1. The section of the vertebrae that makes up the neck in cattle, swine, or sheep is the:
   A. Coccygeal vertebrae
   B. Lumbar vertebrae
   C. Sacral vertebrae
   D. **Cervical vertebrae**

2. The “Femur” is classified as what type of bone?
   A. **long**
   B. short
   C. flat
   D. irregular

3. Which is **NOT** a function of the skeletal system?
   A. strength
   B. mineral storage
   C. blood storage
   D. protection

4. Hormones are organic catalysts that influence the growth and development of the body are produced in the:
   A. lymphatic system
   B. urinary system
   C. **endocrine system**
   D. digestive system

5. In what part of the respiratory system are the passages from the nostrils and the mouth joined?
   A. **pharynx**
   B. trachea
   C. bronchi
   D. alveoli

6. The pancreas gland produces which hormone?
   A. **insulin**
   B. estrogen
   C. testosterone
   D. thyroxine

7. Which nutrients have the highest energy value?
   A. proteins
   B. carbohydrates
   C. fiber
   D. **fats**

8. Which amino acid is nonessential in swine rations due to being synthesized in the body?
   A. Arginine
   B. **Cystine**
   C. Isoleucine
   D. Tryptophan
9. Which major mineral is often lacking in animal rations is:
   A. selenium  
   B. **calcium**  
   C. copper  
   D. iodine

10. The proportion of the total variation in offspring from parents due to additive gene effects:
    A. estimate  
    B. heterosis  
    C. hybrid vigor  
    D. **heritability**

11. Which trait in beef cattle has the highest heritability estimate?
    A. **ribeye area**  
    B. birth weight  
    C. carcass grade  
    D. dressing percent

12. Which trait in sheep has the lowest heritability estimate?
    A. mature weight  
    B. ribeye area  
    C. staple length  
    D. **feed efficiency**

13. The diploid number (pairs of chromosomes) for sheep is:
    A. **27**  
    B. 36  
    C. 19  
    D. 12

14. Which gland in the male produces the sperm cells?
    A. vas deferens  
    B. urethra  
    C. epididymis  
    D. **testicles**

15. The average age for cattle to reach puberty is:
    A. 10-12 months  
    B. 4-6 months  
    C. 12-14 months  
    D. **6-8 months**

16. The average length of the estrus cycle in swine is:
    A. 14 days  
    B. **21 days**  
    C. 28 days  
    D. 36 days
17. What is the average number of days in the length of gestation for sheep?
   A. 114  
   B. 121  
   C.  **148**  
   D. 162  

18. The release of the egg from the ovary is called:
   A. fertilization  
   B. **ovulation**  
   C. parturition  
   D. reproduction  

19. Which factor does **NOT** affect the demand for beef?
   A. number of people  
   B. **location of consumers**  
   C. income per person  
   D. meat preferences  

20. Which region of the United States produces the most beef cattle?
   A. Pacific  
   B. Cornbelt  
   C. **Southwest**  
   D. Lake States  

21. How many breeds of beef cattle are available to producers in the United States?
   A. 12  
   B. 20  
   C. 33  
   D. **50+**  

22. The Chianina breed of beef cattle which is one of the oldest originated in which country?
   A. France  
   B. Australia  
   C. **Italy**  
   D. Egypt  

23. Which breed of cattle was the first to have a herdbook published in the United States?
   A. **Shorthorn**  
   B. Hereford  
   C. Angus  
   D. Charolais  

24. Which breed of cattle is classified as a *Bos indicus* type?
   A. Pinzgauer  
   B. Simmental  
   C. Galloway  
   D. **Brahman**
25. What percent of cash income from livestock and crops come from beef in the United States?  
   A. 7%  
   B. 18%  
   C. 23%  
   D. 31%

26. Which of the following wholesale cuts of beef are high-value?  
   A. chuck  
   B. plate  
   C. brisket  
   D. rib

27. What is the standard number of days that beef cattle weaning weights are adjusted to?  
   A. 180  
   B. 205  
   C. 225  
   D. 260

28. Which breed of beef cattle has the highest standard birth weight in performance testing?  
   A. Angus  
   B. Maine Anjou  
   C. Hereford  
   D. Shorthorn

29. What term refers to the general conformation of a beef market animal?  
   A. muscling  
   B. finish  
   C. type  
   D. merit

30. When judging beef breeding classes, the proper term for the amount of fat cover is:  
   A. condition  
   B. finish  
   C. grease  
   D. backfat

31. The normal average body temperature for healthy beef cattle is:  
   A. 98.6°F  
   B. 99.9°F  
   C. 100.1°F  
   D. 101.5°F

