

## AVIAN SYSTEM

1. What are the two main parts of the female reproductive system?
2. Spell "oviduct".
3. The ovary is a cluster of developing \_\_\_\_\_ or \_\_\_\_\_.
4. Located midway between the neck and the tail of the female bird, attached along the back is the \_\_\_\_\_.
5. The ovary is fully formed when the female chick is:
  - a. 1 week old
  - b. 3 days old
  - c. hatched
  - d. 2 days old
6. The ovary is made up of how many minute yolks or ova?
7. The ova starts out as a single cell surrounded by which membrane?
8. Spell "vitelline".
9. The vitelline membrane keeps:
  - a. fat out
  - b. water out
  - c. dust out
10. The color of the yolk or ova comes from fat soluble pigments called \_\_\_\_\_.
11. Spell "xanthophylls".
12. The release of the mature yolk from the ovary into the second part of the female reproductive system is called \_\_\_\_\_.
13. Spell "ovulation".
14. Ovulation occurs how long after the previous egg has been laid?
15. The oviduct is how long?

16. The oviduct is divided into how many major sections?

- a. 3
- b. 4
- c. 5
- d. 6

17. Name two of the major sections of the oviduct.

18. Spell “infundibulum”.

19. Spell “isthmus”.

20. How many functional oviducts are in a chicken?

21. Which oviduct in a chicken is normally functional?

22. Spell “rudimentary”.

23. Name the first part of the oviduct:

- a. magnum
- b. isthmus
- c. vagina
- d. infundibulum

24. The infundibulum is how long?

25. How long does the yolk remain in the infundibulum?

26. The second section of the oviduct is the:

- a. magnum
- b. isthmus
- c. vagina
- d. infundibulum

27. The largest section of the oviduct is the \_\_\_\_\_.

28. How long is the magnum?

29. How long does the yolk remain in the magnum?

30. What is added to the yolk in the magnum?

31. Spell “albumen”.

32. The third section of the oviduct is the:

- a. shell gland
- b. isthmus
- c. vagina
- d. infundibulum

33. Spell "isthmus".

34. How long is the isthmus?

35. What is added to the egg in the isthmus?

36. The fourth section of the oviduct is the:

- a. vagina
- b. shell gland
- c. isthmus
- d. magnum

37. The shell gland is how long?

38. How long does the egg remain in the shell gland?

39. The egg shell is primarily made up of \_\_\_\_\_.

40. Two things done in and by the shell gland are?

41. What percent of her body calcium does the hen mobilize to make the egg shell?

42. Pigment deposition is done in which section of the oviduct?

43. The fifth section of the oviduct is the:

- a. magnum
- b. shell gland
- c. vagina
- d. funnel

44. The vagina is how long?

45. What part does the vagina play in egg formation?

46. The vagina is made out of \_\_\_\_\_.

47. Spell “spermatozoa”.
48. Two testes comprise a portion of what?
49. What is the location of the seminiferous tubules?
50. Spell “seminiferous tubules”.
51. The seminiferous tubules produce \_\_\_\_\_.
52. What moves sperm from the testes to the outside of the body?
53. The chicken heart has:
  - a. 5 chambers
  - b. 4 chambers
  - c. 3 chambers
  - d. 2 chambers
54. The chicken heart has how many ventricles?
55. The chicken heart has how many atria?
56. Spell “ventricles”.
57. Spell “atria”.
58. The heart rate of a Leghorn female is about:
  - a. 200 beats per minute
  - b. 250 beats per minute
  - c. 300 beats per minute
  - d. 350 beats per minute
59. The heart rate of a New Hampshire male is about:
  - a. 200 beats per minute
  - b. 250 beats per minute
  - c. 300 beats per minute
  - d. 350 beats per minute
60. Transporting oxygen, carbon dioxide, metabolites, hormones and nutrients throughout the body is a function of what system?
61. The chicken’s body temperature is about how many degrees Fahrenheit?

62. Red blood cells and white blood cells are formed in the \_\_\_\_\_.
63. Unlike a mammal's, a bird's red blood cells are \_\_\_\_\_.
64. Spell "nucleated".
65. The CNS and the ANS are the two main parts of what?
66. The central nervous system is responsible for:
- a. voluntary actions of the organs, intestines, blood vessels & glands
  - b. voluntary actions of the body
  - c. involuntary actions of the organs, intestines, blood vessels & glands
  - d. involuntary actions of the body
67. The autonomic nervous system is responsible for:
- a. voluntary actions of the organs, intestines, blood vessels & glands
  - b. voluntary actions of the body
  - c. involuntary actions of the organs, intestines, blood vessels & glands
  - d. involuntary actions of the body
68. The primary function of the nervous system is to integrate the functions of the \_\_\_\_\_.
69. The main organ of the excretory system is the \_\_\_\_\_.
70. Spell "excretory".
71. The functional units of the kidney are \_\_\_\_\_.
72. Spell "nephrons".
73. Regulating the acid-base balance in the bird's body is a function of the:
- a. circulatory system
  - b. excretory system
  - c. muscle system
  - d. reproductive system
74. In poultry, the major end product of protein utilization is?
75. Poultry waste is composed of \_\_\_\_\_ and \_\_\_\_\_.
76. The three types of muscle in a bird's body are?

77. The autonomic nervous system controls which muscle type?
78. The type of muscle found in the gizzard is?
79. The type of muscle comprising the specialized muscle of the heart is?
80. The type of muscle responsible for the shape of the bird is the?
81. Thigh muscle is an example of:
- a. smooth muscle
  - b. cardiac muscle
  - c. skeletal muscle
82. Spell “autonomic”.
83. Spell “cloaca”.
84. What is the skeletal system important to the bird for?
85. What are the two additional, unique functions of the skeletal system?
86. The skeletal system is strong. As stated in the study material, what are two other adjectives used to describe the skeletal system?
87. What are the two special types of bones which make up the bird’s skeletal system?
88. Spell “pneumatic”.
89. Spell “medullary”.
90. Which type of bone is important to the bird for respiration?
91. Give three examples of pneumatic bones.
92. Spell “humerus”
93. Spell “clavicle”.
94. Which type of bone is important to the laying hen as a source of calcium?

