

**National FFA Poultry Evaluation Career Development Event
2013 Written Examination w/ Answers & POSC Manual (6th ed.) Page Numbers**

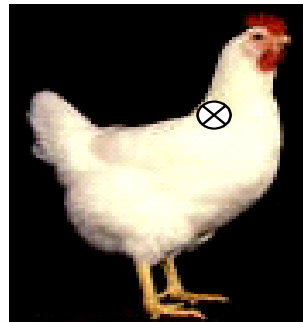
Directions: Please read each item carefully. Using a No. 2 pencil, bubble the letter on your scan sheet that corresponds with the correct answer.

- 1) Poultry meat production, processing, and distribution have undergone many changes in the past 50 years as a result of consumer demand for poultry products. In 1962, the National Chicken Council (NCC) estimated 83% of the chicken marketed in the United States was sold as whole birds. In 2015, the NCC estimates that only _____ of the market will be whole birds.
- a. 2%
 - b. 11%
 - c. 49%
 - d. 40%

B C-107

- 2) In the following image, the area labeled with a circled X is called the _____.

- a. neck
- b. back
- c. saddle
- d. cape



D C-15

- 3) Temperature of scald water can vary depending on how the final product will be used. Parameters for scalding will vary depending on the systems used. Fast food restaurants commonly use birds that have been hard-scalded in which temperature range?
- a. 120°F to 136°F
 - b. 123°F to 130°F
 - c. 132°F to 136°F
 - d. 138°F to 140°F

D C-109

- 4) Signs of perosis include swelling of the hock joints, slipped tendons, and severe shortening of long bones. Insufficient amounts of the trace minerals _____ and _____ produce a perosis-type condition in birds.
- a. zinc; manganese
 - b. copper; zinc
 - c. niacin; choline
 - d. magnesium; zylene

A C-53

- 5) _____ were domesticated by the Aztecs in Mexico more than 2000 years ago; on their arrival in Europe, they were called _____ similar to other exotic birds entering Europe in the 16th century.
- a. *Numida meleagris*; guinea fowl
 - b. *Gallus gallus*; jungle fowl
 - c. *Meleagris gallopavo*; turkeys
 - d. *Columbia livia*; pigeons

C C-14 & C-91

- 6) Poultry operations strive to reach feed efficiency goals of ____ and ____ pounds of feed per pound of body weight for broiler and turkey operations, respectively.
- a. 2; 2.5
 - b. 3; 3.5
 - c. 4; 4.5
 - d. 5; 5.5

A C-4 & C-5

- 7) The pectoral muscles account for _____ to _____ of a bird's total weight.
- a. 10 to 15%
 - b. 15 to 20%
 - c. 20 to 25%
 - d. 25 to 30%

B C-16

- 8) Approximately 95% of _____ production and 99% of _____ production occurs under a contract system.
- a. broiler breeder; table egg
 - b. broiler; turkey
 - c. table egg; broiler breeder
 - d. turkey; broiler

D C-4 & C-5

- 9) Individuals who enter a career in poultry _____ are likely to assist in and direct further development of poultry breeding programs.
- a. genetics
 - b. nutrition
 - c. production
 - d. pharmaceuticals

A C-7

- 10) _____ determine(s) to what temperature air can be cooled by the evaporation of water.
- a. Wet bulb temperature
 - b. Dry bulb temperature
 - c. Relative humidity
 - d. Thermostatic controls

A C-77

- 11) Expectoration of blood stained mucus on a bird's wings and breast feathers, resulting from the bird trying to clear its windpipe, may indicate presence of the disease _____.
- a. infectious laryngotracheitis
 - b. infectious bronchitis
 - c. infectious coryza
 - d. infectious bursal disease

A C-49

12) Proper cleaning is especially critical in poultry production. _____ are effective against bacteria and partially effective against fungi and viruses as a water sanitizing agent.

- a. quaternary ammonium compounds
- b. cresol compounds
- c. hypochlorites
- d. iodophors

A C-54 & C-55

13) An anti-microbial wash or rinse is applied on the surface of eviscerated carcasses to reduce or inactivate microbial organisms, specifically, *Salmonella* cells. The incidence of *Salmonella* must be maintained at a level below _____ to pass FSIS inspection.

- a. 5%
- b. 10%
- c. 1%
- d. 15%

B C-110

14) Labeling terms are regulated by FSIS-USDA and relate to the temperature chicken meat can reach during shipping. For product to be labeled “deeply chilled,” the meat must have

- a. never been held below 32°F.
- b. never been held below 26°F.
- c. been held between 0°F and 26°F.
- d. been held below 0°F for more than 24 hours.

C C-112

15) A properly designed and operated fan and pad cooling system can keep a building’s temperature _____ lower than the outdoor temperature.

- a. 10°F to 20°F
- b. 15°F to 25°F
- c. 20°F to 30°F
- d. 25°F to 30°F

B C-79

16) Zoonotic diseases or infections are those that may be transmitted from _____ to _____.