32. What is the length of time that bacteria causing Anthrax can remain in the soil?  
   A. 90 days  
   B. 18 months  
   C. 10 years  
   D. 40 years
33. Pinkeye the common name of this disease carried by insects that affects the eyes of the animal:
   A. Leptospirosis
   B. **Infectious Keratitis**
   C. Brucellosis
   D. Blackleg

34. Rapid fermentation in the rumen causing too much gas to be produced:
   A. Enterotoxemia
   B. Founder
   C. **Bloat**
   D. Brisket Disease

35. Which nutritional disease is a heart condition of beef cattle at high altitudes?
   A. Brisket Disease
   B. Founder
   C. Bloat
   D. Hardware Disease

36. White Muscle disease is caused by a deficiency of the trace element:
   A. copper
   B. **selenium**
   C. calcium
   D. iron

37. Which state currently produces the most hogs?
   A. Oklahoma
   B. **Iowa**
   C. Texas
   D. Indiana

38. Which breed of swine has the highest performance in average litter size ratio?
   A. Yorkshire
   B. Berkshire
   C. Poland China
   D. Hampshire

39. Which breed of swine is known to produce the largest loin muscle area based on performance tests?
   A. Yorkshire
   B. Chester White
   C. Landrace
   D. **Hampshire**

40. The oldest known breed of swine developed in the early 1700’s:
   A. Hampshire
   B. Duroc
   C. **Berkshire**
   D. Poland China
41. A visual evaluation of the amount of muscle on a hog is best seen by looking at which view of the hog?
   A. side  
   **B. rear**  
   C. front  
   D. top

42. What term refers to the degree of refinement of head, hair, hide, and bone of the live hog?
   A. finish  
   B. soundness  
   C. proportion  
   **D. quality**

43. Which class of sheep is used primarily for meat production?
   A. Fine Wool  
   B. **Medium Wool**  
   C. Long Wool  
   D. Crossbred Wool

44. Since 1970, which breed of sheep has had the largest number registered with their breed association?
   A. Hampshire  
   B. Rambouillet  
   C. Southdown  
   **D. Suffolk**

45. Which fine wool breed of sheep originated in the United States?
   A. **Debouillet**  
   B. Merino  
   C. Rambouillet  
   D. Corriedale

46. The backfat on a market lamb should measure ______ at the twelfth rib.
   A. 0.05 to 0.10 inches  
   B. **0.15 to 0.20 inches**  
   C. 0.25 to 0.30 inches  
   D. 0.35 to 0.50 inches

47. Range production accounts for _______ percent of the total sheep production in the United States.
   A. 10  
   B. 30  
   C. 50  
   **D. 70**

48. The most commonly used method of classifying sheep is by:
   A. Carcass type  
   B. Point of origin  
   C. **Type of wool**  
   D. Number of young produced
49. A lack of what substance in the blood causes milk fever in sheep?
   A. Vitamin K  
   B. Calcium  
   C. Vitamin D  
   D. Zinc

50. What type of parasites are the most serious health problem for sheep?
   A. external  
   B. internal  
   C. live  
   D. mutated

51. The science in livestock production that studies the way in which traits of parents are passed on to the offspring is  
   A. hybrid vigor  
   B. heterosis  
   C. meiosis  
   D. genetics

52. Which species of livestock has a diploid number (number of pairs of chromosomes) of 19?  
   A. swine  
   B. sheep  
   C. goats  
   D. cattle

53. What takes place when a sperm cell from the male reaches an egg cell from the female?  
   A. mitosis  
   B. cell coding  
   C. fertilization  
   D. spermatozoa

54. Which trait for beef cattle has the highest heritability estimate?  
   A. conformation score at weaning  
   B. birth weight  
   C. rib eye area  
   D. fat thickness

55. Which trait in swine has the lowest heritability estimate?  
   A. age at puberty  
   B. loin muscle area  
   C. percent ham  
   D. birth weight

56. Genotype refers to the:  
   A. combination of genes  
   B. placing of genes  
   C. number of genes  
   D. splicing of genes
57. When chromosomes pairs are divided in such a manner that each gamete has one of each type of chromosome, the process is called:
   A. meiosis
   B. mitosis
   C. sequencing
   D. cell division

58. The characteristics of an animal that are inheritable are passed from one generation to the next by:
   A. sperm cells
   B. egg cells
   C. diploids
   D. genes

59. Sperm cells are produced in the:
   A. epididymis
   B. testicles
   C. scrotum
   D. vas deferens

60. The release of the egg cell from the ovary is called:
   A. fertilization
   B. ovulation
   C. parturition
   D. fertilization