95. The primary component of egg shell is:

- a. nitrogen
- b. phosphorus
- c. potassium
- d. calcium

96. A hen mobilizes what percent of her body calcium to make the egg shell?

- a. 45
- b. 46
- c. 47
- d. 48

97. Give three examples of medullary bones.

98. Spell "scapula".

99. On what part of the bird's body is the tibia located?

100. On what part of the bird's body is the fibula located?

101. On what part of the bird's body is the ulna located?

102. On what part of the bird's body is the humerus located?

103. What is the topmost vertebra of the neck called?

104. On what part of the bird's body is the occipital bone located?

105. What three things make up the respiratory system?

106. The lungs of the bird are different from that of a mammal's in that they are \_\_\_\_\_.

107. Air sacs are:

- a. unique to the bird and rigid
- b. found in mammals and birds
- c. unique to the bird and flexible
- d. only found in mammals

108. How many air sacs are in a bird?
- a. 5
  - b. 7
  - c. 9
  - d. 11
109. Spell “interclavicular”.
110. Spell “abdominal”.
111. Spell “thoracic”.
112. How many pairs of air sacs are in a bird?
113. Which air sac is not found in a pair?
114. The respiratory system is important for air exchange and what else?
115. Which system functions to utilize food material for the maintenance of all the other systems of the bird’s body?
- a. circulatory
  - b. excretory
  - c. nervous
  - d. digestive
116. What are the proteins which chemically break down food called?
117. What part of the digestive system contains salivary glands?
118. Spell “salivary”.
119. Spell “enzyme”.
120. What does the bird use to push food to the back of the mouth?
121. What is the tube that connects the mouth with the rest of the digestive tract?
122. What part of the digestive system is used to store food until the bird is ready to digest more food?
123. In what region is the crop located?
124. Spell “esophagus”.



125. Another name for the proventriculus is the:
- small stomach
  - large stomach
  - false stomach
  - true stomach
126. Spell “proventriculus”.
127. How many enzymes does the proventriculus secrete?
128. What are the enzymes the proventriculus secretes?
129. What part of the bird’s digestive tract is made up of two smooth muscles and contains grit or stones?
130. What part of the bird’s digestive tract acts as the bird’s teeth?
131. Spell “gizzard”.
132. The small intestine is important for the absorption of \_\_\_\_\_.
133. The duodenum is part of the:
- esophagus
  - small intestine
  - large intestine
  - reproductive tract
134. Spell “duodenum”.
135. What part of the digestive tract has no real function?
- rectum
  - cecum
  - pancreas
  - cloaca
136. How many blind pouches does the chicken cecum have?
137. The function of the cecum is similar to that of what body part in humans?
138. What is the last portion of the digestive tract?
139. What takes place in the rectum?

140. Spell “absorption”.
141. Spell “appendix”.
142. What is in the center of the duodenal loop?
143. Spell “cecum”.
144. What neutralizes HCl secreted by the proventriculus and helps break down fat?
145. What secretes pancreatic juice?
146. Spell “pancreas”.
147. What is bile necessary for?
148. What produces bile?
149. Bile is:
- a. dark blue
  - b. dark black
  - c. dark red
  - d. dark green
150. Spell “bile”.
151. Where is bile stored?
152. Food passing into the duodenum causes the gall bladder to empty the bile into the \_\_\_\_\_.
153. Where do the digestive tract, the reproductive tract and the excretory tract all end up?
154. What two important things happen in the cloaca?
155. Spell “cloaca”.
156. Which end of the egg is laid first?

157. The cloaca is important for absorbing what from foodstuffs which will leave the body?
- a. nutrients
  - b. moisture
  - c. protein
  - d. fat
158. In order that the large end will be laid first, the egg from the female's reproductive tract is flipped where?
159. What makes the bird totally unique from all other animals?
160. The feather serves how many functions?
- a. 3
  - b. 4
  - c. 5
  - d. 6
161. What are the functions of feathers?
162. When a bird rearranges its barbules and barbicels, it is called \_\_\_\_\_.
163. Spell "barbule".
164. Spell "barbicel".
165. Birds lose their feathers once a year during a \_\_\_\_\_.
166. Feathers lost during a molt are replaced in about:
- a. 27 days
  - b. 31 days
  - c. 21 days
  - d. 35 days
167. Two types of barbules are the \_\_\_\_\_ barbule and the \_\_\_\_\_ barbule.

## SMALL TURKEY FLOCK MANAGEMENT

1. When turkeys are young, their care must be regular, at least:
  - a. 4 times a day
  - b. 3 times a day
  - c. 2 times a day
  - d. 1 time a day
2. What is the most commonly raised commercial variety of turkeys?
3. Large White hens at 20 weeks of age, commonly weight \_\_\_\_\_ pounds.
4. At what age do Large White toms commonly weigh about 34.4 pounds?
5. At 6 weeks, what is the average live weight, in pounds, for Large White hens?
6. At 17 weeks, what is the average live weight, in pounds, for Large White hens?
7. At 11 weeks, what is the average live weight, in pounds, for Large White hens?
8. At 20 weeks, what is the average live weight, in pounds, for Large White hens?
9. At 3 weeks, what is the average live weight, in pounds, for Large White hens?
10. What is the feed conversion, pounds feed per pound gain, for a 3 week old Large White hen?
11. What is the feed conversion, pounds feed per pound gain, for an 11 week old Large White hen?
12. What is the feed conversion, pounds feed per pound gain, for a 13 week old Large White hen?
13. What is the feed conversion, pounds feed per pound gain, for a 17 week old Large White hen?
14. What is the feed conversion, pounds feed per pounds gain, for a 19 week old Large White hen?
15. At 5 weeks, what is the average live weight, in pounds, for Large White toms?
16. At 11 weeks, what is the average live weight, in pounds, for Large White toms?
17. At 6 weeks, what is the average live weight, in pounds, for Large White toms?

