

# Kansas 4-H Sheep Quiz Bowl Manual

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## ANATOMY SECTION A

1. What are the nitrogen compounds called which make up proteins?  
*A: Amino acids*
2. Which color blood cells play the biggest role in prevention of disease in an animal?  
*A: White Blood Cells*
3. Substances produced from glands with no ducts that act as chemical messengers in the body are known as \_\_\_\_\_.  
*A: Hormones*
4. Blood consists of two major components. These are \_\_\_\_\_ and \_\_\_\_\_.  
*A: Blood cells and plasma*
5. Body cells are made up primarily of \_\_\_\_\_.  
*A: Water*
6. When you study the structure of an animal you study its \_\_\_\_\_.  
*A: Anatomy*
7. The \_\_\_\_\_ is the primary filtering point in an animal's body.  
*A: Liver*
8. Name two parts of the central nervous system.  
*A: Brain and spinal cord*
9. When discussing the nervous system, the letters "CNS" stand for \_\_\_\_\_.  
*A: Central Nervous System*
10. The structures that consist of strong fibrous bands that hold muscle and bone together are called \_\_\_\_\_.  
*A: Tendons*
11. Name the connective tissue that consists of strong fibrous bands that helps connect bone to bone at the joints.  
*A: Ligaments*
12. The area of an animal that is completely encircled by the vertebral column on the top, by the ribs on the sides, and the sternum on the bottom is known as the \_\_\_\_\_.  
*A: Thorax or thoracic cavity*
13. Name two functions of skin.  
*A: Temperature regulation, protection of the internal organs*
14. One function of bones is to act as a \_\_\_\_\_ storage site for the body.  
*A: Mineral*
15. Which tissue has the highest water content?  
*A. Fat*  
*\*B. Lean*  
*C. Bone*

16. Name the four compartments of a ruminant's stomach?  
*A: Rumen, Reticulum, Omasum, Abomasum*
17. In a sheep, what is commonly known as the "hardware compartment" in the digestive system?  
*A: Reticulum*
18. In a sheep, which compartment of the stomach has the greatest volume?  
*A: Rumen*
19. How many compartments are there in a lamb's stomach?  
*A: Four (4)*
20. Name the thin membrane that lines the wall of the abdominal cavity.  
*A: Peritoneum*
21. In a baby lamb, what is the name of the groove that allows milk to flow directly into the abomasum?  
*A: Esophageal groove*
22. Name the blood vessel that drains the stomach and intestines and carries blood to the liver.  
*A: Portal vein*
23. Bones grow in length from a cartilaginous area called the \_\_\_\_\_.  
*A: Epiphyseal plate*
24. Name the vessel that carries blood to the lungs.  
*A: Pulmonary artery*
25. Name three divisions of the small intestine.  
*A: Duodenum, Jejunum, Ileum*
26. Where are the testes located in a cryptorchid ram?  
*A: Abdominal cavity*
27. What is the major function of the scrotum on a ram?  
*A: To regulate the temperature of the gonad or testicle.*
28. Where is the poll located on a sheep?  
*A: On the top of the head*
29. Which portion of a sheep's stomach is most similar to the human stomach?  
*A: Abomasum (True stomach)*
30. Name another term for the reticulum, one of the four compartments of the lamb's stomach?  
*A: Honeycomb or Hardware collector*
31. How many upper incisors does a ewe have?  
*A: None (A ewe has an upper "pad", but no upper incisors)*
32. What anatomical structure in the sheep is comparable to the human knee?  
*A: Stifle joint*
33. What vein in the neck does a veterinarian draw blood from or put in fluids?  
*A: Jugular*

34. The organ that makes urine is called a \_\_\_\_\_.  
*A: Kidney*
35. The organ that receives the blood from the small intestine first is called the \_\_\_\_\_.  
*A: Liver*
36. Name the enzyme and acid secreting portion of the ruminant stomach.  
*A: Abomasum*
37. Name the organ in which the embryo develops.  
*A: Uterus*
38. What is the esophagus?  
*A: The tube from the mouth to the stomach*
39. The honeycomb is another name for the \_\_\_\_\_.  
*A: Reticulum*
40. How many mammary glands does a ewe have?  
*A: 2*
41. When does a ewe lamb usually get her first pair of permanent incisor teeth?  
*A: 12-15 months of age*
42. Where is the stifle?  
*A: The joint nearest the body on the hind leg*
43. The lining of the rumen is made up of what little projections?  
*A: Papillae*
44. Which compartment of the ruminant stomach is known as the fermentation vat?  
*A: Rumen*
45. What is the function of the omasum?  
*A: Water removal*
46. What does the bronchi connect?  
*A: The lungs to the throat*
47. What do we mean by cloven hoof?  
*A: It is split in two parts*
48. Where is a lamb's naval?  
*A: Midline on the belly*

## **BREEDS AND ASSOCIATIONS**

### **SECTION B**

1. What does the abbreviation K.L.A. stand for?  
*A: Kansas Livestock Association*
2. What do the initials U.S.D.A. stand for?  
*A: United States Department of Agriculture*
3. What do the initials F.D.A. stand for?  
*A: Food and Drug Administration*
4. What do the letters A.S.I. stand for?  
*A: American Sheep Industry*
5. What do the letters N.S.I.P. stand for?  
*A: National Sheep Improvement Program*
6. What was the first breed of sheep to originate in the United States?  
*A: Columbia*
7. Name four breeds of sheep that have originated in the United States.  
*A: Columbia, Montadale, Polypay, Targhee, Debouillet, Katahdin, Navajo, Panama*
8. Where did the Corriedale breed originate?  
*A: New Zealand*
9. Name four breeds of sheep that originated in England.  
*A: Dorset, Hampshire, Lincoln, Oxford, Shropshire, Southdown, Suffolk, Border Leicester, Chun Forest, Cotswold, Romney*
10. Where did the Cheviot breed originate?  
*A: Scotland*
11. Where did the Finnsheep breed originate?  
*A: Finland*
12. What breeds were involved in the development of the Columbia breed?  
*A: Lincoln and Rambouillet*
13. What breeds were involved in the development of the Hampshire breed?  
*A: Southdown, Wiltshire Horn and Berkshire Knot*
14. What breeds were involved in the development of the Montadale breed?  
*A: Cheviot and Columbia*
15. What breeds were involved in the development of the Oxford breed?  
*A: Hampshire and Cotswold*
16. What breeds were involved in the development of the Polypay breed?  
*A: Targhee, Dorset, Rambouillet and Finnsheep*

17. What breeds were involved in the development of the Suffolk breed?  
*A: Southdown and Norfolk*
18. What breeds were involved in the development of the Targhee breed?  
*A: Rambouillet, Columbia and Corriedale*
19. This classification of sheep breeds includes generally the white-faced breeds of fine-wool type, the breeds primarily from crosses of fine-wool and long-wool types and highly prolific breeds:  
*A. Ram breeds*  
*B. Dual purpose breeds*  
*\*C. Ewe breeds*
20. This classification of sheep breeds includes meat-type breeds used primarily as terminal sires for market lamb production.  
*\*A. Ram breeds*  
*B. Dual purpose breeds*  
*C. Ewe breeds*
21. Which breed of sheep found in the United States today originated in North Africa?  
*A: Tunis*
22. Which breed of sheep renowned for its fine quality wool production originated in Spain?  
*A: Merino*
23. Give an example of a hair sheep breed found in the United States today.  
*A: Barbados, Katahdin, St. Croix*
24. Name a sheep breed found in the United States that originated in the U.S.S.R.  
*A: Karakul, Romanov*
25. What breed of sheep originated in the Netherlands and was first imported into the United States in the 1980's?  
*A: Texel*

## BREEDING AND GENETICS SECTION C

1. A first generation crossbred lamb is known as a \_\_\_\_\_.  
*A: F1 cross*
2. What is the term used to describe the taking of measurements of economically important traits in the live animal?  
*A: Performance testing*
3. Sheep have how many pairs of chromosomes on each cell?  
*A: 27*
4. Name a term used to describe a genetic combination where both genes are dominant or both genes are recessive.  
*A: Homozygous*
5. Explain what is meant when you have a correlation value of "0" for two selected traits.  
*A: Selecting for one trait will have absolutely no effect on the other selected trait.*
6. Name the process by which body cells divide and every cell from that division is identical.  
*A: Mitosis*
7. If a lamb is heterozygous in its genetic makeup for a specific trait, what is the term used to describe the gene that causes the lamb's phenotype for that trait?  
*A: Dominant gene*
8. Explain why more genetic progress can be made in a herd through selection of the ram versus the ewes.  
*A: A ram will sire multiple progeny each year; whereas, a ewe in a normal breeding program can only give birth to a few lambs each year.*
9. What will the sex of a lamb carrying a combination of the XY sex chromosomes be?  
*A: Male*
10. What is the term used to describe a genotype in which the heterozygous individual is superior to either the homozygous dominant or the homozygous recessive individual?  
*A: Overdominance*
11. Name the biggest disadvantage associated with using progeny performance data for selecting herd sires.  
*A: Length of time needed to gather data results in loss of production time.*
12. What is the term used to describe a trait that is determined by a gene carried on the X sex chromosome.  
*A: Sex linked characteristic or trait*
13. Name the process by which germ cells divide and the resulting cells have only 1/2 the normal number of chromosomes.  
*A: Meiosis*

14. An individual's genotype is determined at \_\_\_\_\_.
- A. Birth
  - B. Slaughter
  - \*C. Conception
15. What is the term used to describe a mating system in which closely related ancestors are mated back to back to each other to increase the concentration of desirable and/or undesirable genes?
- A: *Inbreeding*
16. Does the sire or the dam contribute the Y chromosome to a ram lamb?
- A: *Sire*
17. An abnormality that is present in an individual at the time of birth is termed \_\_\_\_\_.
- A: *Congenital*
18. The structures in the cells that carry the genetic material are \_\_\_\_\_.
- A: *Chromosomes*
19. Fertility will \_\_\_\_\_ in sheep that have been inbred extensively.
- A. Increase
  - B. Stay the same
  - \* C. Decrease
20. If a ram that is heterozygous for spider lamb syndrome is mated to a ewe that is heterozygous for spider lamb syndrome, what proportion of their offspring will be spider lambs?
- A: *25%*
21. Superior performance in a trait be crossbred progeny over and above the average performance of their straight bred parents is termed \_\_\_\_\_.
- A: *Heterosis or hybrid vigor*
22. What is the proper term used to describe genetic changes, such as changes in certain horned breeds that causes their descendants to be polled?
- A: *Mutations*
23. What is the term used to describe a specific trait that can only be seen in either males or females, but not in both sexes of a species?
- A: *Sex linked characteristic*
24. If a person refers to the "top side" of an animal's pedigree, they are referring to which side?
- A: *Paternal*
25. Of the total number of chromosomes found in any lamb's body cell, what proportion are maternal?
- A: *One half*
26. As a ram matures and increases in size he will sire lambs with \_\_\_\_\_ birth weights.
- A. Heavier
  - B. Lighter
  - \*C. The same