61. The average length of gestation sheep is:
   A. 114 days
   B. **148 days**
   C. 220 days
   D. 283 days

62. The length of the estrus cycle for sheep is:
   A. **16 days**
   B. 21 days
   C. 28 days
   D. 35 days

63. The diploid number (pairs of chromosomes) for sheep is:
   A. 27
   B. 36
   C. 19
   D. 12

64. The average age for cattle to reach puberty is:
   A. 10-12 months
   B. 4-6 months
   C. 12-14 months
   **D. 6-8 months**
65. The first successful cloning of a vertebrate organism from mature body cells occurred in 1996 with which species?
A. cow  
B. pig  
C. sheep  
D. goat

66. Which is NOT a potential benefit of genetic engineering in livestock production?
A. developing disease resistant animals  
B. developing new species of livestock  
C. specifying the sex of an animal before conception  
D. developing new drugs and vaccines

67. The process of inducing cows to produce several oocytes during each estrus cycle is:
A. superovulation  
B. embryo transfer  
C. artificial insemination  
D. biobreeding

68. Porcine somatotropin (pST) is a protein produced in which gland of the pig?
A. lymph  
B. pituitary  
C. reproductive  
D. endocrine

69. Mating animals of the same breed is called:
A. linebreeding  
B. crossbreeding  
C. inbreeding  
D. straightbreeding

70. The mating of two animals that can be traced back to one common ancestor is:
A. closebreeding  
B. linebreeding  
C. outcrossing  
D. grading up

71. What is a common disqualification in rules for registering animals in a breed association?
A. weight  
B. size  
C. color markings  
D. eyes

72. The majority of beef cow herd operations have how many cows?
A. 1-49 head  
B. 50-99 head  
C. 100-499 head  
D. Over 500 head
73. Which factor does NOT affect the demand for beef?
   A. number of people
   B. *availability of imported beef*
   C. income per person
   D. meat preferences

74. What is a disadvantage of raising beef?
   A. high death losses
   B. demand for beef
   C. beef nutrition requirement for roughages
   D. *time required to develop a cattle herd*

75. Which of the listed regions of the United States produces the most beef cattle?
   A. Pacific
   B. Cornbelt
   C. *North Plains*
   D. Southeast

76. How many breeds of beef cattle are available to producers in the United States?
   A. 12
   B. 20
   C. 33
   D. 50+

77. The Simmental breed of beef cattle which dates back to the Middle Ages, originated in which country?
   A. France
   B. Australia
   C. *Switzerland*
   D. Germany

78. Which breed of cattle was the first to be imported to the United States?
   A. Shorthorn
   B. Hereford
   C. Angus
   D. Charolais

79. Which breed of cattle is classified as a *Bos indicus* type?
   A. Pinzgauer
   B. Simmental
   C. Galloway
   D. *Brahman*

80. What percent of cash income from livestock and crops come from beef in the United States?
   A. 7%
   B. **18%**
   C. 23%
   D. 31%
81. Which breed of cattle was in existence in Italy before the time of the Roman Empire?
   A. Devon  
   **B. Chianina**  
   C. Beefmaster  
   D. Brahman

82. In 1927, the United States Congress appropriated money for which breed of cattle that were almost extinct?
   A. Polled Hereford  
   B. Red Angus  
   C. Santa Gertrudis  
   **D. Texas Longhorn**

83. The Beef Promotion and Research Act of 1985 established a checkoff amount for every head of beef sold in the United States of:
   A. $.50  
   **B. $1.00**  
   C. $2.00  
   D. $5.00

84. The method of marketing where cattle are sold by public bidding to the highest bidder is:
   A. public stockyards  
   B. contract sales  
   **C. auction markets**  
   D. terminal markets

85. Shrinkage of cattle as they are moved to market is **NOT** affected by:
   A. market price  
   B. weather  
   C. sex of the animal  
   D. length of the fillback period

86. The country of origin labeling became mandatory in what year?
   A. 1942  
   B. 1986  
   C. 1999  
   **D. 2004**

87. A beef carcass with slightly abundant marbling with a maturity level A will be what grade?
   A. **Prime**  
   B. Choice  
   C. Select  
   D. Cutter

88. Which beef cattle yield grade indicates the highest yield of lean meat?
   A. Yield Grade 7  
   B. Yield Grade 5  
   C. Yield Grade 3  
   **D. Yield Grade 1**
89. Which of the following states produces the most swine?
   A. Missouri
   B. Minnesota
   C. North Carolina
   D. Oklahoma

90. Which breed of swine has the highest performance in average litter size ratio?
   A. Yorkshire
   B. Berkshire
   C. Poland China
   D. Hampshire

