

**2023 National FFA Poultry Evaluation CDE
Written Examination KEY**

1. The carry of muscling in market broilers is determined by how well the breast meat width carries from the _____ to the end of the keel bone.
 - a. middle of the breast
 - b. front of the tibia
 - c. **points of wing attachment**
 - d. point of sacral attachment

Reference: B-4

AFNR Standard: FPP.03.01.03.b. Examine and evaluate inspection and harvesting of animals using regulatory agency approved or industry-approved techniques.

2. While candling an egg, an individual observes very small blood spots that do not aggregate to more than 1/8 inch in diameter. This egg would be assigned a USDA Grade of _____.
 - a. AA
 - b. A
 - c. **B**
 - d. Loss

Reference: B-27

AFNR Standard: FPP.03.01.01.a. Summarize characteristics of quality and yield grades of food products.

3. While evaluating exterior shell quality, slight/moderate, localized stains covering less than 1/32 of the shell are observed. Which USDA Grade should be assigned to this egg?
 - a. A
 - b. AA
 - c. **B**
 - d. C

Reference: B-35

4. On Leghorn-strain pullet farms, birds are raised from hatchling to approximately how many weeks age?
 - a. 6-7
 - b. 9-12
 - c. 20-24
 - d. **16-17**

Reference: C-2

AFNR Standard: AS.01.02. Assess and select animal production methods for use in animal systems based upon their effectiveness and impacts.

5. For a typical egg laying operation, the production goals are to produce an average of one dozen table eggs for every 3.0 to 3.5 pounds of feed provided, and to gather how many eggs per hen housed during the 52 to 80-week laying period?
- a. 200-250
 - b. 220-275
 - c. **240-350**
 - d. 320-355

Reference: C-3

AFNR Standard: AS.01.02. Assess and select animal production methods for use in animal systems based upon their effectiveness and impacts.

6. Which following statement is most true regarding turkey breeders?
- a. **Turkey breeders require more labor than do broiler breeders, but payments are higher.**
 - b. Turkey breeder hens naturally mate and do not require artificial insemination.
 - c. Tom and hens are housed together to ensure fertility.
 - d. None of the above are true.

Reference: C-5

AFNR Standard: AS.06.02. Apply principles of comparative anatomy and physiology to uses within various animal systems.

7. Which of the following is true relating to the need for engineer in the poultry industry?
- a. **The efforts of agriculturally oriented engineers in the poultry industry have advanced toward complete automation as compared to any other livestock enterprise.**
 - b. Additional innovation to increase automation and reduce potential production costs is probably not needed in the poultry industry.
 - c. The prohibitive cost of automation has apparently limited its application in the poultry industry.
 - d. None of the above are true.

Reference: C-8

AFNR Standard: AS.07.01. Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.

8. Which of the following are unique characteristics poultry possess when compared to other forms of livestock?
- a. Poultry has a denser skeleton with heavier bones
 - b. Poultry has a lower respiration rate
 - c. **Poultry has a higher body temperature**
 - d. Poultry has a lower pulse rate

Reference: C-13

AFNR Standard: AS.06.02. Apply principles of comparative anatomy and physiology to uses within various animal systems.

9. A wing's secondaries form the _____.
- a. **wing-bay**
 - b. wing-bow
 - c. wing-bar
 - d. wing-front

Reference: C-15

AFNR Standard: AS.06.02. Apply principles of comparative anatomy and physiology to uses within various animal systems.

10. Increased embryo mortality in incubating chicken usually occurs
- a. **around day 4 and an even larger percentage at day 18.**
 - b. with the largest percentage on day 14.
 - c. with the largest mortality, early on day 4.
 - d. near hatching on day 24.

Reference: C-35

AFNR Standard: AS.06.02.02.a. Examine the basic functions of animal cells in animal growth and reproduction.

11. Vent pasting in young chicks and poults is a major gross symptom of _____?
- a. Cholera
 - b. Aspergillosis
 - c. Newcastle
 - d. **Pullorum**

Reference: C-53

AFNR Standard: AS.07.01. Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.

12. If a disease condition should occur, a _____ is very important in the investigation to determine of the cause of a disease condition in a flock. This includes such information as age of the birds, source, nutritional programs, lighting, housing, disease signs, when the disease condition was first observed, mortality rate (death loss), when mortality occurred and frequency, morbidity (frequency of birds displaying signs), vaccination programs, etc.
- a. blood test
 - b. laboratory analysis
 - c. veterinarian consultation
 - d. **flock history**

Reference: C-51, C-52

AFNR Standard: AS.07.01. Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.