18. At 20 weeks, what is the average live weight, in pounds, for Large White toms?
19. At 3 weeks, what is the average live weight, in pounds, for Large White toms?
20. What is the feed conversion, pounds feed per pounds gain, for a 3 week old Large White tom?
21. What is the feed conversion, pounds feed per pounds gain, for an 11 week old Large White tom?
22. What is the feed conversion, pounds feed per pounds gain, for a 13 week old Large White tom?
23. What is the feed conversion, pounds feed per pounds gain, for a 17 week old Large White tom?
24. What is the feed conversion, pounds feed per pounds gain, for a 19 week old Large White tom?
25. What is the feed conversion, pounds feed per pound gain, for a 24 week old Large White tom?
26. Two diseases that can be a serious problem in turkeys raised among chickens are?
27. Spell "pullorum".
28. Spell "sinusitis".
29. The state given as an example of one that prohibits the sale of turkeys unless dressed in an inspected plant is:
  - a. Illinois
  - b. Iowa
  - c. Missouri
  - d. Indiana
30. Spell "Indiana".
31. From eight weeks to market age, provide turkeys how many square feet of housing space per bird?

32. For poults up to eight weeks of age, provide at least how many square feet of floor space per poult:
- a. 1
  - b.  $1\frac{1}{4}$
  - c.  $1\frac{3}{4}$
  - d.  $1\frac{1}{2}$
33. Spell “ammonium”.
34. Spell “quaternary”.
35. The brooding area should be covered with at least how many inches of litter:
- a. 1
  - b. 2
  - c. 3
  - d. 4
36. List two characteristics of good litter.
37. Spell “absorbent”.
38. List two examples of commonly used litter materials.
39. When using infrared lamp brooders, they should be hung at least:
- a. at least 15 inches above the litter
  - b. at least 19 inches above the litter
  - c. at least 17 inches above the litter
  - d. at least 18 inches above the litter
40. Spell “infrared”.
41. A barrier placed around the brooder to keep poults near the heat is called what?
42. The brooder guard should be used for the first how many days?
43. The brooder guard should be at least:
- a. 8 inches high
  - b. 10 inches high
  - c. 12 inches high
  - d. 1 foot high

44. After the first week, lower the brooder temperature by how many degrees each week until it reaches 70°F?
45. During the first week, at the poults level, provide a uniform brooder temperature of \_\_\_\_\_°F to \_\_\_\_\_°F.
46. A barrier placed around the brooder to prevent drafts from reaching baby poults is called what?
47. Spell “catalytic”.
48. The temperature of the water provided the poults for the first several days should be:
- a. room temperature
  - b. cold
  - c. warm
  - d. lukewarm
49. Spell “dehydration”.
50. Turkeys should not be allowed to run on a range used for chickens in the past \_\_\_\_\_ years.
51. For the first 6 to 8 weeks, poults should be given a starting mash of:
- a. 24% protein
  - b. 28% protein
  - c. 26% protein
  - d. 22% protein
52. After the first 6 to 8 weeks, it is recommended to feed a turkey growing ration of:
- a. 24%
  - b. 22%
  - c. 23%
  - d. 21%
53. List two forms of a turkey growing ration.
54. If whole or cracked grains are used, what should be made available to the birds?
55. Why do some growing feeds contain drugs?
56. What is the main reason to not overfill the feed trough?

57. Adjust the feeders so all birds can eat easily. The proper height is about even with the top of the birds’:

- a. head
- b. neck
- c. thigh
- d. back

58. What type of feeder is often used for turkeys after four weeks of age?

59. How often should waterers be cleaned and refilled with fresh water?

60. Young poults appear to have:

- a. fair vision
- b. poor vision
- c. good vision
- d. no vision

61. What is the minimum foot-candles of light to provide at the feeders and waterers for the first three weeks?

62. Spell “vaccine”.

63. What is the key to maintaining the health of your flock?

64. Spell “diagnosis”.

65. Spell “diagnostic”.



## **BREEDS, VARIETIES and STRAINS**

1. As stated in the study material, list the three Northern European breeds found in the Continental Class.
2. According to the study material, how many varieties of Hamburgs are there?
3. As stated in the study material, list three varieties of Hamburgs.
4. What is the skin color of a Hamburg?
5. What is the color of a Hamburg egg?
6. Hamburg egg size is said to be:
  - a. extra large
  - b. large
  - c. medium
  - d. small
7. Hamburgs are considered to have originated in what country?
8. The weight of a Hamburg cock is:
  - a. 6 pounds
  - b. 5½ pounds
  - c. 5 pounds
  - d. 4½ pounds
9. The weight of a Hamburg hen is:
  - a. 4½ pounds
  - b. 4 pounds
  - c. 3½ pounds
  - d. 3 pounds
10. The weight of a Hamburg cockerel is:
  - a. 4½ pounds
  - b. 4 pounds
  - c. 3½ pounds
  - d. 3 pounds

11. The weight of a Hamburg pullet is:
  - a. 4½ pounds
  - b. 4 pounds
  - c. 3½ pounds
  - d. 3 pounds
12. According to the study material, there are how many varieties of Campines?
13. List the varieties of Campines.
14. A Campine egg is what color?
15. Campines are thought to have originated in what country?
16. Spell “Lakenvelder”.
17. What is the color of Lakenvelder hackle feathers?
18. What is the color of Lakenvelder tail feathers?
19. A Lakenvelder egg is what color?
20. Polish probably originated where?
21. As stated in the study material, there are how many varieties of Polish?
22. Which of the following is not a variety of Polish?
  - a. Bearded White
  - b. Bearded Golden Laced
  - c. Bearded Buff Laced
  - d. Bearded Silver
23. The weight of a Polish cock is:
  - a. 6½ pounds
  - b. 5½ pounds
  - c. 6 pounds
  - d. 5 pounds