91. Which breed of swine was developed in the United States
   A. Berkshire
   B. Poland China
   C. Yorkshire
   D. Pietrain

92. Approximately what percent of the market hogs sold in the United States are priced on the basis of carcass merit?
   A. 25%
   B. 45%
   C. 70%
   D. 90%

93. A futures contract for marketing hogs is based on units. One trading unit equals:
   A. 10,000 pounds
   B. 20,000 pounds
   C. 30,000 pounds
   D. 40,000 pounds

94. The traditionally recommended weight for marketing slaughter hogs has been:
   A. 150-180 pounds
   B. 180-200 pounds
   C. 200-220 pounds
   D. 230-260 pounds

95. Which state produces the most sheep and lambs?
   A. California
   B. Wyoming
   C. Oklahoma
   D. Ohio

96. The majority of sheep operations produce:
   A. less than 100 head
   B. 100 to 499 head
   C. 500 to 1000 head
   D. more than 1000 head
97. Which breed of sheep is classified as a fine wool breed?
   A. Hampshire
   B. **Rambouillet**
   C. Southdown
   D. Corriedale

98. Lambs under three months of age weighing less than 60 pounds sold in specialty markets between Christmas and Easter are called:
   A. **Hothouse lambs**
   B. Spring lambs
   C. Veal lambs
   D. Holiday lambs

99. Lambs prices average higher during which period of the year?
   A. June through August
   B. September through November
   C. December through February
   D. **March through May**

100. The thickness of fat over the ribeye determines the yield grade for all slaughter sheep. A slaughter sheep with 0.26 to 0.35 inches of fat will grade:
    A. Yield Grade 2
    B. **Yield Grade 3**
    C. Yield Grade 4
    D. Yield Grade 1

101. Adapting the behavior of animals to fit the need of humans is called:
    A. training
    B. **domestication**
    C. breeding
    D. culling

102. Which species of livestock descended from two wild stocks known as “Sus scrofa” and “Sus vittatus”?
    A. **swine**
    B. sheep
    C. goats
    D. cattle

103. Most present-day sheep descended from the wild sheep called Moufflons and the:
    A. Bos Indicus
    B. Meleagris
    C. **Asiatic urial**
    D. Struthis camelus

104. Which species of livestock does NOT belong to the family Bovidae?
    A. sheep
    B. cattle
    C. **swine**
    D. goats
105. Which species of livestock is the most efficient into converting feed into energy and protein?
   A. cattle  
   B. goats  
   C. sheep  
   D. swine

106. How many different drugs such as Insulin and Epinephrine used by humans for medical purposes are made from animal by-products?
   A. more than 100  
   B. 70 to 80  
   C. 40 to 50  
   D. less than 25

107. Average beef consumption in the United States ranges from ________ pounds per person per year.
   A. 25 - 35  
   B. 40 - 50  
   C. 60 - 70  
   D. 85 - 95

108. According to USDA, the greatest expense in the production of livestock is:
   A. contract and hired labor  
   B. livestock purchased  
   C. fuel and electricity  
   D. feed purchased

109. Which of the following states is in the Top 10 in the production of beef cattle, sheep, and swine?
   A. Texas  
   B. Nebraska  
   C. California  
   D. Iowa

110. Joints in the skeleton of animals that allow free movement and have a fluid-filled cavity are called:
   A. fibrous joints  
   B. diarthroses joints  
   C. amphiarthroses joints  
   D. cartilaginous joints

111. Much of the flesh referred to as meat in farm animals is composed of:
   A. skeletal muscle  
   B. smooth muscle (p 109)  
   C. cardiac muscle  
   D. unstriated muscle

112. The part of the respiratory system where the passages from the nostrils and the mouth are joined:
   A. pharynx  
   B. larynx  
   C. trachea  
   D. nasal cavity
113. The ventricles and the atria are a part of which system in the animal’s body?
   A. circulatory
   B. respiratory
   C. muscle
   D. digestive

114. Progesterone and Estrogen are both hormones produced in which gland?
   A. testes
   B. adrenal
   C. pancreas
   D. ovary

115. In the ruminant digestive system, where is hydrochloric acid produced?
   A. rumen
   B. omasum
   C. reticulum
   D. abomasum

116. Which amino acid listed is essential in swine rations?
   A. Cystine
   B. Lysine
   C. Glycine
   D. Proline

117. Which fat-soluble vitamin is associated with good bone development?
   A. Vitamin A
   B. Vitamin D
   C. Vitamin E
   D. Vitamin K

118. Which vitamin do animals tend to produce enough of so that it does not need to be included as a specific nutrient in their rations?
   A. Vitamin A
   B. Vitamin C
   C. Vitamin D
   D. Vitamin E

