is born, you should A. Check the ewes udder B. Identify the lamb C. Dip the naval D. all of these (D)
Answer= D. all of these

12. Sheared wool is now packed in A. Burlap bags B. Cardboard boxes C. Plastic Bags D. None of These (D)
Answer= D. None of These

13. A large, muscular, fast growing sheep breed: A. Southdown B. Polypay C. Rambouillet D. Suffolk (D)
Answer= D. Suffolk

15. Which is the most serious hoof problem in sheep? A. Clogged oil duct B. Foot scald C. Foot rot D. Thrush Answer= C. Foot rot

17. Which of the following is not a legume? A. Alfalfa B. Bluegrass C. Clover D. Soybeans (B)
Answer= B. Bluegrass

19. Which sheep breed is actually a composite? A. Suffolk B. Southdown C. Dorset D. Polypay*
Answer= D. Polypay

20. Your steer has gained 100 pounds in the last 30 days, consuming 750 pounds of feed which costs a total of \$50. What was the steer's average daily gain? A. .50 lb. B. 3.0 lb. C. 3.3 lb. D. 7.5 lb. ©

Answer= C. 3.3 lb

21. Using the information in question #20, what was the steer's feed conversion per pound of gain? A. 3.3 lb. B. 7.5 lb. C. 15 lb. D. 30 lb. (B)

Answer= B. 7.5 lb.

23. "Spider lamb" is a problem most often associated with which breed? A. Finn B. Dorset C. Suffolk D. Polypay (C)

Answer= C. Suffolk

26. During the production cycle of a cow, mare, ewe or sow, when are their nutritional demands the highest? A. Early gestation B. Late gestation C. Early lactation D. Late lactation (C)

Answer= C. Early lactation

27. If we are to give a steer an intramuscular injection of a product which causes tissues irritation, which is the preferred injection site? A. Rump B. Quarter C. Loin D. Neck (D)

Answer= D. Neck

28. Which of the following requires the least amount of feed to produce a pound of gain? A. Steer B. Lamb C. Barrow D. Broiler (D)

Answer= D. Broiler

30. If a heifer appears to be low headed, "broken" behind her shoulder and moves with a short stride, what is the most likely structural defect? A. Sickie hocked B. Droopy rump C. Shoulder too straight D. Ugly

Answer = C. Shoulder too straight

36. A two year sheep will have how many permanent front teeth? A. 2 B. 4 C. 6 D. 8 (B)

Answer= B. 4

37. The time between estrus or heat periods in a ewe is roughly how many days? A. 147 days B. 30 days C. 21 days D. 17 days (D)

Answer= D. 17 days

40. Which meat type breed has a white face and erect ears? A. Southdown B. Dorset C. Rambouillet D. Suffolk (B)

Answer= B. Dorset

41. What is another name for white muscle disease? A. Grass Tetany B. Bloat C. Hypomagnesia D. Stiff lamb disease (D)

Answer = D. Stiff lamb disease

43. Which of the following is not an example of internal parasites A. Lung Worms B. Ticks C. Tape Worms D. Flukes (B)

Answer= B. Ticks

44. Which of the following is a legume? A. Orchardgrass B. Roughages C. Soybean meal D. Concentrates ©

Answer = C. Soybean meal

45. What is the main source of antibodies for a young lamb? A. vitamin A B. calcium C. protein supplement D. colostrum (D)

Answer= D. colostrum

48. The average market age of a lamb is: A. 5 months B. 3 months C. 8 months D. 1 year (A)

Answer= A. 5 months

49. A deficiency of which mineral can cause “white muscle disease”? A. Selenium B. Magnesium C. Calcium D. Phosphorus (A)

Answer= A. Selenium

50. Which breed is noted for having large numbers of lambs? A. Dorset B. Hampshire C. Fin Sheep D. Southdowns Answer = C Fin Sheep

51. A lamb sirloin chop comes from the A. Shoulder B. Rib C. Loin D. Leg (D)

Answer= D Leg

52. Which of the following would not be considered a meat type breed? A. Suffolk B. Hampshire C. Dorset D. Rambouillet (D) Answer= D. Rambouillet

62. Shelled corn is used in rations primarily as a source of? A. Protein B. Fat C. Energy D. Minerals Answer= C. Energy

67. Which of the following occurrences can be prevented by vaccination? A. Foot Rot B. Founder C. Bloat D. Overeating Disease (D) Answer = D. Overeating Disease

68. What is the normal body temperature of a sheep? A. 98.6 B. 100 C. 101 D. 102.5 ©

Answer= C. 101

73. What is another name for the wingless flies (sometimes called ticks) which affect sheep? A. Lice C. Bots B. Stable Flies D. Keds (D) Answer= D. Keds

74. Which is higher in protein? A. Soybean Meal C. Alfalfa Pellets B. Cottonseed Meal (A)

Answer= A Soybean Meal

76. Which quality grade of beef is most commonly sold in grocery stores? A. Prime B. Choice C. Good D. Standard (B) Answer = B Choice

79. The average gestation period of swine is A. 21 days B. 114 days C. 150 days D. 130 days

(B) Answer= B 114 days

81. Feeder pigs normally weigh how many pounds when sold? A. 20 to 30 lbs. B. 40 to 50 lbs. C. 220 to 230 lbs. D. 230 to 250 lbs. (B) Answer= B 40-50 lbs.

93. An intramuscular injection should be given A. in the muscle B. under the skin C. in the vein D. in the bone joints (A) Answer= A. in the muscle

95. What is another word for calving difficulty? A. Laminitis B. Founder C. Enterotoxemia D. Dystocia (D) Answer= D Dystocia

97. What is the common name for the disease listeriosis which appears in cattle and sheep? A. bloat B. circling disease C. foot rot D. overeating (B) Answer= B. circling disease

100. Which breed of swine has erect ears? A. Tamworth B. Poland China C. Chester White D. Landrace (A) Answer= A. Tamworth

118. Why would we flush ewes? A. to rid them of parasites B. To stimulate estrus and increase ovulation rate C. to increase feed efficiency (B) Answer= B. To stimulate estrus and increase ovulation rate

120. When the term burly is used in livestock judging it means: A. Close at the knees B. Upstanding C. Rugged and masculine D. More feminine Answer= C. Rugged and masculine

129. A trocar and cannula is used to relieve what problem in cattle? A. rickets B. bloat C. founder D. overeating disease (B) Answer= B. Bloat

133. Dystocia in beef cattle is: A. an infectious disease B. a hormone C. a vitamin deficiency D. calving difficulty (D) Answer= D. Calving difficulty

139. What is the term for removing sperm from a bull and putting that sperm into a female when she is in heat? A. artificial insemination B. Pregnancy sharing C. embryo transfer D. Estrous Synchronization (A)

140. Which grows the slowest when fed the same way? A. Bull B. Steer C. Heifer D. They're the same Answer= C. Heifer

143. How can you tell if pigs are littermates? A. Left ear notch B. Right ear notch C. The pigs are all the same color D. The information written on their ear tag Answer= B. Right ear notch

147. A pig grew from 40 pounds to 240 pounds in 100 days and ate 600 pounds of feed. What was his Average Daily Gain (pounds per day)? A. 100 B. 200 C. 6.0 D. 2.0 (D) Answer= D 2.0

172. Which structure is not a part of the reproductive tract of a female? A. Ovary B. Esophagus C. Cervix D. Uterus (B) Answer= B. Esophagus