2011 FFA POULTRY EXAM SHORTCUT NOTES FOR STUDY GUIDE

(135 bullet points that will improve your test score according to Buckeyeman)

highlight in book and retake old exams and see how this helps you improve score

1. Leghorn strains hens used mostly in USA-white shell eggs
2. 16-17 weeks age pullets are grown and taken to farm operations for future egg layers
3. 3-3 ½ # feed to get 1 dozen eggs
4. Cornish and white Plymouth Rock chickens crossed for broilers
4. Breeder hens and roosters for broiler breeders have raised and slatted floors
5. 85% hatchability for broiler breeder eggs goal
6. 7# feed needed (twice that of leghorns) to get a dozen broiler breeder eggs eat chicks)
7. 10,000 or more broilers raised in one house on farm (40 x 200) size as example
8. Poultry operations often have 5-7 flocks of broilers per year
9. 99% of broilers are under contract and contract growers are paid # or pounds of birds
10. Broilers are 3 ½- 4 ½# in six weeks age
11. White meat used in USA as a priority, dark meat exported (white meat id consumer preference)
12. Broad Breasted White birds are the preference for turkey industry in USA-
13. 95% of turkeys are under contract from growers.
14. Turkeys gain 1# on 2 ½ # feed (feed conversion) whereas broilers are less then 1.9# feed to get 1# gain
15. In 2005 $20 billion was pumped into economy from poultry
16. All poultry meat represents 35% of the total meat marketed from (fish, beef, pork, mutton, and poultry)
17. All poultry belong to:
    a) Animalia kingdom
    b) Chordata phylum
    c) Aves class
18. Poultry description for animal type- feathered, biped (two footed) warm-blooded, 4 chamber heart
19. Waterfowl belong to order…Anseriformes
20. Pigeons and doves belong to order.. ….Columbiformes
21. Poultry traits include:
    a) 105-107 body temperature
    b) 300 beats of heart/minute rested (rapid heart beat)
    c) 14-22 exchanges /minute –strong respiration rate
    d) long hollow bones (some rigid for flying)
    e) forelimbs modified into wings
22. Outer skin on fowl called epidermis and inner layer called dermis
23. Skin color of birds influences consumer appeal….yellow skin preferred in USA over other colors.
24. Feathers age grown after day 5 in egg and originate in tract called pterylae and cover 75% of body
26. Female feather tips are generally round and male tips normally have pointed tips
27. Meat chickens (broilers) have 2 ounces of feathers at normal market age of six weeks
28. When birds molt, egg production goes down. thus rapid molting is preferred
30. Exact function of comb and wattles are unkown..but appear to be part of cooling system
31. Earlobe color indicates egg shell color..white earlobes= white shell…red earlobes= brown eggs
32. Pectoral muscles important in avain system and pectoral muscles equal all other muscles in body weight
    a) 15-25% of body weight for pectoral muscles
    b) in mammals only 1% body is pectoral muscle
    c) pectoralis major= depresses wing
    d) pectoralis minor= elevates wing
33. Myoglobin pigment….. more activity…more myoglobin…more red meat
    (that explains why birds that fly such as pheasants= red breast meat …broilers= white breast meat)
…..wings, thigh, and drumstick are red meat….breast of domestic birds= white meat…….
34. Birds are built for flight….thus penetrated by extensions of air sacs
35. Clavicle= wishbone
36. Sternum bone = equals keel bone bottom of breast
37. Birds respiratory system more efficient than mammals

38. Syrinx is the voice box located @ junction of trachea and two primary bronchi
39. Air sacs are unique to birds and have NINE (9) air sacs
40. Birds have a pointed tongue that forces food down gullet and birds do not have teeth
41. Crop stores food (large pouch in front of bird)
42. Glandular stomach- (proventriculus) secrete gastric juices
43. Muscular stomach (gizzard or ventriculus) grinds feed and serves as the teeth so to speak
.....grit used to assist in grinding and added to feed.....
44. Small intestines- mainly absorbs nutrients (duodenum, jejunum, ileum)
45. Cloaca- rear end where egg is laid, genital area, urinary and digestive tracts
45. Liver absorbs bile
46. gall bladder stores bile

REPRODUCTIVE TRACT.....OVARY and OVIDUCT- see page # C-24
(immature yolk) (parts that form eggs)

47. Eggs are produced by one ovary (left) and associated with oviduct
48. Oviduct is 30 inches long and contains (I M I U) *infundibulum, magnum, isthmus, uterus* plus vagina
49. Egg formation-
    a) 15 minutes- infundibulum- engulfs yolk
    b) 3 hours- magnum- secretes white
    c) 75 minutes- isthmus- forms shell
    d) 20-21 hours- uterus- forms thin white (albumen), adds extras