119. Diseases present in the animal’s body at levels too low to cause visible effects are:
   A. subtherapeutic
   B. chemobiotics
   C. probiosis
   D. subclinical

120. Feed additives used to control worms and other internal parasites are:
   A. Coccidiostats
   B. Anthelmintics
   C. Probiotics
   D. Antimicrobials
121. ________ is a synthetic hormone feed additive that suppresses estrus.
   A. Monesin
   B. Melengestrol acetate
   C. Bovatec
   D. Estrogen

122. Which agency regulates the use of feed additives in the United States?
   A. United States Department of Agriculture (USDA)
   B. Federal Register (FR)
   C. Food and Drug Administration (FDA)
   D. Animal Health and Production Division (AHPD)

123. Which is NOT a consideration for the use of feed additives?
   A. increased nutrient content
   B. improved feed efficiency
   C. promote faster gains
   D. improved animal health

124. ________ was one of the exotic breeds of cattle from Europe introduced into the United States in
    the 1960’s and 1970’s.
   A. Red Angus
   B. Murray Grey
   C. Chianina
   D. Santa Gertrudis

125. Since 1970, the top ranked breed of beef cattle in terms of number registered has been the:
    A. Hereford
    B. Limousin
    C. Simmental
    D. Angus

126. Which breed of cattle is the most popular in Europe?
    A. Limousin
    B. Maine-Anjou
    C. Simmental
    D. Shorthorn

127. Which breed of cattle was originally developed as a draft or work animal?
    A. Maine-Anjou
    B. Galloway
    C. Brahman
    D. Hays Converter

128. Which breed of cattle is believed to have descended from Bos longifrons, a small type of aboriginal
    cattle in Britain?
    A. Pinzgauer
    B. Gelbvieh
    C. Shorthorn
    D. Devon
129. Which breed is classified as a “dual-purpose” breed (milk and meat)?
   A. Highland    
   B. South Devon   
   C. Romagnola   
   D. Limousin

130. Frame score is a measurement based on observation and height measurement when calves are evaluated at _________ days of age.
   A. 125   
   B. 205  
   C. 285   
   D. 305

131. ________ is a measure of the degree of difference between the offspring of a specific bull and the offspring of the average bull of the breed in the trait being measured.
   A. MPV   
   B. SPF   
   C. OSB   
   D. EPD

132. The carcass merit of cattle is expressed by yield grade. Which yield grade is assigned when a carcass yields from 50.1% - 52.3%?
   A. yield grade 1   
   B. yield grade 2   
   C. yield grade 3   
   D. yield grade 4

133. Which of the following terms should only be used when talking reasons for breeding cattle and not for market classes?
   A. muscling   
   B. balance   
   C. condition   
   D. finish

134. A chronic degenerative disease that affects the central nervous system of cattle (also called “Mad Cow Disease”):
   A. Bovine Spongiform Encephalopathy   
   B. Bovine Respiratory Syncytial Virus   
   C. Infectious Bovine Rhinotracheitis   
   D. Keratoconjunctivitis

135. Cattle infected with this disease often abort during the last half of pregnancy.
   A. Enteritis   
   B. Paratuberculosis   
   C. Actinobacillosis   
   D. Brucellosis
136. Brisket disease affects the ________ in cattle?
   A. heart
   B. brain
   C. lungs
   D. stomach

137. Which breed of swine has an average litter size ratio of 100 when compared to other breeds?
   A. Berkshire
   B. Duroc
   C. Hampshire
   D. Yorkshire

138. Which information is NOT typically required for the registration of individual hogs?
   A. Date farrowed
   B. Ear notches
   C. Number of teats
   D. Name of sire

139. Application of genetic principles to performance records in swine selection results in:
   A. Estimated Breeding Values
   B. Expected Progeny Difference
   C. Performance Selection Index
   D. Genetic Values Index

140. Normal temperature range for swine is:
   A. 97.2°F to 98.2°F
   B. 98.6°F to 99.2°F
   C. 100.1°F to 100.9°F
   D. **102.0°F to 103.6°F**

141. Which disease affects the turbinate bones in swine?
   A. Actinobacillus Pleuropneumoniae
   B. Eperythrozoonosis
   C. **Atropic Rhinitis**
   D. Leptospirosis

142. A swine nutritional health problem caused by a lack of iron in the diet.
   A. Parakeratosis
   B. Rickets
   C. **Anemia**
   D. Hypoglycemia