- a. invertebrates; vertebrates
- b. some wild animals; all domesticated animals
- c. mature, vaccinated adult birds; unvaccinated baby chicks
- d. vertebrate animals; humans

D C-39

17) WB or “wet bulb” temperature can be measured using a _____ or a _____.

- a. thermometer; barometer
- b. cooling pad; intake fan
- c. modified air cell gauge; Haugh unit meter
- d. sling psychrometer; hygrometer

D C-77

18) Birds do not have an evaporative cooling mechanism and must rely almost completely on _____ and _____ for excess heat disposal.

- a. evaporation; ventilation
- b. radiation; conduction
- c. convection; perspiration
- d. convection; radiation

D C-80

19) The method of poultry genetic selection involving the crossing of related individuals which focuses on improving uniformity among birds but may reduce performance is called _____.

- a. single line
- b. strain cross
- c. inbred crosses
- d. two-line cross

C C-92

20) Regular intake of adequate amounts of water soluble vitamins is important for growth, maintenance, and reproduction; however, large amounts of fat-soluble vitamins can be deadly to an animal. All of the following are water soluble vitamins except

- a. thiamine.
- b. pyridoxine.
- c. nicotinic acid.
- d. dextrose.

D C-97

21) Some enzymatic reactions in carbohydrate metabolism and protein synthesis require the mineral _____ to occur properly.

- a. phosphorus (P)
- b. potassium (K)
- c. manganese (Mn)
- d. selenium (Se)

B C-96

22) An inflammatory process involving mucus membranes characterized by an increased flow of mucus describes

- a. a disease symptom known as caseous caruncle syndrome or CCS.
- b. a disease symptom known as serous cataracts.
- c. a disease symptom known as catarrhal.
- d. a disease symptom known as watery viscosity condition or WVC

C D-4

23) In avian embryology, _____ are the blocks of mesoderm on both sides of the notochord that later develop into skin, muscle, and skeletal structures of the chick.

- a. blastodiscs
- b. somites
- c. vestigial vertebrae
- d. oocytes

B D-14

24) Cereal grains are primarily added to poultry feed as a source of metabolizable energy but contribute some protein. Which grain should be limited to no more than one-half of the total grain content of an animal feed, including poultry rations?

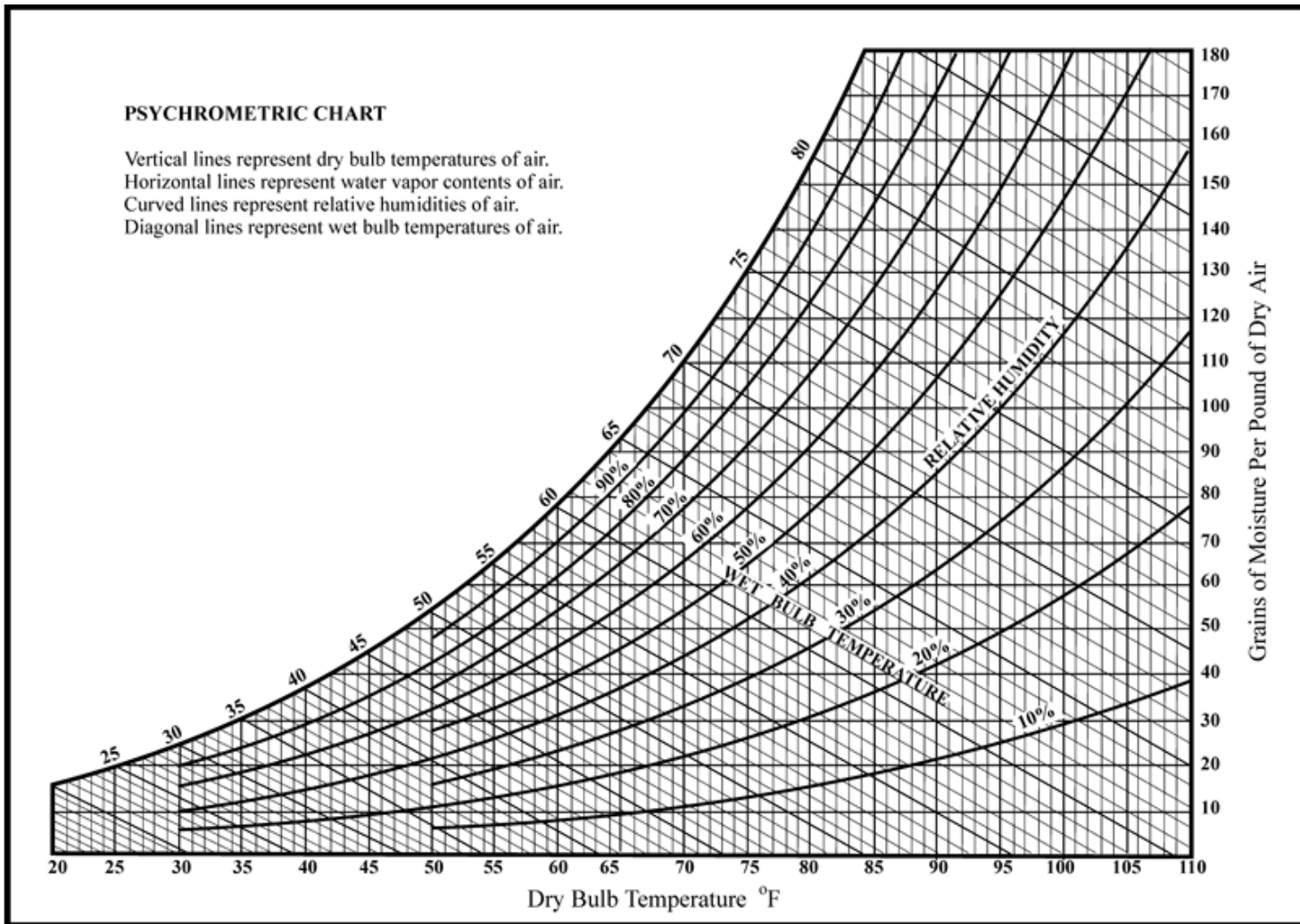
- a. barley
- b. corn
- c. grain sorghum
- d. wheat