27. If a lamb is heterozygous in its genetic makeup for a specific trait, what is the term used for the gene that does not show up in the lamb's phenotype for that trait?  
*A: Recessive gene*
28. What is the term used to describe a genetic combination of one dominant and one recessive gene?  
*A: Heterozygous*
29. What is the term used to describe a specific animal's ancestry or lineage?  
*A: Pedigree*
30. What is the term used to describe a mating system which involves mating unrelated families within the same breed?  
*A: Outbreeding*
31. A characteristic of an animal that can be seen and/or measured such as color, weight, wool length is called \_\_\_\_\_.  
*A: Phenotype*
32. The term used to describe the superiority of parent stock compared to the average of the herd from which they were selected is \_\_\_\_\_.  
*A: Selection differential*
33. What is the term used to describe a mating system where 2, 3 or more breeds are combined?  
*A: Crossbreeding*
34. Which one of the following is a mating system which concentrates the inheritance of one or more outstanding ancestors?  
*A. Outbreeding*  
*\*B. Linebreeding*  
*C. Backcross*  
*D. Crisscross*
35. Which one of the following terms is used to describe the actual genetic makeup of an individual?  
*A. Prototype*  
*B. Karyotype*  
*\*C. Genotype*  
*D. Phenotype*
36. What does E.P.D. stand for in sire evaluation systems?  
*A: Expected Progeny Difference*
37. What does a trait ratio of 112 mean?  
*A: The animal is 12% above the average in that trait*
38. How is percent lamb crop weaned per ewe exposed calculated?  
*A: Lambs weaned divided by the number of ewes exposed to rams multiplied by 100.*
39. What are half-sibs?  
*A: Lambs having the same sire or dam*
40. Define contemporary group  
*A: A group of animals of similar age, sex and management*

41. What two factors determine an animal's performance?  
*A: Genetics and environment*
42. Which of the following would be the most accurate basis for selecting herd sires to increase growth rate?  
*A. Pedigree*  
*B. Visual appraisal*  
*C. Individual performance records*  
*\*D. Progeny performance records*
43. Traits that are \_\_\_\_\_ in heritability normally show the greatest response in crossbreeding.  
*\*A. Low*  
*B. Medium*  
*C. High*
44. What is the paper called that lists the sire and dam of a purebred animal?  
*A: Registration paper*
45. Why is it hard to recognize an animal that is a carrier of a recessive gene?  
*A: There is no difference in appearance of an animal that carries two dominant genes for a trait versus an animal that carries one dominant and one recessive gene for that same trait.*
46. All inherited characteristics are contained in the fertilized \_\_\_\_\_.  
*A: Egg*
47. In general reproductive traits are \_\_\_\_\_ in heritability.  
*A. High*  
*B. Medium*  
*\*C. Low*
48. Reproductive efficiency equals the number of \_\_\_\_\_ per ewe in the breeding flock.  
*A: Lambs weaned*
49. Chromosomes and genes come in \_\_\_\_\_.  
*A: Pairs*
50. Entropion is a \_\_\_\_\_ trait.  
*A: Heritable*
51. Sheep have \_\_\_\_\_ chromosomes.  
*A: 54 or 27 pairs*
52. The heritability estimate for multiple birth is \_\_\_\_\_.  
*\* A. Low*  
*B. Medium*  
*C. High*
53. Name two examples of jaw defects.  
*A: Overshot, undershot, monkey mouth, parrot mouth*

54. Inbreeding usually \_\_\_\_\_ the likelihood that an undesirable recessive trait will show up in the flock.  
A. *Reduces*  
B. *Doesn't change*  
\*C. *Increases*
55. What do the letters F.E.P.D. stand for?  
A: *Flock Expected Progeny Difference*
56. What are a ram's progeny?  
A: *His offspring*
57. What do the letters E.B.V. stand for?  
A: *Estimated breeding value*

## EVALUATION SECTION D

1. A long toe on a lamb's foot accentuates a weakness in what part of the leg?  
*A: Pastern*
2. What term is used to describe an animal that has too much set to the hock joint as viewed from the side?  
*A: Sickle-hocked*
3. The general term used to describe the way a lamb is built is commonly referred to as \_\_\_\_\_.  
*A: Conformation*
4. When a ewe stands with her hocks close together when viewing her from behind, she is said to be \_\_\_\_\_.  
*A: Cowhocked*
5. Name a condition in sheep, when viewed from the front, the hooves turn out in opposite directions from each other.  
*A: Splay footed*
6. What is the term that is used to describe the internal dimension on sheep through the thoracic and abdominal cavity?  
*A: Capacity or volume*
7. When viewing a lamb from the rear, what should you look for to get a good indication of total carcass muscle?  
*A: Thickness and width through the stifle area*
8. When evaluating a lamb, if it has a very square blocky appearance down his topline, it is an indication of \_\_\_\_\_.  
*A: Condition or fat*
9. When evaluating live sheep, what does spring and depth of rib indicate?  
*A: Amount of internal capacity*
10. The area on a lamb's leg between the dewclaw and the hoof that should be set at a 45 degree angle is known as the \_\_\_\_\_.  
*A: Pastern*
11. When viewed from the front, a condition in sheep where the hooves turn in toward each other is known as \_\_\_\_\_.  
*A: Pigeon toed*
12. A lamb with .20 inches of fat thickness is considered to be \_\_\_\_\_.  
*A. Overdone with excess fat thickness*  
*\*B. Relatively trim with high cutability*  
*C. Underdone and in need of a longer feeding period*
13. The horny growths on the legs of sheep located just above the hooves are known as \_\_\_\_\_.  
*A: Dewclaws*

14. Will a lamb normally have more condition over his forerib or rear rib? Why?  
*A: Forerib, because sheep normally fatten through their forequarter first*

## HEALTH SECTION E

1. A bone disease in young animals where there is weak and faulty bone formation because they did not receive enough Vitamin D is known as \_\_\_\_\_.  
*A: Rickets*
2. The blood condition in which the number of red blood cells is decreased below normal because of a deficiency of iron in the diet is called \_\_\_\_\_.  
*A: Anemia*
3. When a ewe eats stunted or frosted grain sorghum it can result in a disease which interferes with the utilization of oxygen by the body tissues. This disease is known as \_\_\_\_\_.  
*A: Prussic Acid Poisoning*
4. Which of the following is a condition in sheep that can occur if an animal happens to ingest some sharp metal object and that object punctures the digestive tract causing peritonitis?  
*A. Vibriosis*  
*\*B. Hardware Disease*  
*C. Rumenitis*  
*D. Brucellosis*
5. A profusion of water feces is known as \_\_\_\_\_.  
*A: Diarrhea or scours*
6. To prevent infections, a newborn lamb should have its navel dipped in what solution?  
*A: Iodine*
7. Arthritis in animals is an inflammation of the \_\_\_\_\_.  
*A: Joints*
8. Eating moldy hay or clover can result in a disease condition known as sweet clover disease in which the major symptoms are \_\_\_\_\_.  
*A: Internal and external hemorrhaging*
9. Club lamb fungus is considered a zoonotic disease. This means that \_\_\_\_\_.  
*A: It is transmitted from animals to people*
10. What disease is caused by an organism commonly found in rivers, lakes, ponds and sewage?  
*A: Leptospirosis*
11. Warts are caused by which of the following:  
*\*A. Virus*  
*B. Bacteria*  
*C. Fungus*  
*D. Genetic makeup of the animal*
12. What happens when a pregnant ewe is infected by leptospirosis?  
*A: She aborts*

13. What is a serious lamb disease caused by a protozoa that is also common in poultry?  
*A: Coccidiosis*
14. Overeating disease is more properly known as \_\_\_\_\_.  
*A: Enterotoxemia*
15. What type of organism causes ringworm?  
*A: Fungus*
16. What is a common name for Tetanus?  
*A: Lockjaw*
17. Name two reasons scours occur in lambs.  
*A: Overeating, bacterial infection, viral infection, parasites*
18. What is the broad name used to describe udder infections in ewes?  
*A: Mastitis*
19. Name a disease that may or may not cause problems in swine, but usually causes death in sheep.  
*A: Pseudorabies*
20. If a veterinarian makes a ewe swallow a magnet, what disease is he attempting to treat?  
*A: Hardware disease*
21. Grass tetany is a sign of what kind of mineral deficiency?  
*A: Magnesium*
22. Name a disease that is also known as Wool Sorter's Disease.  
*A: Anthrax*
23. What kind of injection is IM?  
*A: Intramuscular*
24. What kind of injection is IV?  
*A: Intravenous*
25. Where should IM injections be given?  
*A: In the muscles of the neck or muscles between the ribs*
26. What kind of injection is SQ?  
*A: Subcutaneous or under the skin*
27. Where should SQ injections be given?  
*A: Under the skin in the axillary region, under the skin along the ribs or under the skin in the neck.*
28. The major cause of deaths in newborn lambs is \_\_\_\_\_.  
*A: Starvation*
29. Describe Clip, Drip, Strip and Sip.  
*A: As soon after birth as possible clip the navel of the newborn, dip the navel in 7% iodine, strip the ewe's teats to insure that they are open and make sure the lamb gets a sip of colostrum.*

30. Describe a hypothermic lamb. (Must get 2 of 3)  
*A: Listless, cold to the touch, temperature below 101 degrees F*
31. Toxoplasmosis is caused by a \_\_\_\_\_.  
*A. Bacteria*  
*B. Virus*  
*\*C. Protozoa*  
*D. Fungus*
32. What young animal is often responsible for infecting sheep with Toxoplasmosis?  
*A: Kittens*
33. Why is epididymitis more common in the western states?  
*A: Because of the use of large numbers of rams in a group*
34. What part of the lamb is affected by septicemia?  
*A: The bloodstream*
35. How can septicemia be prevented in baby lambs?  
*A: By disinfecting the navel*
36. What part of an animal is affected by peritonitis?  
*A: Abdominal cavity*
37. How can peritonitis be prevented in baby lambs?  
*A: By disinfecting the navel*
38. At what age are lambs most often affected by E. coli scours?  
*A: 1-3 days*
39. What are the most effective ways in which to treat E. coli scours? (Name 2 of 3)  
*A: Immediate rehydration (Given IV if warranted), keeping the lamb warm, appropriate antibiotic*
40. What is the most effective navel disinfectant?  
*A: 7% Iodine*
41. When should 7% iodine be applied to the navel?  
*A: At birth*
42. What are the protective proteins in colostrum called?  
*A: Antibodies*
43. Why is it important that a lamb receive colostrum during its first 12 hours of life?  
*A: Antibodies will no longer pass through the intestinal tract and into the blood after 12 hours, they will be digested and treated like all other proteins in the animals diet*
44. Why must lambs receive colostrum antibodies?  
*A: Lambs are born immunodeficient, the only way that they can be protected from the viruses and bacteria in their environment is via the absorption of the antibodies in colostrum*
45. Enterotoxemia is caused by what group of organisms?  
*A: Clostridial bacteria*