143. The sudden death of heavily muscled hogs is referred to as::
   A. Porcine Circivirus
   B. Mycoplasmal Pneumonia
   C. **Porcine Stress Syndrome**
   D. Porcine Cardiac Complex
144. Which breed of sheep is classed as a Medium Wool?
   A. Shropshire  
   B. Corriedale  
   C. American Merino  
   D. Columbia

145. The breed of sheep noted for producing a 200 to 250 percent lamb crop:
   A. Finnsheep  
   B. Leicester  
   C. Delaine Merino  
   D. Southdown

146. A majority of meat goats are a cross of Spanish goats and __________ goats.
   A. Angora  
   B. Boer  
   C. Nubian  
   D. Toggenburg

147. Bacterial disease that affects both sheep and goats when the animal has a wound. Symptoms include stiffness, rigid jaw, and inability to eat.
   A. Vibriosis  
   B. Tetanus  
   C. Enterotoxemia  
   D. Blue Tongue

148. Scrapie is a disease of both sheep and goats that affects the:
   A. brain  
   B. digestive tract  
   C. skin  
   D. lungs

149. Milk Fever is a nutritional disease affecting both sheep and goats during lactation due to a lack of ___ in the blood.
   A. iron  
   B. selenium  
   C. iodine  
   D. calcium

150. The most serious health problem of sheep and goats is:
   A. External parasites  
   B. Internal parasites  
   C. Nutritional deficiencies  
   D. Bacterial diseases

151. Which species of livestock has a diploid number of 27 (pairs of chromosomes)?
   A. Cattle  
   B. Goats  
   C. Sheep  
   D. Swine
152. Which trait in beef cattle has the highest heritability estimate?
   A. Gain on pasture
   B. **Final feedlot weight**
   C. Birth weight
   D. Efficiency of gain

153. Sheep have the highest heritability estimate for which of the following traits?
   A. **Staple length**
   B. Feed efficiency
   C. Conformation score
   D. Fat thickness

154. Which trait for swine has the lowest heritability estimate?
   A. Percent ham
   B. Carcass length
   C. Loin muscle area
   D. **Litter size**

155. The physical appearance of an animal is referred to as it:
   A. **Phenotype**
   B. Genotype
   C. Dominance
   D. Codominance

156. Which hormone is responsible for the masculine appearance in animals?
   A. Progesterone
   B. Estrogen
   C. Masterone
   D. **Testosterone**

157. Which species of livestock reaches puberty based on the season and not age?
   A. Cattle
   B. **Goats**
   C. Sheep
   D. Swine

158. The length of gestation for swine is an average of how many days?
   A. 283 days
   B. 151 days
   C. 148 days
   D. **114 days**
159. The release of the egg from the ovary is called?
   A. Ovulation
   B. Fertilization
   C. Gestation
   D. Parturition

160. The most intensive form of inbreeding is called?
   A. Purebreeding
   B. Closebreeding
   C. Linebreeding
   D. Outcrossing

161. When crossbreeding beef cattle with a 2-breed cross, which trait has the advantage over non-crossbred cattle?
   A. Carcass traits
   B. Yearling weight
   C. Feed efficiency
   D. Disease immunity

162. Which production trait in swine is not increased when crossing with a purebred sow?
   A. Conception rate
   B. Litter size weaned
   C. Days to 220 pounds
   D. Feed/gain ratio

163. What percent of beef cattle cow-calf operations in the United States have less than 50 head of cows?
   A. 21.5%
   B. 43.5%
   C. 52.5%
   D. 77.5%

164. Which breed of beef cattle has been the leader on total number registered since 1970?
   A. Simmental
   B. Hereford
   C. Angus
   D. Charolais

165. Which breed of beef cattle did NOT originate in Scotland?
   A. Angus
   B. Galloway
   C. Shorthorn
   D. Highland
166. Which English breed of cattle was originally called Durhams?
   A. Hereford  
   B. Angus  
   C. Shorthorn  
   D. Devon  

167. Which breed of polled cattle originated from horned cattle and were selected because of the recessive trait and not a breed know to be naturally polled?
   A. Galloway  
   B. Red Angus  
   C. Red Poll  
   D. Polled Hereford  

168. Which breed of beef cattle in NOT white in color?
   A. Marchigiana  
   B. Saler  
   C. Charolais  
   D. Chianina  

169. In beef cattle, a muscle conformation score for feeder calves of 1 indicates:
   A. An exceptionally thin calf  
   B. Light muscled calf  
   C. Heavy muscled calf  
   D. Double muscled calf  

170. Which of the following breeds of beef cattle has the heaviest birth weight for calves of either sex for performance testing?
   A. Angus  
   B. Charolais  
   C. Hereford  
   D. Limousin  