13. Disadvantages and risks relating to high-rise water storage systems include polluted drainage as the manure pile may be turned into a slurry and wash away from the storage area, serious fly infestation can develop, and excessive ammonia may form. A common cause of these conditions is/are.
- High winds
 - Earthquakes or fault lines
 - Excessive salt in diet or excessive protein
 - Leaking waters or rainfall or roof runoff**

Reference: C-58, C-59

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

14. Regarding poultry waste management and the storage of broiler litter, research performed on roofed storage systems shows that this type of system loses what percentage of ammonia nitrogen after two months, assuming no airtight cover is used.
- 15%
 - 30%
 - 10%**
 - 5%

Reference: C-60

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

15. Biogas production is the conversion of manure into a combustible gas. The gas consists primarily of methane. What is the chemical equation for methane?
- H₂O
 - CO₃
 - CH₄**
 - H₂S

Reference: C-63

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

16. Daily manure production by 100 six-week-old broilers consuming 26 to 30 pounds feed per day may be expected to produce how much manure each day?
- 30 to 35 pounds**
 - 26 to 30 pounds
 - 50 to 60 pounds
 - 13 to 15 pounds

Reference: C-65

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

17. One of the primary goals of ventilation is for temperature control and moisture removal. Two other goals are removal of:
- a. Carbon monoxide and methane gases
 - b. Disease organisms and carbon monoxide
 - c. **Carbon dioxide and heading off buildup of ammonia**
 - d. None of the above

Reference: C-68

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

18. High humidity is most often a _____ problem and can affect bird health.
- a. Summer
 - b. **winter**
 - c. spring
 - d. fall

Reference: C-68

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

19. Used alone, the wind-chill effect of tunnel ventilation becomes less pronounced as air temperatures rise much above 90°F, and above 100°F the air begins to _____ the birds.
- a. **to warm instead of cool**
 - b. become less effective for
 - c. only flow along the ceiling of the house not benefiting
 - d. none of the above

Reference: C-74

AFNR Standard: AS.06.03.02.c. Choose, implement and evaluate sustainable and efficient procedures (e.g., selection, housing, nutrition and management) to produce consistently high-quality animals that are well suited for their intended purposes.

20. Which civilization or group of people are recognized as having created an entire poultry industry utilizing hybrid vigor and caponizing along with keeping chickens for agriculture purposes. These practices of keeping poultry were later lost until the 1800's.
- a. The Saxons
 - b. The Greeks
 - c. **The Romans**
 - d. The Babylonians

Reference: C-78, C-79

AFNR Standard: FPP.03.01.03.b. Examine and evaluate inspection and harvesting of animals using regulatory agency approved or industry-approved techniques.

21. Comb type in chickens is controlled by two different genes on two separate chromosomes. The first gene is the rose comb gene (R), and the second gene is the _____.
- a. **pea comb gene (P)**
 - b. single comb gene (S)
 - c. walnut comb gene (W)
 - d. naked comb, naked neck gene (Kn)

Reference: C-82

AFNR Standard: AS.06.02.03.c. Apply knowledge of anatomical and physiological characteristics of animals to make production and management decisions.

22. Electrolytes are elements that have either a positive or negative electrical charge in solution. Which of the following is considered to have a negative electrical charge in solution?
- a. Salt
 - b. Sodium
 - c. Potassium
 - d. **Chloride**

Reference: C-85

AFNR Standard: AS.06.02.01.c. Correlate the functions of animal cell structures to animal growth, development, health and reproduction.

23. Which feedstuff might be used to increase omega-3 fatty acid content of eggs?
- a. Soybean oil meal 48% crude protein.
 - b. Ground corn
 - c. **Linseed meal**
 - d. Cassava flour

Reference: C-89

AFNR Standard: AS.06.03.02.c. Choose, implement and evaluate sustainable and efficient procedures (e.g., selection, housing, nutrition and management) to produce consistently high-quality animals that are well suited for their intended purposes.