46. Is there any effective treatment for Clostridial infections?  
*A: Yes, if the infection is noted in its earliest stage and treatment is initiated immediately*
47. Why is treatment of Clostridial infections difficult?  
*A: Because of the rapid progression of the disease*
48. What is the most effective preventative measures recommended to control Enterotoxemia?  
*A: Vaccination of the ewe 30 days prior to lambing. Be sure lambs receive ample colostrum. Booster vaccinate lambs prior to placing on full grain diet.*
49. What are the earliest clinical signs of tetanus?  
*A: Stiffness of the limbs, stilted gait*
50. Which of the following procedures is most likely to happen before a case of tetanus?  
*A. Castration with a knife*  
*\*B. Castration and tail docking with a rubber band*  
*C. Tail docking with a hot iron*
51. Is treatment with successful recovery realistic when dealing with tetanus?  
*A: No*
52. What is the best method to prevent tetanus?  
*A: Vaccination of the ewe 30 days prior to lambing. Be sure lambs receive ample colostrum. Booster vaccinate lambs at 3-4 weeks of age.*
53. What is another name for ORF?  
*A: Soremouth or Ecthyma*
54. Soremouth scabs are infectious, what is the best method of disposing of them?  
*A: Burning or disposal in a container where no animals will come in contact with them. You should wear gloves when working with sheep infected with soremouth and wash thoroughly when done.*
55. What is another name for Chlamydia arthritis?  
*A: Polyarthritis or Stiff Lamb disease*
56. White Muscle disease is caused by a deficiency of \_\_\_\_\_.  
*A: Vitamin E and/or Selenium*
57. What part of the sheep is affected by upper respiratory infections?  
*A: Nasal area*
58. Lower respiratory infections occur in what parts of the sheep?  
*A: Lungs and bronchi*
59. What is the common aftermath of acidosis?  
*A: Death, founder*
60. What do the letters E.A.E. stand for?  
*A: Enzootic Abortion of Ewes*
61. Give a common name for E.A.E.  
*A: Chlamydia*

62. Referring to rams, what does B.S.E. stand for?  
*A: Breeding soundness examination*
63. How are susceptible ewes exposed to Chlamydia?  
*A: They ingest the organism by licking an aborted fetus or eating contaminated feed*
64. What sheep abortion diseases can also cause human infections?  
*A: Chlamydia, Toxoplasmosis, Salmonellosis, Listeriosis*
65. Name three sheep abortion diseases.  
*A: Chlamydia, Toxoplasmosis, Salmonellosis, Listeriosis, Vibriosis, Brucellosis, Leptospirosis*
66. What is the protrusion of the vagina of a ewe called?  
*A: Vaginal prolapse*
67. What problem is caused when ewes have a vaginal prolapse in the late stages of pregnancy?  
*A: When the vagina is prolapsed the cervix is unable to dilate normally, when the vulva is sewn so that the vagina can no longer prolapse the lambs are unable to be delivered without the removal of the sutures*
68. Ketosis or pregnancy toxemia occurs in what term of gestation?  
*A: Last trimester*
69. Hypocalcemia is symptomatic of what blood deficiency in pregnant and lactating ewes?  
*A: Calcium*
70. What feed or mineral supplement should be provided to help prevent the problem of retained placenta?  
*A: Selenium*
71. Name a viral disease in which the first signs observed are an increased body temperature and swollen ears and muzzle.  
*A: Bluetongue*
72. What is a slow progressive disease of the central nervous system which requires necropsy and dissection of the brain to properly diagnose?  
*A: Scrapie*
73. U.S.D.A. has an eradication program for the elimination of \_\_\_\_\_.  
*A: Scrapie*
74. What animals intestinal tract is infected with toxoplasmosis?  
*A: Cats. This makes them a possible carrier of the disease to sheep and humans*
75. The letters O.P.P. stand for \_\_\_\_\_.  
*A: Ovine Progressive Pneumonia*
76. Ovine Progressive Pneumonia is caused by a \_\_\_\_\_.  
*A. Bacteria*  
*B. Protozoa*  
*\*C. Virus*  
*D. Fungus*

77. Footvax is a vaccine developed for help in control of \_\_\_\_\_.  
*A: Contagious Footrot*
78. Routine foot trimming may be used to help control and identify\_\_\_\_\_.  
*A: Footrot*
79. Uterine prolapse describes what condition?  
*A: The expulsion of the uterus through the birth canal to the outside of the body after delivery of the newborn.*
80. Name the vitamin and mineral deficiency that causes white muscle disease.  
*A: Vitamin E, Mineral-Selenium*
81. If you are vaccinating for overeating you will use \_\_\_\_\_.  
*A: Clostridial perfringens type C and D*
82. Name a substance that may be used in a foot bath to help prevent footrot.  
*A: Zinc sulfate, formaldehyde, copper sulfate (last resort)*
83. Name a neurological disease with a long incubation period.  
*A: Scrapie*
84. Name a condition of the abdomen that sometimes develops after an extended case of kidney stones.  
*A: Water belly*
85. Sheep that walk in a circle should be suspected of having what disease?  
*A: Listeriosis, encephalitis, circling disease, rabies*
86. A rigid saw-horse like stance, stiffness and contracted muscles are typical of what common disease?  
*A: Tetanus or lockjaw*
87. \_\_\_\_\_ is a disease characterized by a hard, swollen udder.  
*A: Mastitis*
88. What viral disease of sheep can be contacted by humans?  
*A: Soremouth or ovine ecthyma*
89. Bluebag is another name for what?  
*A: Mastitis*
90. What drug was cleared in 1984 for use in feedlot lambs for the prevention of coccidiosis?  
*A: Lasalocid or Bovatec*
91. What do you call a disease that develops slowly and runs a prolonged course?  
*A: Chronic*
92. What do you call a large protein molecule produced by the immune system as a result of vaccination or disease which protects the animal from that specific disease?  
*A: Antibody*
93. What do you call a disease which affects only a certain portion of the body?  
*A: Localized disease*

94. Enterotoxemia type C usually affects lambs at what stage of their lives?  
*A: Within the first few weeks*
95. A dreaded respiratory disease in which affected animals become depressed, go off feed, may cough, show some respiratory distress, have an accumulation of nasal exudate and have an accompanying high fever is \_\_\_\_\_.  
*A: Pneumonia*
96. What is the normal body temperature of a sheep within 1 degree?  
*A: 102.3*
97. What common nutritional disease resulting from improper calcium and/or phosphorus levels ultimately causes rupturing of the bladder of the urethra?  
*A: Water belly, urinary calculi, urolithiasis, calculosis*
98. The *Brucella ovis* organism is responsible for what venereal disease in rams?  
*A: Epididymitis*
99. When ewes are fed too low an energy level in late gestation, what nutritional disease is likely to develop?  
*A: Ketosis, pregnancy toxemia, twin lamb disease, pregnancy disease, lambing paralysis*
100. During what part of a lamb's life do the globulins in colostrum pass most rapidly across the wall of the gut?  
*A: The first 1-2 hours of life*
101. Metritis is the infection of the \_\_\_\_\_.  
*A: Uterus*
102. If a ewe has mastitis, what type of sample will a veterinarian take to run a culture and sensitivity test on?  
*A: Milk*
103. What is the correct name for a twisted stomach?  
*A: Displaced abomasum*
104. Milk fever is the common name for a condition of hypocalcemia primarily due to the stress of \_\_\_\_\_.  
*A: Lactation*
105. Name two components found in colostrum that makes it good for the lamb.  
*A: Antibodies, energy, protein, vitamins*
106. How do the antibodies in colostrum get into the lamb's bloodstream?  
*A: They are absorbed through the intestinal wall without being digested*
107. Why must a lamb receive colostrum within the first hours of life?  
*A: As the gut matures it cannot absorb the antibodies undigested*
108. What is a balling gun?  
*A: Implement used to give sheep pills*
109. Zinc sulfate is recommended for the treatment of what disease?  
*A: Footrot*

110. What is one rapid method to relieve a bloated animal?  
*A: Stomach tube or ruminal incision*
111. What is a condition in which there is a build up of gases that are unable to escape the rumen, causing an extension on the left side of the sheep?  
*A: Bloat*
112. Aureomycin is \_\_\_\_\_.  
*A: Chlortetracycline*
113. Rickets in lambs is caused by a deficiency in what vitamin?  
*A: Vitamin D*
114. What is entropion?  
*A: Inverted eyelids*
115. What happens in nitrate poisoning?  
*A: Nitrates react, reducing the blood's ability to carry oxygen and the ewe suffers tissue suffocation*
116. What disease often develops when a sheep can't belch?  
*A: Bloat*
117. What is pneumonia?  
*A: Disease of the lungs*
118. What is one way to keep lambs from catching pneumonia?  
*A: Keep them dry and out of drafts*
119. What is terramycin?  
*A: An antibiotic*
120. What is an antibiotic?  
*A: A product that is effective in killing bacteria*
121. What is a vaccine?  
*A: A product that is given to an animal to stimulate the immune system so that the animal is protected from getting the disease.*
122. A disease prevalent in sheep grazing rapidly growing legumes and results in a distended rumen is called \_\_\_\_\_.  
*A: Bloat*

## MANAGEMENT SECTION F

1. What do you call a female sheep?  
*A: Ewe*
2. What do you call an intact male sheep?  
*A: Ram, Buck*
3. What do you call a castrated male sheep? Spell your answer.  
*A: Wether*
4. A sheep that is one year old is known as a \_\_\_\_\_.  
*A: Yearling*
5. The method of fighting among rams is called \_\_\_\_\_.  
*A: Butting*
6. A cryptorchid is a ram with what characteristics?  
*A: Failure of one or both testicles to descend into the scrotum*
7. What are the advantages for shearing lambs. List 3.  
*A: Will stay cooler in the summer, will eat better, faster and easier to prepare for show, perform with better feed efficiency*
8. In months, what is the approximate normal weaning age of lambs in Kansas?  
*A: 2-3*
9. Other than providing a palatable, nutritious creep feed, what can you do to the creep area to entice usage?  
*A: Provide a light or heatlamp, keep area dry and bedded*
10. ADG on a performance report means \_\_\_\_\_.  
*A: Average Daily Gain*
11. Comparing rams and wethers, which will have the higher rate of gain?  
*A: Rams*
12. Name two management practices that may be performed prior to lambing which will give the lamb greater exposure to the udder and teats of a ewe.  
*A: Shearing and crotching*
13. A tool used for docking and castrating that crushes and cuts at the same time is called an \_\_\_\_\_.  
*A: Emasculator*
14. How many lower incisor teeth does a 10-month old lamb have?  
*A: 4 pair (8 teeth)*
15. How many upper incisor teeth does a 10-month old lamb have?  
*A: None, sheep don't have upper incisors*
16. At what age is a ewe likely to be the best milker?  
*A: 4 years*