24. The weight of a Polish hen is:

- a. 4½ pounds
- b. 5½ pounds
- c. 4 pounds
- d. 5 pounds

25. The weight of a Polish cockerel is:

- a. 6 pounds
- b. 5½ pounds
- c. 4½ pounds
- d. 5 pounds

26. What is the weight of a Polish pullet?

27. What is the skin color of a Polish?

28. What is the color of a Polish egg?

29. As stated in the study material, list the four French breeds found in the Continental Class.

30. As stated in the study material, what are the two varieties of Houdans?

31. What is the skin color of a Houdan?

32. What color is a Houdan egg?

33. The weight of a Houdan cock is:

- a. 9 pounds
- b. 8 pounds
- c. 7 pounds
- d. 6 pounds

34. The weight of a Houdan hen is:

- a. 6 pounds
- b. 5 pounds
- c. 5½ pounds
- d. 6½ pounds

35. The weight of a Houdan cockerel is:
- a. 9 pounds
  - b. 8 pounds
  - c. 7 pounds
  - d. 6 pounds
36. The weight of a Houdan pullet is:
- a. 5½ pounds
  - b. 5 pounds
  - c. 4½ pounds
  - d. 4 pounds
37. Houdans originated in what country?
38. Houdans have how many toes on each foot?
39. Which of the following is not a characteristic of a Houdan?
- a. crest
  - b. rose comb
  - c. beard
  - d. muff
40. Which of the following is not a characteristic of a Faverolle?
- a. beard
  - b. single comb
  - c. rose comb
  - d. feathered legs
41. Spell “Faverolle”.
42. Spell “Houdan”.
43. Faverolles have how many toes on each foot?
44. What color are Crevecoeurs?
45. Spell “Crevecoeur”.
46. What color are La Fleche?
47. Spell “La Fleche”.

48. Large fowl Old English Game belong to what class?
50. As stated in the study material, what are the four Miscellaneous breeds found in the All Other Standard Breeds Class?
51. As stated in the study material, there are how many varieties of Old English Game?
52. As stated in the study material, which of the following is not a variety of Old English Game?
- a. Black
  - b. Red
  - c. White
  - d. Spangled
53. What is the weight of an Old English Game cock?
54. What is the weight of an Old English Game hen?
55. What is the weight of an Old English Game cockerel?
56. What is the weight of an Old English Game pullet?
57. What is the skin color of an Old English Game?
58. What is the color of an Old English Game egg?
59. Old English are associated with what country?
60. Birds that have their comb and wattles removed are said to be \_\_\_\_\_.
61. Spell "feral".
62. As stated in the study material, there are how many varieties of Modern Game?
63. As stated in the study material, which of the following is not a variety of Modern Game?
- a. Brown Red
  - b. Silver Duckwing
  - c. Birchen
  - d. Spangled

64. The weight of a Modern Game cock is:
- 6 pounds
  - 7 pounds
  - 6½ pounds
  - 5½ pounds
65. The weight of a Modern Game hen is:
- 3½ pounds
  - 4½ pounds
  - 5½ pounds
  - 2½ pounds
66. What is the weight of a Modern Game cockerel?
67. What is the weight of a Modern Game pullet?
68. What is the skin color of a Modern Game?
69. What is the color of a Modern Game egg?
70. Where were Modern Games developed?
71. Spell “Great Britain”.
72. As stated in the study material, what is the variety of Malays?
73. The weight of a Malay cock is:
- 10½ pounds
  - 9½ pounds
  - 9 pounds
  - 10 pounds
74. What is the weight of a Malay hen?
75. What is the weight of a Malay cockerel?
76. The weight of a Malay pullet is:
- 5½ pounds
  - 6½ pounds
  - 6 pounds
  - 5 pounds

77. What is the skin color of a Malay?
78. What is the color of a Malay egg?
79. Malays are a very old breed coming from \_\_\_\_\_.
80. Sumatras come from the island of \_\_\_\_\_.
81. What is the weight of a Sumatra cock?
82. What is the weight of a Sumatra hen?
83. The weight of a Sumatra cockerel is:
- a. 4 pounds
  - b. 3 pounds
  - c. 5 pounds
  - d. 6 pounds
84. What is the skin color of a Sumatra?
85. What is the color of a Sumatra egg?
86. Which of the following is not a characteristic of a Sumatra?
- a. multiple spurs
  - b. short tail
  - c. dark purple face
  - d. black plumage
87. Spell "Cubalaya".
88. As stated in the study material, Cubalayas exist in how many varieties?
89. Sultans come from what country?
90. List two characteristics of a Sultan.
91. \_\_\_\_\_ is a genetic modification causing feathers to curl back toward the bird's head instead of lying naturally pointed toward the tail.
92. Spell "frizzling".
93. Naked Necks are often called \_\_\_\_\_.
94. Spell Transylvania".

95. Some people think a Naked Neck is a cross between a \_\_\_\_\_ and a \_\_\_\_\_.

96. Which breed was discovered in South America?

97. Spell "Araucana".

98. Which of the following is not a characteristic of an Araucana?

- a. lays greenish eggs
- b. beard
- c. rumpless
- d. tufts

99. Spell "ornamental".

100. Spell "tufts".



# EGGCYCLOPEDIA

1. Spell “pickled”.
2. Marinated hard-cooked eggs are called?
3. Spell “marinated”.
4. As stated in the study material, what is one of the most popular marinades?
5. An egg-rich, hollow bread baked in a small cup or pan is called?
6. A bacteria-resistant solution of sodium silicate is called?
7. Immersion of the egg for a short time in boiling water to coagulate a thin film of albumen immediately beneath the shell membrane is called?
8. Spell “thermostabilization”.
9. Spell “coagulate”.
10. Prior to World War II, most egg production came from farm flocks of less than
  - a. 350 hens
  - b. 300 hens
  - c. 400 hens
  - d. 250 hens
11. Each laying hen in the United States today produces how many eggs a year?
12. As stated in the study material, what breed dominates today’s egg industry?
13. What color of eggs is favored in the New England region?
14. As stated in the study material, list one breed of chicken that predominates the egg industry of the New England region.
15. In °C, what is a desirable temperature range for laying houses?
16. In °F, what is a desirable temperature range for laying houses?
17. What is the best range of relative humidity for laying houses?
18. A natural occurring loss of feathers common to all birds is \_\_\_\_\_.