24. According to the Processing Poultry Products sections in the Poultry Science Manual, what may be a representative statement regarding market meat chicken?
- a. Most can range from 28 to 60+ days with weights of 3.6 pounds to over 7.5 pounds.
 - b. Chickens are marketed in a variety of market ages/weights depending on the end product.
 - c. The heavier birds are used for in further processing.
 - d. **All of the above**

Reference: PPP-1

AFNR Standard: FPP.03.01.03.b. Examine and evaluate inspection and harvesting of animals using regulatory agency approved or industry-approved techniques.

25. Which statement would be true as stated in the Marketing Poultry Product section of the Poultry Science Manual relating to rotisserie-roasted chicken?
- Market for this product increased in the mid 1990's
 - The product appeared as a revitalized product
 - The product did not cannibalize existing markets.
 - All of the above are correct.**

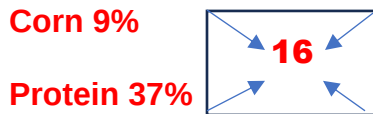
Reference: MPP-6

AFNR Standard: FPP.03.01.03.b. Examine and evaluate inspection and harvesting of animals using regulatory agency approved or industry-approved techniques.

26. How many pounds of corn (9.00% crude protein) and pounds of protein concentrate (37.00% crude protein) are required to formulate 100 lb. of 16.00% crude protein mix?
- 75 lb. protein concentrate, 25 lb. corn
 - 21 lb. corn, 7 lb. protein concentrate
 - 75 lb. corn, 25 lb. protein concentrate**
 - 84 lb. corn, 16 lb. protein concentrate

Calculations:

Corn 9%



21 (37-16) parts of corn

Protein 37%

7 (16-9) parts of protein concentrate

Total Parts in Mixture = 28

Corn $21/28 = 75\%$ $75\% \times 100 = 75$ pounds of corn

Protein $7/28 = 25\%$ $25\% \times 100 = 25$ pounds of protein

Reference: C-95

AFNR Standard: AS.06.03.02.c. Choose, implement and evaluate sustainable and efficient procedures (e.g., selection, housing, nutrition and management) to produce consistently high-quality animals that are well suited for their intended purposes.

27. If the recommended application rate for poultry litter is 4 tons per acre. How many tons of poultry litter will a producer need for 30 acres?
- 7.5 tons
 - 30 tons
 - 60 tons
 - 120 tons**

Calculations: 30 acres x 4 tons/acre = 120 tons

Reference: C-61

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

Nutrient Content in Various Types of Poultry Wastes				
<i>1 ton = 2,000 pounds</i>				
Nutrient	Broiler Litter (pound/ton)	Layer litter High Rise System (pound/ton)	Layer litter Lagoon System (pound/1,000 gallon)	
			Liquid	Sludge
Nitrogen (N)	63	40	4	32
Phosphate (P ₂ O ₅)	55	50	2	46
Potash (K ₂ O)	47	40	3	46

28. Using the chart above, approximately how many pounds of Nitrogen (N) can a broiler producer anticipate, if the broilers produce 40 tons of poultry waste as litter?

- a. 310 pounds
- b. 1,500 pounds
- c. **2,520 pounds**
- d. 5,040 pounds

Calculations: 40 tons x 63 pounds/ton = 2,520 pounds

Reference: C-61

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

29. Using the chart above, approximately how many tons of Phosphate (P₂O₅) can a Layer litter High Rise System producer anticipate, if the layers produce 80 tons of poultry waste as litter?

- a. **2 tons**
- b. 3 tons
- c. 6 tons
- d. 8 tons

Calculations:

80 tons x 50 pounds/ton = 4,000 pounds

1 ton = 2,000 pounds

4,000 pounds/2,000 pounds = 2 tons

Reference: C-61

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

30. Using the chart above, approximately how many pounds of Potash (K₂O) can a producer with a Layer Litter Lagoon system anticipate in 15,000 gallons liquid litter?

- a. 5 pounds
- b. 10 pounds
- c. 15 pounds
- d. **45 pounds**

Calculations:

15,000 gallon of liquid. Potash is 3 pound per 1000 gallon of liquid
(15000/1000) * 3 lb = 45 lb

Reference: C-61

AFNR Standard: AS.08.01. Design and implement methods to reduce the effects of animal production on the environment.

Answer Key

1. C
2. C
3. C
4. D
5. C
6. A
7. A
8. C
9. A
10. A
11. D
12. D
13. D
14. C
15. C
16. A
17. C
18. B
19. A
20. C
21. A
22. D
23. C
24. D
25. D
26. C
27. D
28. C
29. A
30. D