17. How many permanent teeth does a 2-year old ewe have?  
*A: 2 paid (4 teeth)*
18. What is a gummer ewe?  
*A: A ewe that has lost all its incisor teeth*
19. What are the normal dimensions of a lambing jug ?  
*A: 4 - 5 foot by 4 - 5 foot*
20. What is meant by stanchion grafting a lamb to a ewe?  
*A: Placing the ewe s head and neck in a set of stocks where she can eat and drink, but must allow lambs to nurse. It usually takes 3-5 days for the ewe to accept the lamb*
21. Before what age is it best to dock and castrate a lamb?  
*A: 2 weeks*
22. What is a fairly standard pencil shrink percentage that is deducted from the live weight of lambs hauled a short distance to market?
  - A. 2%*
  - \*B. 4%*
  - C. 6%*
  - D. 8%*
23. Where is the best place for a ewe to lamb?  
*A: Weather permitting in the pasture otherwise in a clean, dry, well bedded jug*
24. Name a tool used for docking and castrating that crushes.  
*A: Burdizzo*
25. What piece of equipment is useful in foot trimming?  
*A: Tilt cradle*
26. Name three methods of identification of sheep.  
*A: Ear tags, ear notching, tattooing, paint branding, electronic microchips*
27. What are two benefits of creep feeding?  
*A: Increased weaning weights, reducing weaning stress, lambs will be bunk broke at weaning*
28. Give three good reasons for culling a ewe.  
*A: Poor performance by her offspring, bad mouth, bad feet, not pregnant, poor udder*
29. What is the process in which the testicles of ram lambs are removed?  
*A: Castration*
30. Loss of weight during shipping is called \_\_\_\_\_.  
*A: Shrink*
31. Will sheep eat more or less than normal on a hot summer day?  
*A: Less*
32. Underfeeding ewe lambs during their first year of life will \_\_\_\_\_ their first breeding.  
*A: Delay*

33. What is the first requirement necessary to carryout a constructive flock improvement program?  
*A: Complete identification of all animals*
34. What is the National Sheep Improvement Program?  
*A: A genetic evaluation system*
35. What do F.E.P.D. s do?  
*A: Predict performance differences of lambs sired by different rams, they do not predict actual performances. They compare sheep born in different years, sheep of different sexes and under different management considerations.*
36. Name two things that F.E.P.D. s do not adjust for.  
*A: Incorrect data, preferential treatment of individual lambs, incorrect pedigrees*
37. Name two things you must know in order to calculate an adjusted 60 day weight for a lamb.  
*A: Dam s age, lamb s age at weighing, lamb s weight at weighing, lamb s status at birth and how it was raised, sex of the lamb*
38. The adjusted weights of all lambs raised by one ewe is \_\_\_\_\_.  
*A: A good indicator of the milking ability of that ewe*
39. What factors are involved in determining a contemporary group for lamb s at weaning?  
*A: Contemporary groups are lambs of the same age and sex, raised under the same management considerations*
40. How do you figure a 60 day adjusted weaning weight for a lamb?  
*A:  $\frac{\text{Actual Weight}}{\text{Actual Age}} \times 60 \times \text{Adjustment Factor}$*
41. Why is there no adjustment factor for a ewe that is 4 yearsold?  
*A: Because the ewe is at the optimum age for milk production or mothering ability so no compensation factor is needed*



## MEATS SECTION G

1. A crown roast of lamb comes from what wholesale cut?  
*A: Rib or rack*
2. Which part of a lamb carcass should make up the largest percent of the lamb?  
*A: Leg*
3. How many calories does a 3 oz. roasted and trimmed serving of lamb contain?  
*A: 176*
4. About how many pounds of live lamb does it take to equal 1 pound of boneless, trimmed retail cuts?  
*A. 1.1*  
*B. 2.2*  
*\*C. 3.3*  
*D. 4.4*
5. External fat thickness of a lamb carcass is measured over the ribeye muscle between which ribs?  
*A: 12<sup>th</sup> and 13<sup>th</sup>*
6. Why do many in the sheep industry want to be paid on the basis of their yield grade?  
*A: Yield grade is one method in which producers can be paid a premium for lean rather than fat*
7. Which of the following lambs is likely to have the highest dressing percentage? A lamb with:  
*A. .1 inch fat*  
*B. .2 inch fat*  
*C. .3 inch fat*  
*\*D. .4 inch fat*
8. A blade chop comes from which wholesale cut on the lamb carcass?  
*A: Shoulder*
9. Traditionally speaking, which of the following has been the least important in establishing the sale price on a group of commercial slaughter lambs?  
*A. Live weight*  
*\*B. Amount of muscle*  
*C. Fat covering*  
*D. Dressing percentage*
10. How many ribs do lambs have?  
*A: 13 or 14 pairs*
11. List the four major primal cuts of lamb.  
*A: Leg, loin, rack, shoulder*
12. What is the approximate per capita consumption of lamb in the United States?  
*A: 1.7 lbs of carcass weight or 1.5 lbs of retail weight*

13. Which of the following is the largest wholesale and retail cut in the lamb carcass?  
A. Loin  
\*B. Leg  
C. Rack  
D. Shoulder
14. What USDA yield grade would imply an extremely trim carcass?  
A. USDA Yield Grade 5  
B. USDA Yield Grade 3  
\*C. USDA Yield Grade 1
15. Which of the following are three major factors used to determine lamb quality grade?  
A. Fat cover, loin eye area, kidney and pelvic fat  
\*B. Conformation, flank streaking, maturity  
C. Flavor, palatability, tenderness
16. Which of the following will have a low dressing percentage?  
A. Lambs that are full  
B. Lightweight, unfinished lambs  
C. Sheep that are carrying heavy fleece  
\*D. All of the above
17. What is the approximate age of a lamb carcass?  
A: 2 to 14 months old
18. What fat measurement is commonly used to help determine the total amount of fat in a carcass?  
A: Fat thickness at the 12<sup>th</sup> rib
19. What are the USDA Yield grades for sheep?  
A: 1, 2, 3, 4, 5
20. Where is the primary fat measurement usually taken on live sheep?  
A: Between the 12<sup>th</sup> and 13<sup>th</sup> rib
21. How is a lamb carcass's yield grade calculated?  
A:  $Yield\ Grade = .4 + (Adjusted\ 12^{th}\ rib\ fat\ thickness \times 10)$
22. Name three factors that influence quality grade.  
A: Age (maturity), conformation (muscling) and fat streaking
23. What is the normal range for dressing percent of choice lambs?  
A: 45% to 58%
24. Which of the following refers to cutability?  
\*A. Proportion of the meat that is actually saleable at the meat counter  
B. Amount of muscling in the leg  
C. How hard the meat is to cut  
D. The amount of kidney and pelvic fat
25. An average ribeye area for a 100 lb. lamb would be \_\_\_\_\_.  
A: 1.5 to 3.2 inches

26. Name two primal cuts of sheep found in the hindquarter.  
*A: Leg and loin*
27. The lamb carcass is ribbed between which ribs to determine ribeye size?  
*A: 12<sup>th</sup> and 13<sup>th</sup> ribs*
28. What are variety meats?  
*A: Edible organs and by-products*
29. What does it mean to exsanguinate a lamb?  
*A: Bleed (Remove all the blood)*
30. What is K.P. fat?  
*A: Kidney and pelvic fat*
31. What does it mean to eviscerate a lamb?  
*A: Remove the entrails (guts)*
32. The grading system used to estimate the percentage of closely trimmed, boneless retail cuts from the four major primal cuts is called \_\_\_\_\_.  
*A: Yield grade*
33. What are the quality grades for lambs?  
*A: Prime, Choice, Good, Utility*
34. Which of the following is not a factor in determining USDA sheep carcass yield grades?  
*A. Conformation grade of the legs*  
*\*B. Ribeye area*  
*C. Percent kidney and pelvic fat*  
*D. None of the above*  
*E. All of the above*
35. Which of the following is not a factor in determining USDA sheep carcass quality grades?  
*A. Conformation*  
*B. Maturity*  
*\*C. Carcass weight*  
*D. Flank fat streaking*
36. Name two factors that influence dressing percentage.  
*A: The mount of fill, degree of finish (fatness), weight of the pelt, muscling*
37. Tripe comes from what internal sheep organ?  
*A: Stomach*
38. How many USDA yield grades are there?  
*A: 5*
39. Name the five USDA yield grades in order from the fattest to leanest?  
*A: USDA 5, USDA 4, USDA 3, USDA 2, USDA 1*
40. Name three of the four USDA quality grades of sheep.  
*A: Prime, Choice, Good, Utility*

41. What is the average desirable market weight for slaughter lambs in the United States?  
*A: 120 - 140 lbs*
42. Name the greatest factor in determining the cutability of a lamb.  
*A: The amount of condition or fat it possesses*
43. Name three methods most used for long term meat preservation.  
*A: Freezing, curing, canning*
44. What must happen to meat before it can be USDA graded?  
*A: It must first pass inspection*
45. What is the purpose of meat inspection?  
*A: Eliminate diseased or contaminated meat from the consumer market*
46. What is the term used to describe the proportion of carcass on the rail after slaughter in relation to the live weight?  
*A: Dressing percent*
47. What is the term that refers to the fatness of a lamb?  
*A: Condition or finish*
48. Sheep should be held off of feed for at least how many hours prior to slaughter?  
*A: 20 to 25 hours*

## NUTRITION SECTION H

1. What are 2 feed ingredients that can aid in the prevention of urinary calculi?  
*A: Addition of limestone, ammonium chloride or salt to the ration*
2. What mineral is toxic to sheep at doses appropriate for cattle?  
*A: Copper*
3. Selenium and Vitamin E deficiencies can cause what disease?  
*A: White muscle, stiff lamb*
4. What kind of poisoning is associated with the feeding of forage sorghums, corn stalks, oat hay and other cultivated fertilized forages?  
*A: Nitrate, NO<sub>3</sub>*
5. Name the four stomach compartments of a sheep.  
*A: Abomasum, Omasum, Rumen, Reticulum*
6. Name three types of protein supplements  
*A: Soybean meal, Cottonseed meal, Sunflower meal, Linseed meal, Peanut meal, Fish meal*
7. What do the letters T.D.N. stand for?  
*A: Total digestible nutrients*
8. What is the first milk from the ewe called?  
*A: Colostrum*
9. In which form do mature feeder lambs least prefer to consume corn?  
*\*A. Finely ground*  
*B. Cracked*  
*C. Whole*
10. The process in which regurgitation, resalivation and reswallowing occurs is called \_\_\_\_\_.  
*A: Rumination*
11. On which of the following diets will a 90 pound feeder lamb probably gain at the slowest rate in a typical Kansas July?  
*A. 60% corn*  
*B. 60% wheat*  
*\*C. 60% oats*  
*D. 60% barley*
12. What does it mean to creep feed lambs?  
*A: Provide palatable feed for lambs where the ewes don't have access to it*
13. Grains are usually deficient in what mineral needed for growth and development?  
*A: Calcium*
14. Name 3 of the 4 fat soluble vitamins that mature sheep are known to require.  
*A: A, D, E, and K*