19. Mold inhibitors are also called?
20. Spell “antioxidants”.
21. Spell “pharmacological”.
22. In general, about how many pounds of feed are required to produce a dozen eggs:
  - a. 5
  - b. 4
  - c. 3
  - d. 2
23. A Leghorn chicken eats about:
  - a.  $\frac{1}{4}$  pound of feed per day
  - b.  $\frac{1}{2}$  pound of feed per day
  - c.  $\frac{3}{4}$  pound of feed per day
  - d. 1 pound of feed per day
24. Too little Vitamin A in the feed can result in what in the eggs?
25. Pigments in the feed influence?
26. Relative humidity in refrigerated egg holding rooms should not exceed?
27. In °F, what is the temperature range of refrigerated egg holding rooms?
28. Amino acids the human body needs but can't synthesize are called?
29. Spell “synthesize”.
30. List two essential amino acids for the human diet that eggs supply.
32. Spell “leucine”.
33. Spell “methionine”.
34. Spell “phenylalanine”.
35. Spell “threonine”.
36. Spell “tryptophan”.

37. In addition to the nine essential amino acids in an egg, how many other amino acids are in an egg:
- 6
  - 7
  - 8
  - 9
38. A hen less than 1 year old is called a \_\_\_\_\_.
39. An unsweetened, open-faced custard pie served hot or cold is what?
40. What is the classic version of this savory custard pie containing bacon and Swiss cheese called?
41. Spell “quiche”.
42. According to the study material, what bacteria may eggs be contaminated with and be responsible for a type of food poisoning?
43. Spell “Salmonella”.
44. For summer outings, what is the recommended temperature to keep cold foods?
45. For summer outings, what is the recommended temperature to keep hot foods?
46. RDA stands for?
47. RDI stands for?
48. The RDI for protein for everyone over 4 years of age is:
- 20 grams
  - 30 grams
  - 40 grams
  - 50 grams
49. The RDI for protein for everyone under 4 years of age is:
- 15 grams
  - 14 grams
  - 13 grams
  - 12 grams
50. Eggs having a broken shell or a crack in the shell, but shell membranes are intact are called?

51. Eggs having adhering dirt, prominent or conspicuous stain or moderate stains covering more than a quarter of the shell surface are called?
52. Eggs exhibiting rot, blood rings, green whites, stuck yolks or embryo chicks are called?
53. Eggs that are moldy, musty or sour are called?
54. Eggs having a crack or break in both shell and shell membranes so that the contents are leaking are called?
55. Eggs that are leakers, inedibles and any egg that has been cooked, frozen or contaminated are called?
56. EPIA stands for?
57. An egg that is hard-cooked then roasted in the oven until the shell becomes brown is called a?
58. Salmonella is a type of \_\_\_\_\_ which can cause food poisoning if ingested in large numbers.
59. Almost all of the salmonellosis outbreaks have been the result of what two things?
60. *Salmonella enteritidis* will not grow at temperatures below what?
61. *Salmonella enteritidis* is killed at what temperature or higher?
62. As stated in the study material, list two ways illness from *Salmonella enteritidis* can be avoided.
63. List two of the functions eggs fill for sauces.
64. Spell “desserts”.
65. What is the outer covering of the egg?
66. What is the egg’s first line of defense against bacterial contamination?
67. What accounts for about 9 to 12% of the egg’s total weight?
68. Calcium carbonate makes up about what % of the egg shell?
69. Which vitamin influences shell strength?
70. As the hen ages, egg size \_\_\_\_\_.

71. What is the protective coating covering the egg shell called?
72. What is the major factor influencing the size of an egg?
73. What is the second major factor influencing the size of an egg?
74. As stated in the study material, list two environmental factors that lower egg weights.
75. Spell “environmental”.
76. Most recipes for baked dishes such as cakes are based on what size egg?
77. How many whole Jumbo eggs does it take to make one cup?
78. How many whole X-Large eggs does it take to make one cup?
79. How many whole Large eggs does it take to make one cup?
80. How many whole Medium eggs does it take to make one cup?
81. How many whole Small eggs does it take to make one cup?
82. How many Jumbo egg whites does it take to make one cup?
83. How many Jumbo egg yolks does it take to make one cup?
84. How many X-Large egg whites does it take to make one cup?
85. How many X-Large egg yolks does it take to make one cup?
86. How many Large egg whites does it take to make one cup?
87. How many Large egg yolks does it take to make one cup?
88. How many Medium egg whites does it take to make one cup?
89. How many Medium egg yolks does it take to make one cup?
90. How many Small egg whites does it take to make one cup?
91. How many Small egg yolks does it take to make one cup?
92. How many Small eggs does it take to equal 4 Large eggs?
93. How many Medium eggs does it take to equal 5 Large eggs?