171. If a steer produces a yield of 47.8% to 50% of carcass weight in boneless retail cuts, it has a yield grade of:
   A. 1  
   B. 2  
   C. 3  
   D. 4
172. The Beef Check-off of $1 per head for every head of beef sold in the United States was established by:
   A. The Beef Promotion and Research Act of 1985
   B. The Packers and Stockyard Act
   C. The Beef Check-Off Referendum of 1992
   D. National Livestock Marketing Association

173. Markets where cattle are sold by public bidding, with the animals going to the highest bidder, is:
   A. Terminal market
   B. Direct selling market
   C. Electronic market
   D. Auction market

174. Cattle with a U.S. Quality Grade of Prime will have a marbling grade of:
   A. Slight
   B. Moderate
   C. Slightly Abundant
   D. Moderately Abundant

175. In some cattle a condition in which the lean meat is darker than normal is called:
   A. Black cutter
   B. Low cutter
   C. Choice
   D. Dark cutting beef

176. Which of the following states has the highest number of hogs and pigs?
   A. Illinois
   B. Nebraska
   C. Missouri
   D. North Carolina

177. In comparing breed performance for litter size in swine, which breed has the highest litter size ratio?
   A. Hampshire
   B. Landrace
   C. Duroc
   D. Chester White

178. Which purebred of swine can be traced back nearly 300 years?
   A. Yorkshire
   B. Berkshire
   C. Hampshire
   D. Tamworth
179. Which of the breeds listed does not have red as one of its standard colors?
   A. Tamworth
   B. Hereford
   C. Duroc
   D. Pietrain

180. Which breed of hog is black with a white belt that encircles the fore part of the body?
   A. Hereford
   B. Berkshire
   C. Poland China
   D. Hampshire

181. The four primal cuts of a hog carcass represent what percent of the total value of the animal?
   A. 44%
   B. 56%
   C. 75%
   D. 82%

182. Symbol III represents the ideal market hog of the future. One production characteristic of Symbol III is a live market weight of:
   A. 210 pounds
   B. 240 pounds
   C. **270 pounds**
   D. 300 pounds

183. The Pork Promotion, Research and Consumer Information Act of 1985 established an assessment of ____ per $100 value of pork sold in the United States.
   A. 40¢
   B. 60¢
   C. 75¢
   D. $1.00

184. The major objection of boar meat is the odor of the meat called boar taint. One compound causing boar taint is:
   A. Skatole
   B. Testosterone
   C. Sulfamethazine
   D. Progesterone
185. Approximately what percent of the market hogs sold in the United States are priced on the basis of carcass merit?
   A. 30%
   B. 50%
   C. 70%
   D. 90%

186. A barrow or gilt having a U.S. No. one grade will produce a chilled carcass yielding ______ or more of the four lean cuts.
   A. 44.6 percent
   B. 52.4 percent
   C. 58.2 percent
   D. 60.4 percent

187. A barrow that grades a U.S. Number 2 and is thick muscled will have a back fat measurement of:
   A. Less than 1.00 inch
   B. 1.00 – 1.24 inches
   C. 1.25 – 1.49 inches
   D. 1.50 – 1.74 inches

188. What month of the year is the price of slaughter hogs the highest on average?
   A. March
   B. July
   C. October
   D. December

189. What is the unit of trading when marketing live hogs with a futures contract?
   A. 20,000 pounds (around 90 head)
   B. 30,000 pounds (around 140 head)
   C. 40,000 pounds (around 180 head)
   D. 50,000 pounds (around 230 head)

190. Which listed state has the highest number of sheep and lambs?
   A. Arizona
   B. Montana
   C. Idaho
   D. California

191. The Columbia breed of sheep is classified as:
   A. Fine wool
   B. Medium wool
   C. Long wool
   D. Crossbred wool
192. Which Medium Wool breed of sheep has a white face?
   A. Dorset  
   B. Hampshire  
   C. Shropshire  
   D. Suffolk

193. Which Medium Wool breed was developed in the United States?
   A. Dorset  
   B. Hampshire  
   C. Montadale  
   D. Southdown

194. ___ is a term for the general build of a sheep.
   A. Style  
   B. Quality  
   C. Type  
   D. Balance

195. Which breed of goat is primarily used for breeding meat goats?
   A. Boer  
   B. Angora  
   C. Toggenburg  
   D. Pygmy

196. Sheep that are 7 to 12 months of age have the age classification of:
   A. Hothouse lambs  
   B. Lambs  
   C. Yearlings  
   D. Muttons

197. Which live grade of sheep is used only on lambs and yearlings and **NOT** for slaughter lambs?
   A. Prime  
   B. Choice  
   C. Good  
   D. Utility