15. Name the stomach compartment where fermentation takes place.  
*A: Rumen*
16. What class of drugs is commonly used in starter rations?  
*A: Antibiotics*
17. Briefly explain the difference between the nutritional needs of young versus mature animals.  
*A: Young animals need additional nutrients for growth, while mature animals just need enough nutrients to maintain body tissues already present*
18. If a 2 month old lamb receives a ration containing nutrients over and above his maintenance requirements, the excess nutrients will then go toward \_\_\_\_\_.  
*A: Growth*
19. Feed efficiency in feedlot lambs is described as pounds of \_\_\_\_\_ per pound of \_\_\_\_\_.  
*A: Feed, gain*
20. Balancing ration that contains all necessary nutrients at the proper requirement levels, at minimum cost to the shepherd is known as \_\_\_\_\_.  
*A: Least-cost ration formulation*
21. Nutrient requirements for the pregnant ewe are highest during which trimester?  
*A: Last*
22. Name 3 high energy concentrates.  
*A: Corn, milo, barley, oats, wheat*
23. Grains are higher in which mineral when compared to forages?  
*A: Phosphorus*
24. Name the primary avenue of water intake, and the primary avenue of water loss in the normal animal.  
*A: Drinking water and urinary loss*
25. The breaking down of feedstuffs by the body is known as \_\_\_\_\_.  
*A: Digestion*
26. What term describes the amount of feed a sheep will clean up each day?  
*A: Full feed or ad-libitum*
27. Feeds that are high in fiber content and low in energy content are referred to as \_\_\_\_\_.  
*A: Roughages*
28. Corn is a poor source of what mineral?  
*A: Calcium*
29. What mineral contains sodium and chlorine and is generally fed free choice to sheep?  
*A: Salt*
30. What abundantly available feed grain typically has the highest energy value?  
*A: Corn*

31. What nitrogen-containing compound can be fed to a sheep to meet up to 30% of its protein requirement, but can be toxic at higher levels?  
*A: Urea*
32. What legume hay generally has the highest feeding value for sheep?  
*A: Alfalfa*
33. What is the function of the rumen microbial population?  
*A: Digest fiber, utilize non-protein nitrogen (NPN)*
34. What is one of the best choice of products given orally to supply the necessary energy to a pregnant ewe with signs of pregnancy toxemia?  
*A: Propylene glycol*
35. What percent of their body weight will a lamb typically consume in dry feed each day?  
*A: 3-5%*
36. What mineral is found in abundance in bone meal and limestone?  
*A: Calcium*
37. As a ruminant the sheep bases its diet on what class of feedstuffs?  
*A: Roughages*
38. Name a common feed grain that is high in fiber and used for sheep?  
*A: Oats*
39. Corn is a good source of \_\_\_\_\_.  
*A: Energy*
40. What is the name of the largest of the four compartments of a sheep's stomach?  
*A: Rumen*
41. Name three of the nutrients required for sheep to maintain their bodies and grow.  
*A: Protein, energy, vitamins, minerals, water*
42. The most limiting nutrient in ewe nutrition is \_\_\_\_\_.  
*A: Energy*
43. At what stage in the ewe's production cycle is protein the most critical?  
*A. Open*  
*B. Early gestation*  
*C. Late gestation*  
*\*D. Lactation*
44. If a ewe is underfed protein during lactation, what is the likely negative result?  
*A: She will be a poor milker*
45. Increased salt intake requires an increase in the consumption of \_\_\_\_\_.  
*A: Water*
46. What are two minerals closely interrelated, particularly in the development and maintenance of normal bone structure?  
*A: Calcium and Phosphorus*

47. The levels of which class of nutrients in feeds is largely determined by the level in the soil on which the feeds are grown?  
*A: Trace minerals*
48. Under normal nutritional conditions, when is the ewe likely to weigh the least?  
*A: Weaning time*
49. Excess fatness of replacement ewe lambs between birth and first lambing should be avoided for what major reason?  
*A: Her future milk production is reduced*
50. On a ewe condition scoring system of 0-5, the desired condition score range to maintain the ewe year round is:  
*A. 1 ½ to 2 ½*  
*\*B. 2 ½ to 3 ½*  
*C. 3 ½ to 4 ½*  
*D. 4 ½ to 5*
51. A good quality commercially prepared lamb milk replacer will contain \_\_\_\_\_% fat and \_\_\_\_\_% protein.  
*A: 25-30, 20-25*
52. Give one reason why it is recommended to feed orphan lambs cold rather than warm milk replacer.  
*A: Cold doesn't sour as quickly, lambs consume a smaller amount of cold milk replacer each time they nurse, but they nurse more often*
53. The trade name for the product lasalocid, an ionophore which is FDA approved for sheep is \_\_\_\_\_.  
*A: Bovatec*
54. What do the letters T.D.N. stand for?  
*A: Total Digestible Nutrients*
55. What do the letters A.D.G. stand for?  
*A: Average Daily Gain*
56. What is the name for the rhythmic muscular contractions which occur in the rumen?  
*A: Peristalsis*
57. What is the greatest importance of salt in a livestock ration?  
*A: Stimulates appetite*
58. What are two factors that influence nutrient requirements of an animal?  
*A: Sex, weight, level of production, nutrient intake, environment*
59. What is feed efficiency?  
*A: The amount of feed it takes for an animal to produce a pound of gain*
60. When lambs are maintained on a high concentrate diet, what mineral is more likely deficient?  
*A: Calcium*
61. The raw source of Vitamin A found in a feedstuff is called \_\_\_\_\_.  
*A: Carotene*



62. Where do sheep store Vitamin A during times of abundant intake?  
*A: Liver and body fat*
63. Rank the five nutrient groups from the one with the highest amount needed in the diet to the one with the lowest amount needed in the diet.  
*A: Water, energy, protein, minerals, vitamins*
64. What is the function of the esophageal groove in a lamb?  
*A: Allows milk to bypass the rumen and reticulum for digestion in the abomasum*
65. Which of the following minerals has been called the master mineral because it is involved in practically all of the metabolic processes in the body?  
*A. Sodium*  
*B. Iron*  
*\*C. Phosphorus*  
*D. Potassium*
66. Define ration.  
*A: Feed given to an animal over a 24 hour period*
67. What mineral is likely to be deficient when sheep are maintained on a high roughage diet?  
*A: Phosphorus*
68. 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*
69. Minerals, especially trace minerals such as selenium, are \_\_\_\_\_ at high levels of intake.  
*A: Toxic*
70. Corn silage, pasture and hay are examples of what type of feed?  
*A: Roughages*
71. Iron, phosphorus, calcium and magnesium are examples of which of the following types of nutrients?  
*A. Protein*  
*\*B. Minerals*  
*C. Vitamins*  
*D. Energy*
72. What are two ways that sheep usually receive adequate quantities of Vitamin D?  
*A: By synthesizing it in their own bodies during exposure to direct sunlight or from sun cured hay*
73. When corn is overfed to lambs not used to concentrates, what is a common result?  
*A: Acidosis, founder*
74. What type of sheep feed is most commonly high in Vitamin A?  
*A: Green, leafy legume forage*

75. What enables sheep to eat and digest the cellulose in hay?  
*A: Bacteria and other microbes in the rumen*
76. What do the letters N.P.N. stand for?  
*A: Non-protein nitrogen*
77. Into what structure does the food pass when it leaves the stomach?  
*A: Small intestine*
78. What is the most practical method you can use to measure a lamb's performance during the feeding period?  
*A: Weighing him periodically*
79. Which basic nutrient is found in the largest quantity in an animal's body?  
*A: Water*
80. What is the primary purpose of chewing food?  
*A: Break feedstuffs into smaller particles, allowing better contact with the digestive enzymes*
81. The specialized system in which food is broken down is called the \_\_\_\_\_.  
*A: Digestive tract*
82. Flushing can help increase \_\_\_\_\_ efficiency in a sheep flock.  
*A: Reproductive*
83. As ruminant animals, sheep utilize many plant materials which would otherwise be \_\_\_\_\_ to humans.  
*A: Inedible*
84. TDN is an indication of the \_\_\_\_\_ of a feed.  
*A: Energy value*
85. Sheep are ruminant animals while pigs are monogastric animals. Briefly explain the difference.  
*A: Ruminants have complex, 4 compartment stomachs while monogastrics have simple, 1 compartment stomachs*
86. Sunshine and sun-cured hay are good sources for Vitamin \_\_\_\_\_.  
*A: Vitamin D*
87. Which nutrient serves as the body's built-in cooling system?  
*A: Water*
88. Which nutrient serves as the body's built-in heating system?  
*A: Energy*
89. What do the letters I.U. stand for when applied to vitamins?  
*A: International Units*
90. How much more energy does it take for a lamb to gain a pound of fat than a pound of lean muscle tissue?  
*A: 2.25 more energy needed for fat tissue gain*
91. When added to sheep rations, what is the primary function of molasses?  
*A: To increase or improve palatability*

92. What is a common digestive upset that can occur in sheep if you feed them straight alfalfa hay?  
*A: Bloat*
93. What is the function of the esophagus?  
*A: Carries or provides a passageway for food from the mouth to the stomach*
94. Ruminants have the ability to synthesize the \_\_\_\_\_ vitamins in the rumen.  
*A: B-complex*
95. The science of all processes which take place when feed is given to animals is called \_\_\_\_\_.  
*A: Animal nutrition*
96. Skin, hair, hooves and horns are made up primarily of what basic nutrient?  
*A: Protein*
97. The colon is also known as the \_\_\_\_\_.  
*A: Large intestine*
98. Before formulating a ration you must know \_\_\_\_\_ and \_\_\_\_\_.  
*A: What feedstuffs you have available, the animal's nutrient requirements*
99. Explain briefly how rumen bacteria and the ruminant animal can benefit each other in their life cycles.  
*A: Ruminants provide a home or good environment for bacteria to grow and develop whereas bacteria help ruminants digest fibrous feedstuff and synthesize some nutrients for the animal's use*
100. When sheep overeat a concentrate source, or go off feed then overeat when re-exposed to the feed source, a condition can result where there is an upset in the rumen pH. This is known as \_\_\_\_\_.  
*A: Lactic acidosis*
101. Cleaning out the feed bunk at least once a day will \_\_\_\_\_.  
*A: Encourage greater feed intake*
102. What is tocopherol?  
*A. Vitamin A*  
*B. Vitamin B*  
*C. Vitamin C*  
*\*D. Vitamin E*
103. What is ascorbic acid?  
*A. Vitamin A*  
*B. Vitamin B*  
*\*C. Vitamin C*  
*D. Vitamin D*
104. Why is salt iodized?  
*A: To supply iodine which helps control goiter, a condition of the thyroid.*