94. How many Small eggs does it take to equal 5 Large eggs?
95. How many X-Large eggs does it take to equal 6 Large eggs?
96. How many Jumbo egg does it take to equal 5 Large eggs?
97. Spell “souffle”.
98. To reach its maximum height, a souffle needs to what?
99. For the purist, a cold soufflé is more accurately known as what?
100. Custard gels to which beaten egg whites are added are called?
- a. snows
  - b. sponges
  - c. chiffons
  - d. Bavarians
101. Custard gels made with egg yolks to which both beaten egg whites and whipped cream are added are called?
- a. snows
  - b. sponges
  - c. chiffons
  - d. Bavarians
102. True sponge cakes contain neither \_\_\_\_\_ nor \_\_\_\_\_.
103. Unlike an angel food cake, a sponge cake may be made with what?
104. What is the technical term for eggs held under refrigeration for more than 30 days?
105. Spell “fluctuations”.
106. If left outside the refrigerator, eggs will age more in one day at room temperature than they will in how many weeks in the refrigerator?
107. Hard-cooked eggs should be used how soon after they are cooked?
108. Spell “dissipates”.
109. When storing hard-cooked eggs, you may notice a “gassy” odor in your refrigerator. What causes this odor?
110. What is a custard mixture poured over layers of bread and cheese and baked called?

111. In 1945, the average hen laid:

- a. 150 eggs per year
- b. 151 eggs per year
- c. 152 eggs per year
- d. 153 eggs per year

112. Today the average hen lays between:

- a. 300-375 eggs per year
- b. 325-350 eggs per year
- c. 275-325 eggs per year
- d. 250-300 eggs per year

113. As stated in the study material, what is an example of an unnatural predator?

114. Spell “unnatural”.

115. Spell “cannibalistic”.

106. Spell “cauterizes”.

107. What is the process of cutting off part of the upper beak or both lower and upper beaks called?

108. What is the technique of blending uncooked eggs into hot mixtures called?

109. Tempering helps to prevent eggs from \_\_\_\_\_.

110. As stated in the study material, list two cosmetic uses of egg yolks.

111. As stated in the study material, list a cosmetic use of egg white.

112. Spell “microorganisms”.

113. Spell “pharmaceutical”.

114. \_\_\_\_\_ are used as an aid in the preservation of bull semen for artificial insemination.

115. RDA is an abbreviation for what?

116. RDI is an abbreviation for what?

117. DRV is an abbreviation for what?

118. DV is an abbreviation for what?
119. As stated in the study material, what vitamin is not found in eggs?
120. An egg contains varying amounts of:
- a. 13 vitamins
  - b. 14 vitamins
  - c. 15 vitamins
  - d. 16 vitamins
121. A *bain marie* is also known as what?
122. The yolk makes up about \_\_\_\_\_ % of the liquid weight of the egg.
123. Where is all the fat in the egg contained?
124. Egg yolks are one of the few foods naturally containing what vitamin?
125. Where are Vitamins A, D, and E found in the egg?
126. Where is zinc found in the egg?
127. As stated in the study material, list three minerals found in an egg yolk.
128. Spell “manganese”.
129. Spell “synchronized”.
130. What is the site of embryo formation in fertilized eggs?
131. Spell “embryo”.
132. What part of the egg is responsible for its emulsifying properties?
133. Spell “emulsifying”.



## RAISING YOUR HOME CHICKEN FLOCK

1. Spell “guineas”.
2. What color are White Leghorn eggs?
3. Approximately how many eggs do White Leghorn strains produce each year?
4. What color are the eggs produced by sex-linked hens?
5. Approximately how many eggs do sex-linked hens produce per year?
6. What is a yearling hen?
7. Started pullets can be bought at what age?
8. Floor space in a poultry house should allow how many square feet per bird for layers?
  - a. 1
  - b. 2
  - c. 3
  - d. 4
9. Floor space in a poultry house should allow how many square feet per bird for broilers and bantams?
  - a. 1
  - b. 2
  - c. 3
  - d. 4
10. Chickens for egg production should have access to nests starting at what age?
11. As stated in the study material, what are two types of nests?
12. What size (in inches) individual nest should a Leghorn have?
13. Provide one individual nest for every:
  - a. 1 hen in the flock
  - b. 2 hens in the flock
  - c. 3 hens in the flock
  - d. 4 hens in the flock

14. A 2' x 6' colony nest is adequate for:
- 60 hens
  - 50 hens
  - 40 hens
  - 30 hens
15. How many inches of roost space per bird should be allowed?
16. A 40 watt bulb provides adequate light for how many square feet of floor space?
17. How many hours of light is effective in maintaining egg production throughout the year?
18. Broilers and roasters can be grown with only how many hours of light per day?
19. As stated in the study material, what are two major problems with cage rearing hens?
20. What should the brooding temperature (°F) be from one day to one week?
21. What should the brooding temperature (°F) be from 1 week to 2 weeks?
22. What should the brooding temperature (°F) be from 2 weeks to 3 weeks?
23. What should the brooding temperature (°F) be from 3 weeks to 4 weeks?
24. What should the brooding temperature (°F) be from 4 weeks to 5 weeks?
25. What is the comfort zone temperature (°F) for layers?
26. Feed represents about:
- $\frac{1}{4}$  of the cost of raising a chicken
  - $\frac{1}{3}$  of the cost of raising a chicken
  - $\frac{1}{2}$  of the cost of raising a chicken
  - $\frac{2}{3}$  of the cost of raising a chicken
27. As stated in the study material, what are the three different types of feed programs commercial dealers usually have?
28. When part of the nutrient requirements for layers are expected to be met by whole grains, extra attention should be given to supplying an adequate amount of what mineral?
29. NPIP is an abbreviation for what?