198. The retail cut of lamb identified as American-Style Roast comes from the:
   A. Leg  
   B. Loin  
   C. Rack  
   D. Shoulder
199. Lamb prices vary throughout the year and reach a high during which time?
   A. December to February
   B. March to May
   C. June to August
   D. September to November

200. Goat meat is marketed under the name:
   A. Mutton
   B. Venison
   C. Veal
   D. Chevon

201. Adapting the behavior of animals to fit the needs of humans is called: (p 5)
   a. Training
   b. Domestication
   c. Breeding
   d. Culling

202. In the classification of farm animals; cattle, sheep, and goats all belong to the same class, order, and family. The family they belong to is: (p 10)
   a. Artiodactyla
   b. Bos indicus
   c. Bovidae
   d. Moufflons

203. Which species of domestic livestock is considered the least intelligent? (p 7)
   a. Cattle
   b. Goats
   c. Sheep
   d. Swine

204. Which animal by-product derived from the pancreas is used in the treatment of diabetes? (p 15)
   a. Cortisone
   b. Insulin
   c. Epinephrine
   d. Heparin

205. Which livestock product has the highest consumption rate in the United States? (p 16)
   a. Beef
   b. Lamb
   c. Goat
   d. Pork
206. Livestock production faces the greatest scrutiny and potential lawsuits in which of the following areas? (p 84-85)
   a. Facilities design
   b. Predator control
   c. Nutrition values
   d. **Waste management**

207. What is the primary environmental factor that affects the efficiency of energy from feed consumption of farm animals? (p 95)
   a. **Air temperature**
   b. Humidity
   c. Precipitation
   d. Wind

208. Ractopamine Hydrochloride is a growth promoter that increases feed efficiency, encourages muscle growth, and lower fat content in which species? (p 227)
   a. Cattle
   b. Goats
   c. Sheep
   d. **Swine**

209. The first successful cloning of a farm animal occurred in 1996 with: (p 223)
   a. Cattle
   b. Goats
   c. **Sheep**
   d. Swine

210. Which state has greatest beef production? (p 248)
   a. Oklahoma
   b. Iowa
   c. California
   d. **Nebraska**

211. Limousin, Charolais, and Maine-Anjou cattle are important breeds used in U.S. beef production that all originated from: (p 251-254)
   a. England
   b. Italy
   c. Scotland
   d. **France**
212. Which is the oldest breed of cattle developed in the United States using Brahman as a foundation breed based on breeding records and NOT the formation of the breed association? (p 260)
   a. Beefmaster
   b. Santa Gertrudis
   c. Brangus
   d. Braford

213. Which breed of cattle has the lowest birth weight used in performance testing programs? (p 272)
   a. Angus
   b. Hereford
   c. Charolais
   d. Simmental

214. The state with the highest pork production is: (p 389)
   a. North Carolina
   b. Minnesota
   c. Texas
   d. Indiana

215. Which breed of swine is the oldest of the pure breeds? (p 392)
   a. Yorkshire
   b. Hampshire
   c. Tamworth
   d. Berkshire

216. Which breed of swine was originally known as the Thin Rind? (p 394)
   a. Poland China
   b. Hereford
   c. Hampshire
   d. Landrace

217. Which breed of swine is the most prolific for average litter size? (P 391)
   a. Duroc
   b. Chester White
   c. Hampshire
   d. Landrace

218. The National Pork Board developed a model of the ideal market hog know as: (P 401)
   a. Perfection II
   b. Symbol III
   c. Jasper
   d. Vision III
219. A visual evaluation of the amount of muscle on a hog is best seen by looking at which view of the animal? (P 409)
   a. Side
   b. **Rear**
   c. Front
   d. Top

220. What percentage of the total value of the carcass of a hog is made up of the four primal cuts? (P 400)
   a. 45%
   b. 60%
   c. **75%**
   d. 80%

221. Which state has the highest production of sheep and lambs? (p 495)
   a. Wyoming
   b. South Dakota
   c. Ohio
   d. **California**

222. Which classification of sheep is bred primarily for meat production? (p 497)
   a. **Medium wool sheep**
   b. Fine wool sheep
   c. Hair sheep
   d. Fur sheep

223. Which breed of sheep was developed in the United States? (p 498)
   a. Hampshire
   b. Dorset
   c. Southdown
   d. **Debouillet**

224. Which breed of goat main function is the production of mohair? (p 527)
   a. **Angora**
   b. Nubian
   c. Boer
   d. Toggenburg

225. Which breed of goat is used in crossbreeding programs to increase meat production? (p 538)
   a. **Boer**
   b. Angora
   c. Spanish
   d. Saanen