105. Why is it important to change a sheep's ration slowly?  
*A: To give the rumen bacteria time to adapt to a new feed*
106. Molasses is a good source of \_\_\_\_\_ and is used in many feeds to increase palatability.  
*A: Energy*
107. The energy remaining after digestive losses, gas losses, urinary losses and the work of digestion are deducted is called which of the following?  
*\*A. Gross energy  
B. Net energy  
C. Metabolizable energy*
108. Of the five basic nutrient groups, which is the cheapest in almost all cases?  
*A: Water*
109. Are bacteria or protozoa usually present in the rumen in greater numbers?  
*A: Bacteria*
110. Why is it important that the newborn lamb receive colostrum milk?  
*A: To provide antibodies for immunity from disease. To provide Vitamin A.*
111. What happens when milk first gets into the abomasum?  
*A: It coagulates, glabbers, or clots like cottage cheese*
112. What kind of gas is produced in the rumen?  
*A: Methane, carbon dioxide*
113. The organ which secretes digestive enzymes into the small intestine is called the \_\_\_\_\_.  
*A: Pancreas*
114. How can you tell when the rumen is contracting?  
*A: Watch the flank, in front of the left hook, listen at the left flank*
115. When a lamb nurses, into which compartment of the stomach does the milk enter?  
*A: Abomasum*
116. Define a balanced ration.  
*A: A ration which furnished all the nutrients in the proper amount and proportion to properly nourish an animal for 24 hours*
117. Which intestine comes first?  
*A: Small intestine*
118. When a ewe belches, where does the gas go?  
*A: 80% goes into the lungs to be exhaled, 2% goes out the mouth directly*
119. What is a cud?  
*A: The feed the ewe has brought up from the rumen and is re-chewing*
120. Where does the lamb get the organisms that live in its stomach?  
*A: From touching the mouths of other sheep*

121. What does urea substitute for in the diet?  
*A: Protein*
122. The first milk from a ewe following parturition is called \_\_\_\_\_.  
*A: Colostrum*
123. What nutrient if left out of the diet will cause death first?  
*A: Water*
124. What is ruminating?  
*A: Chewing the cud*
125. Which is fermented in the rumen first, hay or corn?  
*A: Corn*
126. What is the primary reason for considering urea as a nitrogen source in ruminant rations?  
*A: Cost*
127. Roughages are \_\_\_\_\_ in fiber and \_\_\_\_\_ in energy compared to concentrates.  
*A: Higher, lower*
128. List 4 macro minerals required by sheep.  
*A: Calcium, phosphorus, magnesium, chloride, potassium, sulfur, sodium*
129. List 4 micro minerals required by sheep.  
*A: Iron, manganese, zinc, cobalt, iodine, selenium, molybdenum*
130. List 2 specific functions of rumen microorganisms.  
*A: Convert cellulose materials into digestible products; synthesis of B vitamins; synthesis of vitamin K; convert NPN to bacterial protein; produce unidentified factors essential for growth, fattening and reproduction*
131. Is a newborn lamb a functioning ruminant?  
*A: No*
132. Why can a sheep utilize urea and other non-protein nitrogen compounds as a protein source?  
*A: Because the rumen microorganisms convert NPN into microbial protein which is then used by the sheep*
133. Name 3 functions of water in the body.  
*A: A medium to transport nutrient, to carry waste products to the point of excretion, to cool the body at high environmental temperature, functions as a universal solvent, serves as a fluid which lubricates joints, serves as a fluid base for milk, substrate for metabolic reactions*
134. When a ewe reswallows her cud where does it go?  
*A: Rumen*
135. What is the primary advantage of a ruminant over a simple stomach animal with respect to diet?  
*A: Ruminants can obtain much of their nutrients directly from roughages not directly convertible into food for human use, thereby not competing with man for food supplies*
136. What good is protein in the diet?  
*A: It is used to build muscle or milk protein*

137. What term is applied to the total energy contained in a feedstuff?  
*A: Gross energy*
138. What lives in the rumen that digests food?  
*A: Bacteria and Protozoa*
139. In feeding sheep, the nutrient requirements are outlined in a N.R.C. publication. What do the initials N.R.C. stand for?  
*A: National Research Council*
140. What does protein solubility refer to?  
*A: The ability of protein in a feed to dissolve in a liquid*
141. Which is more digestible, very mature hay or corn?  
*A: Corn*
142. Name a major volatile fatty acid produced in the rumen.  
*A: Acetic, propionic, butyric*
143. The primary digestive activity that occurs in a sheep rumen is  
*A. Water absorption*  
*B. Mineral absorption*  
*\*C. Feedstuff fermentation*  
*D. Absorption of nutrients*

## PARASITES SECTION I

1. Live flukes affect the \_\_\_\_\_ of the liver.  
*A: Bile ducts*
2. Which internal parasite that also infects dogs can be grown to lengths of three feet in sheep?  
*A: Tapeworm*
3. What is bottle jaw in sheep an indication of?  
*A: Severe internal parasite infestation*
4. Internal parasites are more likely to be a problem under \_\_\_\_\_ weather conditions.  
*A. Dry*  
*\*B. Wet*  
*C. Doesn't matter*
5. The barber-pole worm feeds on the lining of which stomach compartment?  
*A: Abomasum or true stomach*
6. Which internal parasite infestation is most commonly associated with scouring in lambs under stress?  
*A: Coccidiosis*
7. What is a disease of lambs characterized by dark diarrhea?  
*A: Coccidiosis*
8. Name a disease caused by a mite that has now been eradicated in this country.  
*A: Psoroptic mange, scabies, sheep scab*
9. What is another name for the stomach worm *Haemonchus contortus*?  
*A: Barber pole worm*
10. Feed or hay that is contaminated with cat feces may cause what disease that can result in abortion?  
*A: Toxoplasmosis*
11. A sheep ked may also be referred to as a what?  
*A: Tick*
12. What is an anthelmintic ?  
*A: A compound for deworming*
13. Give an example of an obligatory parasite.  
*A: Screwworm, maggot*
14. Stomach worms can cause which of the following symptoms?  
*A. Anemia*  
*B. Diarrhea*  
*C. Rough hair coat*  
*D. Slow rate of gain*  
*E. None of these*  
*\*F. All of these*

15. What is the best prevention for flies?  
*A: Sanitation*
16. Name three methods for giving wormers.  
*A: Bolus, drench, feed additive, paste, gel, injection, drinking water, mineral (block or salt)*
17. What is a maggot?  
*A: Immature or larval stage of a fly*
18. Face flies and horn flies develop as maggots in which of the following compounds?  
*\*A. Freshly deposited sheep manure*  
*B. Rotting grass clippings*  
*C. Rotting or fermenting hay*



## PHYSIOLOGY AND ENDOCRINOLOGY SECTION J

1. Name the master gland controlling the estrous cycle.  
*A: Pituitary*
2. Which ovarian hormone appears to be involved in the development of the duct system of the mammary gland?  
*A: Estrogen*
3. Frightening a ewe will cause the release of what hormone?  
*A: Adrenalin, norepinephrine*
4. The hormone responsible for interfering with milk ejection is \_\_\_\_\_.  
*A: Adrenalin, norepinephrine*
5. Which hormone is the one responsible for the ejection of milk?  
*A: Oxytocin*
6. Name two hormones produced by the ovary.  
*A: Estrogen, Progesterone*
7. What is the male hormone called?  
*A: Testosterone*
8. What is the term used to describe the taking of oxygen from the atmosphere, and then the release of carbon dioxide back into the atmosphere by an animal?  
*A: Respiration*
9. What role does the hormone vasopressin (ADH) have?  
*A: Water reabsorption from the kidney back into the body*
10. Blood consists primarily of \_\_\_\_\_.  
*A: Water*
11. Insulin is produced by the \_\_\_\_\_.  
*A: Pancreas*
12. The nitrogenous waste product that is secreted by the kidney is called \_\_\_\_\_.  
*A: Urea*
13. The pH of the abomasum of a ruminant is very \_\_\_\_\_.  
*\*A. Acidic*  
*B. Alkaline*
14. Hormones are carried in the \_\_\_\_\_ of an animal.  
*A: Bloodstream*
15. Oxytocin is a hormone secreted from which endocrine gland?  
*A: Posterior pituitary*
16. Estrogen is secreted from which endocrine gland?  
*A: Ovary*

17. Another name for growth hormone is \_\_\_\_\_.  
*A: Somatotropin*
18. The hormone that moves calcium into bone is called \_\_\_\_\_.  
*A: Calcitonin*
19. Name the chemical messenger that causes a slightly higher body temperature?  
*A: Adrenalin, norepinephrine*
20. What time of day will an animal have a slightly higher body temperature?  
*A: Late afternoon*
21. When an animal becomes agitated or scared, a hormone known as \_\_\_\_\_ is released causing increased heart rate, respiration and blood pressure.  
*A: Adrenalin, norepinephrine*
22. The movement of water across cell membranes to a high concentration of salt, in order to dilute that concentration is called \_\_\_\_\_.  
*A: Osmosis*
23. What are pheromones?  
*A: Chemical messengers that aid in communication between animals*
24. Glucose levels are lower in sheep than in non-ruminants. What do they use for energy?  
*A: Volatile fatty acids (VFA s)*
25. What endocrine gland in the body actually works to control the pituitary gland by sending out specific releasing hormones?  
*A: Hypothalamus*
26. The study of the hormonal system is known as \_\_\_\_\_.  
*A: Endocrinology*
27. White blood cells are important for \_\_\_\_\_.  
*A: Protection against disease*
28. \_\_\_\_\_ is produced by the thyroid gland and works to increase body metabolism.  
*A: Thyroxin*
29. In general, the smaller an animal the \_\_\_\_\_ its metabolic rate and the \_\_\_\_\_ its heart rate.  
*A: Higher, faster*
30. Blood carries \_\_\_\_\_ from the lungs to the body tissues and \_\_\_\_\_ from the body tissues to the lungs.  
*A: Oxygen, carbon dioxide*
31. The blood in the arteries has a \_\_\_\_\_ oxygen content than that in the veins.  
*A: Higher*
32. Skin plays an active role in converting sunlight to Vitamin \_\_\_\_\_.  
*A: Vitamin D*