30. Spell “pullorum”.
31. As stated in the study material, what are the most common types of diseases in chickens?
32. Leukosis is also called what?
33. Spell “paralysis”.
34. What is the single most common cause of death in young birds?
35. Spell “coccidiosis”.
36. Spell “hemorrhage”.
37. What is the cause of coccidiosis?
38. Spell “coccidiostat”.
39. Wattles turning to scabs is a symptom of what disease?
40. Twisted neck and walking backward is a symptom of what disease?
41. As stated in the study material, list two types of mites.
42. Chiggers are an example of what type of parasite?
43. Worms are an example of what type of parasite?
44. Hair-like worms in the crop and upper intestine are symptoms of:
  - a. large roundworms
  - b. capillary worms
  - c. cecal worms
  - d. tapeworms
45. Long, yellow-white worms in the intestine are symptoms of:
  - a. large roundworms
  - b. gapeworms
  - c. tapeworms
  - d. cecal worms

46. Short worms in the ceca are symptoms of:

- a. large roundworms
- b. capillary worms
- c. tapeworms
- d. cecal worms

47. Long, white, flat, segmented worms in the intestine are symptoms of:

- a. gapeworms
- b. capillary worms
- c. large roundworms
- d. tapeworms

48. Red, forked worms in the trachea are symptoms of:

- a. tapeworms
- b. gapeworms
- c. capillary worms
- d. roundworms

49. Spell “trachea”.

50. Spell “diarrhea”.

51. Spell “ceca”.

52. As stated in the study material, waterers should be cleaned how often?

53. Lack of cleanliness is often the cause of poultry \_\_\_\_\_.

54. Before starting baby chicks or housing layers, the house should be completely \_\_\_\_\_ and \_\_\_\_\_.

55. Litter should be kept \_\_\_\_\_ and \_\_\_\_\_.

56. List three of the sanitation measures stated in the study material.

57. Spell “incinerating”.

58. Management practices that prevent the entrance of germs and disease into the flock and into neighboring flocks are referred to as \_\_\_\_\_.

59. List three of the biosecurity measures stated in the study material.

60. Spell “debris”.

61. Spell “veterinarians”.
62. Spell “cauterize”.
63. When beak trimming and cauterizing is not possible, in most cases the most that can be removed without severe bleeding is:
- a.  $\frac{1}{8}$
  - b.  $\frac{1}{3}$
  - c.  $\frac{1}{2}$
  - d.  $\frac{1}{4}$
64. Beak trimming is the best way to control \_\_\_\_\_.
65. Spell “cannibalism”.
66. Where are the jugular veins located?
67. Spell “jugular”.
68. Immersing the chicken in hot water so that feathers are easily removed is called \_\_\_\_\_.
69. What should the scald water temperatures ( $^{\circ}\text{F}$ ) for broilers, roasters and capons be?
70. What should the scald water temperatures ( $^{\circ}\text{C}$ ) for broilers, roasters and capons be?
71. What should the scald water temperatures ( $^{\circ}\text{F}$ ) for older chickens, such as spent layers, be?
72. What should the scald water temperatures ( $^{\circ}\text{C}$ ) for older chickens, such as spent layers, be?
73. Approximately how long should you scald for adequate feather removal?
- a. 2  $\frac{1}{2}$  minutes
  - b. 2 minutes
  - c. 1  $\frac{1}{2}$  minutes
  - d. 60 seconds
74. Spell “viscera”.
75. Spell “eviscerated”.
76. How much chlorine bleach should be added to the ice water used in home processing?

77. What is called nature's perfect package?
78. As stated in the study material, list two of the important factors in producing sound, clean eggs.
79. Once gathered, eggs should be \_\_\_\_\_.
80. As stated in the study material, what are two reasons home flock products often command a premium price?
81. Spell "residues".
82. Spell "pesticides".
83. Spell "herbicides".
84. There are two basic choices in the type of poultry to keep, a strain bred primarily for \_\_\_\_\_ production or one bred for \_\_\_\_\_ production.
85. Material such as shavings or sawdust spread on the chicken house floor is called \_\_\_\_\_.
86. Spell "capon".
87. To keep feed from being spilled out, a feeder must have a:
- a. reel
  - b. lip
  - c. grill
  - d. handle
88. Give young pullets the opportunity to find nests:
- a. 1 week before they start to lay
  - b. 2 weeks before they start to lay
  - c. 1 to 3 weeks before they start to lay
  - d. 1 to 2 weeks before they start to lay
89. The amount of nesting material you should have in a nest is:
- a. ½ to 1 inch
  - b. 1 to ½ inches
  - c. 1 to 2 inches
  - d. 1 ½ to 2 ½ inches
90. In feet, what should be the size of a colony nest for 50 hens?

91. Spell “reputable”.
92. Spell “contagious”.
93. Coccidia attack different parts of the \_\_\_\_\_ .
94. What is the parasite that causes red, pimple-like irritations.
95. What are the large, yellowish transparent insects on the skin?

## FACT SHEETS

### CONTRIBUTIONS OF POULTRY TO THE DEVELOPMENT OF SCIENCE

1. What is the study of bacteria called?
2. Spell “bacteriology”.
3. Spell “anthrax”.
4. Who developed a vaccine against anthrax?
5. What year was Louis Pasteur born?
6. What year did Louis Pasteur die?
7. What reason did Pasteur suggest as why chickens did not get anthrax?
8. In °C, what is the body temperature of a chicken?
9. Fowl cholera is caused by a \_\_\_\_\_.
10. Spell “bacterium”.
11. Spell “attenuated”.
12. Spell “tetanus”.
13. Who provided the first scientific observation of the social behavior in animals in 1935?
14. What year was T. Schjelderup-Ebbe born?
  - a. 1892
  - b. 1893
  - c. 1894
  - d. 1895
15. What year did T. Schjelderup-Ebbe die?
16. What is another term for the ranking behavior that exists in a group of hens?
17. Who received the Nobel Prize for demonstrating *imprinting* with ducks?