D C-98 & C-99

25) Use the *Psychrometric Chart below* - The interior of a broiler house has a dry bulb temperature of 70 °F and a wet bulb temperature of 65 °F. What is the approximate relative humidity inside the house?

- a. approximately 78%
- b. approximately 87%
- c. approximately 45%
- d. approximately 40%

A C77, C-78, C-87, & C-88



26) In a broiler house, at a certain point in production, the amount of manure produced is 0.35 pounds/bird/day. The manure contains 2.0% nitrogen (N), and the total amount produced in the house is 164.5 pounds of N/day. How many birds does the broiler house contain?

- a. 2,879
- b. 25,300
- c. 23,500
- d. approx. 115

C Based on information found on C-70 & C-71

164.5 pounds/2.0% = 8225 pounds of manure per day x 1 bird/0.35 pounds = 23,500 birds

27) A broiler house contains 29,500 birds weighing an average of 4.5 pounds/bird. The hot weather ventilation recommendation for birds of this size is 4.6 cubic feet of air/minute. The house contains ventilation fans capable of moving 15,000 cubic feet of air/minute each. To meet the hot weather ventilation recommendation, what is the minimum number of (whole) fans required for this broiler house?

- a. 10
- b. 4
- c. 20
- d. 58

A Based on information found on C-82 through C-87

29,500 birds x 4.6 cfm/bird x 1 fan/15,000 cfm = 9.0466 fans = 10 fans

28) A recommended rate of water flow for an evaporative pad cooling system is one-half gallon per minute per linear foot of cooling pad. A producer has a 350-foot long building that is 36 feet wide with a 3-foot tall evaporative pad that runs along one-fourth of the length of the building. How many gallons of water per minute would be recommended for this pad system to enable proper wetting and optimal evaporative performance?

- a. 175.00 gallons of water
- b. 58.33 gallons of water
- c. 87.50 gallons of water
- d. 43.75 gallons of water

D Based on information found on C-84

350 feet (length of building)/4 (evaporative pad is 1/4 of the building's length) = 87.5 feet of evaporative pad X 0.5 = 43.75 gallons of water required/minute

29) A flock of 24,500 broilers has an average weight of 6.25 pounds per bird. The dressing percentage (without giblets, or WOG) is expected to be 65%, and the breast yield is expected to be 33% of the carcass WOG weight. If breast meat is valued at \$1.57 per pound, what is the expected total value of breast meat produced by this flock (to the nearest dollar)?

- a. \$52,553
- b. \$47,353
- c. \$162,236
- d. \$51,567

D Based on information found on C-114 & C-115

**24,500 birds x 6.25 lb/bird x 65% WOG yield x 33% breast yield = 32,845.31 lb breast meat
32,845.31 lb x \$1.57/lb = \$51,567 is the expected total value of breast meat produced by this flock**

30) A broiler company expects to produce 1,600,000 birds per week, and typically loses 1% of all birds due to leg problems. The average live weight of birds at the time of processing is 5.75 pounds/bird, and the dressing percentage (without giblets, or WOG) is expected to be 63%. If the carcass value (WOG) is \$0.79/pound, calculate how much of a monetary loss would be incurred each year (to the nearest dollar) by loss of the birds with leg problems compared to the expected value if the birds were produced as healthy broilers.

- a. \$23,809,968
- b. \$2,380,997
- c. \$45,789
- d. \$238,100

B Based on information found on C-53 & C-115

**1,600,000 birds x 1% = 16,000 birds lost/week
16,000 birds x 5.75 pounds/bird x 63% WOG yield x \$0.79/pound = \$45,788.40 lost/week
\$45,788.40/week x 52 weeks/year = \$2,380,997 lost per year due to leg problems**