33. The \_\_\_\_\_ primary responsibility is to help the body handle short and long term stress.  
*A: Adrenal glands*
34. Younger animals normally have a \_\_\_\_\_ pulse than older animals.  
*A: Faster*
35. Increased heart rate in an animal will result in \_\_\_\_\_ blood pressure.  
*A: Increased*
36. The small intestine has a more \_\_\_\_\_ pH than does the abomasum of a ruminant.  
*A: Alkaline*
37. As blood leaves the heart to go to the rest of the body, that blood will pass through the \_\_\_\_\_ system first.  
*A: Arterial*
38. When both testicles fail to descent into the scrotum and remain in the body cavity, the male animal is:  
*A. Fertile and shows normal sexual activity*  
*\*B. Infertile and shows normal sexual activity*  
*C. Fertile and does not show normal sexual activity*  
*D. Infertile and does not show normal sexual activity*

## REPRODUCTION SECTION K

1. Cryptorchidism describes what condition?  
*A: A male lamb that is born with one or both testicles still in the abdominal cavity.*
2. What is meant by the term flushing the ewe?  
*A: Increasing the plane of nutrition prior to breeding*
3. What is the name of a procedure which is used to determine ram s sexual aggressiveness?  
*A: Serving capacity test*
4. What is the name of the lip-curling reflex exhibited by rams when they smell a ewe in heat?  
*A: Flehming reflex*
5. In sheep, estrus lasts how long?  
*A: 24 to 36 hours*
6. How many days are there between heat or estrous cycles?  
*A: 16 to 17 days*
7. What is the average length of gestation in sheep?  
*A: 148 days (144 to 150)*
8. What is a ewe doing when she is lactating?  
*A: Producing milk*
9. Approximately 70% of fetal growth occurs during what period of gestation?  
*A: The last 4 weeks*
10. Ewes with twin lambs produce \_\_\_\_\_ more milk than those sucking singles.  
*A: 20 to 40%*
11. What do the letters A.I. stand for?  
*A: Artificial Insemination*
12. What do the letters P.M.S. stand for?  
*A: Pregnant mare serum*
13. What is the function of the sheep s epididymis?  
*A: Storage and maturation of sperm*
14. Prior to the normal birth of a lamb, the \_\_\_\_\_ must be fully dilated.  
*A: Cervix*
15. The unborn lamb is linked to the placenta by the \_\_\_\_\_.  
*A: Umbilical cord, naval*
16. Does the ram or the ewe determine how many lambs the ewe will have?  
*A: Ewe*
17. What is the normal presentation of the fetal lamb for delivery?  
*A: Head between front legs (Diving position)*

18. What is a commercially available prostaglandin used to synchronize ewes?  
*A: Lutalyse*
19. A naturally occurring compound used to superovulate donor ewes for embryo transfer is \_\_\_\_\_.  
*A: F.S.H. (Follicle stimulating hormone), P.M.S. (Pregnant mare serum)*
20. Dystocia is another word for \_\_\_\_\_.  
*A: Lambing difficulty*
21. Name the reproductive organ in the ram that produces sperm cells.  
*A: Testes*
22. What structure forms on the ewes ovary that contains the egg?  
*A: Follicle*
23. What term is used to describe the length of time from breeding to lambing?  
*A: Gestation*
24. In delivering a lamb that is presenting breech, why should one deliver the lamb quickly after the legs are out?  
*A: Because the lamb will take its first breath as soon as the umbilical cord breaks and the head may still be in fluid.*
25. What is a lamb called during its developmental stay in the uterus?  
*A: Fetus*
26. What is the sac-like tissue that contains the fetus during its development?  
*A: Placenta*
27. What is happening to day length during the time that ewes are generally more reproductively active?  
*A: Day length is increasing*
28. Name two breeds of sheep that are most often considered to be highly prolific.  
*A: Finnsheep, Booroola Merino, Romanov, Polypay*
29. What is accelerated lambing?  
*A: Lambing more often than once every 12 months*
30. How often does the ideal ewe on the Star system lamb in three years?  
*A: Five times*
31. Failure of the cervix to dilate may be caused by a condition called \_\_\_\_\_.  
*A: Ringwomb*
32. In the sperm cell, the genetic information is contained in which of the following locations?  
*A. Acrosome or cap*  
*\*B. Head*  
*C. Tail*
33. When ewes are in standing heat what are they doing?  
*A: Standing and letting other ewes or the ram ride her*

34. You breed a ewe during her \_\_\_\_\_ period.  
*A: Estrus*
35. What do the letters E.T. stand for?  
*A: Embryo transfer*
36. Estrous synchronization with prostaglandin works only on \_\_\_\_\_ ewes.  
*A: Cycling*
37. Which hormone is responsible for male behavior and sex drive?  
*A: Testosterone*
38. What is estrus synchronization?  
*A: Causing females to express estrus at a predictable time, usually within a period of 1-4 days*
39. What hormone is responsible for follicle development on the ovary?  
*A: F.S.H. (Follicle stimulating hormone)*
40. Name three signs of estrus.  
*A: Standing while being mounted, roughed up wool over tailhead, mud on rumps or hip, swollen wet vulva, restlessness, bleating, fence walking*
41. What is the primary function of the uterus?  
*A: Provides protection and housing for the fertilized egg to develop into a fetus, acts as womb*
42. What is the largest of the female reproductive organs?  
*A: Uterus*
43. The common name for the expelled placenta following parturition is \_\_\_\_\_.  
*A: Afterbirth*
44. What are the primary sex organs of the male and female?  
*A: Male - testes; female - ovaries*
45. What specific structure within the testicles is responsible for the production of sperm?  
*A: Seminiferous tubules*
46. The testicles produce both \_\_\_\_\_ and \_\_\_\_\_.  
*A: Spermatozoa, testosterone*
47. What is the practice called that enables an entire flock of females to come into heat within a 1-4 day period?  
*A: Estrus synchronization*
48. What is the function of the hormone relaxin during parturition?  
*A: To widen the birth canal*
49. Odors that signal sexual readiness are caused by chemical messengers known as \_\_\_\_\_.  
*A: Pheromones*
50. A ram that is able to detect heat but is incapable of settling ewes is called a \_\_\_\_\_.  
*A: Gomer, teaser*

51. The vulva is the external opening to what part of the reproductive tract?  
*A: Vulva*
52. What structure forms on the ovary and produces progesterone in early pregnancy?  
*A: Corpus luteum*
53. What term is used to describe the sexual behavior or sex drive in rams?  
*A: Libido*
54. The lamb is approximately \_\_\_\_\_ percent water at birth.  
*A: 70*
55. What enzyme in a lamb's stomach causes milk to form into curds?  
*A: Rennin*
56. What is the endometrium?  
*A: Layer of the uterus adjacent to the lumen*
57. What structure of the ram has the function of regulating the temperature of the gonad or testicles?  
*A: Scrotum*
58. What is the benefit of ultrasonic pregnancy checking in the ewe?  
*A: By identifying the number of embryos the ewes can be fed according to number of lambs they will have. This will help to prevent the incidence of pregnancy toxemia in ewes carrying multiple lambs.*
59. What is the natural barrier in a ewe's reproductive tract through which an artificial insemination rod must be passed before semen is properly deposited?  
*A: Cervix*
60. Sexual receptivity in the female is primarily dependent on high levels of \_\_\_\_\_.  
*A: Estrogen*
61. Fertilization normally takes place in the \_\_\_\_\_.  
*A: Oviduct*
62. Prostaglandin is produced by the \_\_\_\_\_.  
*A: Uterus*
63. The process involving formation of the male gamete is called \_\_\_\_\_.  
*A: Spermatogenesis*
64. The term describing the release of an egg from the ovary is \_\_\_\_\_.  
*A: Ovulation*
65. The membranes which enclose the fetus in a fluid filled sac are called the \_\_\_\_\_.  
*A: Placenta*
66. What is a breech birth?  
*A: When a lamb is presented tail first*
67. What hormone is known as the hormone of pregnancy ?  
*A: Progesterone*

68. What does gestation mean?  
*A: Period of carrying a lamb, duration of pregnancy*
69. What is the thin membranous structure at the end of the oviduct which partially covers the ovary?  
*A: Fimbria, infundibulum, funnel*
70. Prostaglandin can be used as an estrus synchronization agent by performing what action on the ovary?  
*A: Causes regression of the corpus luteum (CL)*
71. The term to describe a difficult lambing is \_\_\_\_\_.  
*A: Dystocia*
72. During natural mating between a ewe and a ram, semen is deposited in the \_\_\_\_\_.  
*A: Vagina*
73. The scientific term for the birth process is \_\_\_\_\_.  
*A: Parturition*
74. What is the sac-like pouch called that is suspended from the ram and houses the testicles?  
*A: Scrotum*
75. The oviduct carries the egg to what part of the ewe's reproductive tract?  
*A: Uterus*
76. The male gonad is the \_\_\_\_\_.  
*A: Testicle*
77. The female sex cell is called the \_\_\_\_\_.  
*A: Egg, ovum*
78. Name the hormone that is produced from the ram's testicles.  
*A: Testosterone*
79. Name the structure in the female that serves as a womb.  
*A: Uterus*
80. What primary structure links the fetus to the placenta?  
*A: Naval, umbilical cord*
81. What is meant when it is said that a ewe has failed to clean following lambing?  
*A: The ewe retains her placenta or afterbirth instead of shedding it as she should have within about 12 hours after birth.*
82. How many testicles should a ram have?  
*A: 2*
83. How many sperm cells are actually needed to fertilize an egg?  
*A: 1*
84. Endometritis describes what condition in a ewe?  
*A: Uterine infection*



85. The uniting of the male and female sex cells is called \_\_\_\_\_.  
*A: Fertilization*
86. The male gamete is called the \_\_\_\_\_.  
*A: Sperm cell*
87. The eggs are produced by the \_\_\_\_\_, paired structures in the female reproductive tract.  
*A: Ovaries*
88. Satisfactory sperm production in the ram requires the testicles to be \_\_\_\_\_ than normal body temperature.  
*A: Cooler*
89. When both testicles fail to descend into the scrotum of a ram, he will retain his \_\_\_\_\_, but lose his \_\_\_\_\_.  
*A: Sex drive, ability to fertilize eggs*
90. Name the hormone that triggers growth of a follicle on the female ovary.  
*A: F.S.H. (Follicle stimulating hormone)*
91. The female gonad is the \_\_\_\_\_.  
*A: Ovary*
92. The unborn animal is nourished through the \_\_\_\_\_.  
*A: Placenta via the umbilical cord*
93. Name the hormone in the female that triggers ovulation and where it is produced.  
*A: L.H. (Luteinizing hormone) from the anterior pituitary gland*
94. What are two primary factors affecting how easily a ewe lambs?  
*A: Pelvic size, number of fetuses, size of fetuses, presentation of fetuses, sire selection*
95. Total sperm production in yearling rams can be directly related to \_\_\_\_\_.  
*A: Scrotal circumference*
96. What is the minimum acceptable scrotal circumference for a yearling ram?  
*A: Centimeters*
97. Sperm is produced by what tissue in the testes?  
*A: Interstitial*
98. Name two functions of the female ovary.  
*A: Production of ova, secretion of hormones*
99. Following ovulation, a corpus luteum develops and produces \_\_\_\_\_.  
*A: Progesterone*
100. An embryo contains \_\_\_\_\_ water as a percent of the total body weight than an adult animal.  
*A: More*
101. The fetus increases its size about how many times during the last month of pregnancy?  
*A: Three*