18. What year was Konrad Lorenz born?
19. What year did Konrad Lorenz die?
20. Spell “synthesize”.
21. Spell “deficiencies”.
22. What is the study of the formation and development of embryos called?
23. Who pioneered the study of embryological development using the chick embryo?
24. What year was Hieronymous Fabricius born?
25. What year did Hieronymous Fabricius die?
26. What is the study of hormones and hormone-producing glands called?
27. Spell “endocrinology”.
28. Who has been called the father of endocrinology?
29. What year was Arnold A. Berthold born?
30. What year did Arnold A. Berthold die?
31. What is a capon?
32. Who is known as the father of genetics?
33. On what did Johann Gregor Mendel conduct his pioneering genetic research?
34. What year was Johann Gregor Mendel born?
35. What year did Johann Gregor Mendel die?
36. What was Johann Gregor Mendel’s “occupation”?
37. Who was the first to demonstrate that Mendel’s laws applied to animals?
38. What year did William Bateson demonstrate Mendel’s laws applied to animals?
39. What year was William Bateson born?
40. What year did William Bateson die?

41. What specie of animals was William Bateson working with when he demonstrated that Mendel's laws applied to animals?
42. Which is dominant, rose combs or single combs?
43. Which is dominant, single combs or pea combs?
44. What is the study of organism raised in germ free conditions called?
45. Who address the French Academy of Sciences in 1885 on the topic of "germ-free hosts"?
46. What are the microscopic and specialized organisms found in an animal's digestive tract called?
47. What is the study of mechanisms be which organisms resist and overcome infection and disease called?
48. Spell "immunology".
49. Who found that lymphocytes were responsible for antibody production?
50. What year did Bruce Glick find that lymphocytes were responsible for antibody production?
51. Spell "lymphocytes".
52. What is a lymphocyte?
53. What did the lymphocytes found to be responsible for antibody production originating from the bursa become known as?
54. What is the small, sack-like structure found in the cloaca of young chickens called?
55. What is the study of viruses and viral diseases called?
56. Spell "virology".
57. Who discovered that a virus caused cancer in chickens?
58. What year did Francis Peyton Rous discover that a virus caused cancer in chickens?
59. What year was Francis Peyton Rous born?
60. What year did Francis Peyton Rous die?

61. What year did Francis Peyton Rous win the Nobel Prize for his work?
62. Who developed a vaccine against the Marek's disease virus?
63. What year did A. Churchill develop a vaccine against Marek's disease virus?
64. Spell "neoplastic".
65. Who discovered that hens fed a diet of polished rice would become paralyzed?
66. In what year did Christian Eijkman discover that hens fed a diet of polished rice would become paralyzed?
67. What was Christian Eijkman's occupation?
68. What caused the hens, paralyzed by being fed a diet of polished rice, to recover?
69. Spell "Beriberi".
70. Thiamine is another name for what vitamin?
  - a. B<sub>1</sub>
  - b. B<sub>2</sub>
  - c. B<sub>6</sub>
  - d. B<sub>12</sub>
71. Who found that chicks fed diets very low in fat developed an illness that caused them to hemorrhage?
72. What year did Henrik Dam find that chicks fed diets very low in fat developed an illness that caused them to hemorrhage?
73. What year was Henrik Dam born?
74. What year did Henrik Dam die?
75. In what year did Henrik Dam discover that the substance needed for good blood clotting was found in green leaves and certain vegetables?
76. Spell "coagulation".

## EMBRYOLOGY

1. How many layers of a whitish watery substance with protein are found in the albumen?
2. What is the organ in the embryo of birds which functions as a respiratory organ in the developing embryo?
3. What is the thin, membranous, fluid-filled sac surrounding the embryo?
4. Define, “avian”.
5. Define, “bacteria”.
6. What is the collective mass of cells produced by the splitting of a fertilized ovum from which the embryo develops?
7. What is the germinal spot on the ovum from which the blastoderm develops after the ovum is fertilized by the sperm?
8. What is the verb definition for brood?
9. What are you doing when you observing the shell and the contents of the egg through the shell by holding the egg up to a bright light that is focused on and behind the egg shell?
10. What is the function of the chalazae?
11. What is the membrane enveloping the embryo, external to and enclosing the amnion?
12. Define, “dorsal”.
13. What is the chicken tooth also called?
14. The egg tooth usually dries and falls off within how many hours after the chick hatches?
15. What is the study of the formation and development of plant and animal embryos?
16. Define, “evaporation”.
17. As stated in the study material, define, “fertile”.
18. As stated in the study material, define, “fertilized”.

19. What is the element in the chromosome of the germ plasm that transmits hereditary characteristics?
20. What is a thin, soft, pliable sheet or layer of tissue covering an organ called?
21. Define, “ovum”.
22. Define, “pipping”.
23. What are the minute openings in the shell of an egg through which gases are exchanged called?
24. How is relative humidity expressed?
25. What is the secretion of the reproductive organs of the male called?
26. What are mature male germ cells called?
27. What is one mature germ cell of the male called?
28. What is a container for hatching chicks that does not have mechanical ventilation called?
29. What is a fat or water soluble substance necessary, in very small amounts, to allow for normal growth and maintenance of life?
30. What is a device used to measure the amount of moisture or water vapor in the air?
31. What is the chick’s food during its pre-hatching life?
32. What is the first food for the chick after it emerges from the shell?
33. Spell, “avian”.
34. Spell, “bacteria”.
35. Spell, “blastoderm”.
36. Spell, “brood”.
37. Spell, “dorsal”.
38. Spell, “embryo”.
39. Spell, “egg”.

40. Spell, “embryology”.
41. Spell, “evaporation”.
42. Spell, “follicle”.
43. Spell, “humidity”.
44. Spell, “incubator”.
45. Spell, “membrane”.
46. Spell, “peristaltic”.
47. Spell, “pipping”.
48. Spell, “protein”.
49. Spell, “pituitary”.
50. Spell, “spermatozoa”.
51. Spell, “testicle”.
52. Spell, “vitamin”.
53. Spell, “thermometer”.
54. Spell, “yolk”.
55. Spell, “microscopic”.
56. Spell, “vascular”.
57. Spell, “reproductive”.
58. Spell, “impregnated”.
59. Spell, “Pennsylvania”.