102. A fertilized egg is called a \_\_\_\_\_.  
*A: Zygote*
103. The life of a sperm cell in the female reproductive tract is about \_\_\_\_\_ times as long as the life of an unfertilized ovum.  
*A: Five*
104. What does the uterus of a pregnant ewe contain?  
*A: Fetus, unborn lambs*
105. Name two hormones produced by the ovary.  
*A: Estrogen, progesterone*
106. What is the period of pregnancy called?  
*A: Gestation*
107. Proestrus, estrus, metestrus and diestrus are stages of the \_\_\_\_\_ cycle.  
*A: Estrus*
108. What is diestrus?  
*A: A period when the female is having regular estrus cycles. In the ewe this may be seasonal, due to pregnancy or due to some malfunction of the system.*
109. What does the term fertility refer to?  
*A: Ability to produce young*
110. What is the primary female organ of reproduction?  
*A: Ovary*
111. Name two ways that gomer rams may be used.  
*A: To mark ewes that are in heat, to induce the onset of estrous cycles earlier in the season*
112. Name the condition occurring when a ewe expels a fetus prematurely.  
*A: Abortion*
113. If a male sperm bearing the X chromosome fertilizes an egg, what sex will the resulting lamb be?  
*A: Female*

## AGRONOMY SECTION L

1. If the recommended stocking rate for a given summer range is .6 AUM (Animal Unit Months) per acre, how many acres of rangeland would be required per animal unit for 3 months of grazing?  
*A: 5 (# months divided by rating of pasture)*
2. How many sheep make up 1 Animal Unit  
*A: 5 ewes and their offspring*
3. A forb is a broad-leafed, herbaceous plant which is commonly referred to as a \_\_\_\_\_.  
*A: Weed*
4. What is the standard test weight per bushel of milo?  
*A: 57 pounds per bushel*
5. In drought stressed sorghum, what part of the plant will contain the highest amount of nitrate?  
*A: Stalks (lower 1/3)*
6. Hay can be a fire hazard when it is \_\_\_\_\_ percent moisture.  
*A: 30-40%*
7. What happens when silage or haylage is stored too wet?
  - A. Loses nutrients*
  - B. Improper fermentation*
  - C. Lower palatability*
  - \*D. All of the above*
8. What poisonous factor is associated with wilted sweet clover?  
*A: Dicoumarin*
9. When a grain is harvested while still immature and the stalks are chopped and left with the grain allowing the product to ferment, the resulting feedstuff is known as \_\_\_\_\_.  
*A: Silage, ensilage*
10. Hay is costing \$60 per ton, and is fed at the rate of 5 lbs. per ewe per day. What is the daily feed cost?
  - A. \$ .80*
  - B. \$ .60*
  - C. \$ .30*
  - \*D. \$ .15*
11. Forage crops are commonly harvested as hay, haylage or silage. One criteria of deciding which class they fit into is dry matter content. Three crops have the following dry matter contents: 55%, 88% and 30%. Which one would be hay, silage and haylage?  
*A: Hay - 88% dry matter, Silage - 30% dry matter, Haylage - 55% dry matter*
12. Dark color and burnt odor are general indicators of what problem in haylage?  
*A: Heat damage*

13. What is the biggest advantage and disadvantage of baling hay in small bales?  
*A: Advantage - less wastage due to storage losses; Disadvantage - high labor requirement*
14. What type of plant is commonly associated with nitrogen fixing bacteria?  
*A: Legumes (alfalfa, soybeans)*
15. Spring top dressing of pasture land refers to what common pasture management practice?  
*A: Applying fertilizer*
16. Mycotoxins come from \_\_\_\_\_.  
*A: Mold*
17. Applying ammonia fertilizers to the soil increases the level of \_\_\_\_\_.  
*A: Nitrogen*
18. If you wanted to kill thistles in a fence row you would use which of the following?  
*A. DDT*  
*\*B. 2, 4-D*  
*C. CMT*  
*D. Copper sulfate*
19. The most valuable constituent of manure is \_\_\_\_\_.  
*A: Nitrogen*
20. What percentage of the primary nutrients in manure are available to crops during the first year after application?  
*A: 50%*
21. Which crop would respond most to the application of manure?  
*A. Alfalfa*  
*\*B. Grass sod*  
*C. Soybeans*
22. Under drought conditions, certain crops may cause prussic acid poisoning. Name a crop you are likely to have this problem with.  
*A: Sorghum-sudan grass*
23. Under what conditions do poisonous plants pose the most problems?  
*A: When animals are not fed and watered properly; after thirsty animals are watered, they readily eat plants they would otherwise avoid, starving animals will do likewise*

## WOOL SECTION M

1. A lamb shorn 75 days before going to slaughter is likely to have what type of pelt?  
*A: Number 1*
2. An extremely well-fed ewe flock will produce \_\_\_\_\_ pounds of wool that is \_\_\_\_\_ grading than a marginally-fed flock.  
*A: More, coarser*
3. Name the two layers of a sheep skin.  
*A: Dermis and epidermis*
4. Name the two types of follicles that produce wool fibers.  
*A: Primary and secondary*
5. Primary and secondary wool follicles have sebaceous glands. What do they produce?  
*A: Wax and grease*
6. What type of string should be used to tie fleeces?  
*A: Paper*
7. What do you call the entire coat of wool shorn from the sheep at one time?  
*A: Fleece*
8. What do you call purified wool grease?  
*A: Lanolin*
9. What does it mean to skirt a fleece?  
*A: Remove the stained or inferior wool from it*
10. The poorest quality wool is located on the \_\_\_\_\_ of the sheep.  
*A: Belly*
11. What does carding do for a fleece?  
*A: Pulls out and straightens the ends of the wool*
12. The natural waviness of wool fibers is called \_\_\_\_\_.  
*A: Crimp*
13. Wool that is 20 microns in diameter is considered:  
*A. Quarter blood*  
*B. 3/8 blood*  
*C. 1/2 blood*  
*\*D. Fine*
14. What causes a break in the wool fiber?  
*A: Sickness (fever or very poor nutrition)*
15. What is tagging?  
*A: Removal of the wool from the udder and vaginal area of the ewe prior to lambing*
16. How is wool graded?  
*A: Based on crimp (waviness) and spin count (diameter)*

17. Skin folds are highly \_\_\_\_\_ in sheep.  
*A: Heritable*

## HANDLING SECTION N

1. The field of vision for an average sheep is approximately how many degrees?  
*A: 270*
2. To prevent sheep from being spooked by distractions outside the handling facilities, what type of fences should be used in chutes and crowding pens?  
*A: Solid*
3. Which of the following breeds is generally more gregarious or has the greater flocking instinct?  
*A. Hampshire*  
*B. Dorset*  
*C. Suffolk*  
*\*D. Rambouillet*
4. Solid shades should be used over working, sorting and shearing facilities rather than materials such as snow fence. What is the sheep's likely reaction to the snow fence shade?  
*A: They will balk because of the shadows or contrasting light levels*
5. Sheep move more readily:  
*A. Uphill/with the wind*  
*\*B. Uphill/toward the wind*  
*C. Downhill/with the wind*  
*D. Downhill/toward the wind*
6. A producer should provide how many square feet of building space per ewe with lamb at side on dirt floor?  
*A: 15-20*
7. How much linear feeder space should a producer provide for each 80 pound feeder lamb on a self feeder?  
*A: 1-2 inches*
8. Fences and gates of gathering pens should be \_\_\_\_\_ structure.  
*A: Open*
9. A fairly standard minimum height of fences and gates for a gathering pen is \_\_\_\_\_ inches.  
*A: 42 inches*
10. Unless the sheep are extremely large or prone to jumping, a standard working chute height is \_\_\_\_\_ inches.  
*A: 36 inches*

## PREDATOR CONTROL SECTION O

1. What is the main wild predator of sheep?  
*A: Coyote*
2. Name two predators, other than a coyote, that sometimes prey on sheep.  
*A: Dog, fox, bobcat, bear, mountain lion, wolf, eagle*
3. Name two breeds of dogs that are commonly regarded as good guard animals to prevent predation.  
*A: Great Pyrenees, Komondor, Anatolian Shepherd, Akbash, Moremma*
4. Name two animals other than guard dogs that are sometimes used to protect sheep from predation.  
*A: Donkeys, goats, mules, ostriches, llama, sometimes cattle*
5. How does the evidence of a typical coyote attack differ from a dog attack?  
*A: A coyote is usually efficient and kills one animal by strangulation. Dogs will generally mutilate a number of sheep.*
6. In Kansas, what is the single most effective management measure a sheep producer can incorporate to reduce coyote predation?  
*A: Pen sheep at night*
7. Name two legal means of predator control.  
*A: Guard animals, trapping, snaring, shooting, netting*
8. Coyote attacks are most likely to occur at \_\_\_\_\_.  
*A: Night*



## CURRENT INFORMATION SECTION P

1. Which state in the U.S. has the highest number of sheep and lambs?  
*A: Texas*
2. Which state in the U.S. finishes more feedlot lambs than any other state?  
*A: Colorado*
3. Which general area of the country produces a high percentage of the lambs to be placed in feedlots?  
*A: Southwest or Northwest range*
4. What is one possible reason for a price dock on light weight lambs in the summer and a dock on heavy weight lambs in the winter?  
*A: The market can handle a percentage of all weight lambs at all times of the year, but when the market is flooded with too high a percentage of lambs from one weight class, the price drops for that category*
5. What is the name of a contract signed by a farmer in which he agrees to deliver a quantity and quality of a commodity such as grain at a specified month and provides a hedge against market fluctuations?  
*A: A futures contract*
6. Where should you look to find the latest recommendations on how to use an antibiotic?  
*A: On the label*
7. What does drug withdrawal time mean in regard to marketing animals for slaughter?  
*A: The amount of time prior to slaughter for which the animal must be off the drug*
8. What is the major problem associated with antibiotics turning up in the lamb on the consumer's table?  
*A: Some people are allergic to them*
9. What Act of Congress regulates safety and health standards for agriculture, business, and industry?  
*A: Occupational Safety and Health Act (OSHA)*
10. What are the current market prices for market lambs?  
*A:*