    Purpose of vagina is to pass egg once signal is given
50. Male chicken reproductive organs are inside the body..unlike many mammals
51. Fowls urinary system different, no bladder, thus uric acid goes with feces from Cloaca
52. Endocrine system consists of many hormones that regulate body system
53. Hypothalamus- gland at base of brain..regulates hormones from pituitary gland
54. Pituitary gland is MASTER GLAND of body such as....
    a) FSH- Follicle Stimulating Hormone- growth and maturity
    b) LH- Luteinizing Hormone- - releases ovulation
    c) Oxytocin- (mesotocin) assists in physical process of laying egg
    d) Prolactin- stimulates broodiness in females
    e) Thyropin- - stimulates body growth
55. Thyroid- regulates metabolism and molting of feathers
56. Ovary- secretes estrogen
57. Testes - secretes testosterone in males
58. Pancreas- regulates sugar metabolism
59. Fertile vs non fertile eggs
    a) blastodisc= normal egg
    b) blastoderm= fertile egg
60. Yolk important in developing embryo
61. Once fertilization happens...egg changes from blastodisc to blastoderm due to cell division (1 to 2 to 4 etc)
62. Early egg development of fertile egg nutrition comes from stores in the blastoderm
63. 48 hours after fertile egg incubated- blood vessels appear

64 Neural tube is formed in egg and spine is formed

65. Somites develop and three kinds of cells:
    a) dermatome= forms skin
    b) myotome= forms muscle
    c) sclerotome= forms skeletal structure
66. By day 10 in fertile eggs all muscles are developed and *all parts* of the chick are formed
67. Birds head position in egg is- tucked under right wing on large end of egg
68. Malformations= birth defects (nalpositions and malformations= 5% decrease in hatchability)
69. Nutrition is important in embryonic development..need 40 different nutrients to develop correctly
70. Direct causes of *Infectious diseases*= bacteria, viruses, rickettsiae, parasites, and fungi
71. Causes of *non-infectious diseases= injuries, toxic* poisons, nutritional factors
72. Bird STRESS caused by chilling, poor ventilation, overcrowding, inadequate quality and quantity of feed and water, overmedication and others

73. Bio-security measures to control diseases
    a) reduce contact between birds and infectious organisms
    b) maintain sanitary conditions
    c) strengthen bird's defense against infectious organisms
74. Ways to reduce infection
    a) isolate new birds for several weeks
    b) "All In and All Out " policy.....same age birds enter and leave
    c) purchase young birds
    d) sanitize people and equipment before entering buildings
    e) reduce rats and stray birds (carrier of diseases)
    f) properly dispose of dead birds and waste that might be contaminated
    g) allow two weeks "down time" before placing new birds in buildings
75. Key to *sanitation* = effective cleaning and disinfecting
76. organic materials such as (manure, dirt, dust, feathers and litter) host disease organisms
77. quaternary ammonium compound is good water-sanitizing agent
78. chlorine-based compound (hypochlorite) is most effective on cleaning surfaces
79. *inexpensive disinfectants*= time, freezing, thawing, and sunshine
80. Adequate nutrition help overcome stress of disease
81. PROPER housing protects poultry from contact with disease agents
82. VACCINES one of most useful practices in prevention of certain diseases
83. *Living vaccines* produce better immunity than do dead vaccines
84. Review diseases, symptoms etc pages C-40-C-42 especially
    cholera, pullorum, New Castle, Fowl Pox***, Mareks ****, coccidiosis, bumblefoot
85. Note that many diseases can be controlled by vaccination
86. Foot and leg problems (disorders) **small in broilers** 0.05 to 1%; **large in turkeys** up to 33%
87. Rickets caused by lack of calcium, phosphorus, and /or Vit. D3
88. Calcium deficiency solved by feeding oyster shell, limestone, or meat/bone meal in ration
89. **Perosis** symptoms= swelling of hock joints, slipped tendons, severe shortening of long bones
90. 85% of rapid growth is result of genetic selection= possible future leg problems
91. Infectious agents are either direct or indirect cause of leg problems
92. Poultry waste is a DAILY problem...dead birds, poultry manure, and other wastes
93. Several houses wastes scraped or flushed into pits, storage ponds, or lagoons for later disposal (page C-46)
94. Pest problems are concerns in pits such as fly larvae
95. Settling tanks (lagoons) expensive and needs irrigation
96. High rise laying hen houses may be 15-30 feet tall. but problems with water leaching into area fields & streams
97. Floor storage most common for broilers, pullets, breeder birds and small laying flocks on
    a) concrete
    b) wooden
    c) earthen floors
98. Dry stack of manure (temporary storage) better to preserve manure nutrients as fertilizer= flexible application of manure during year vs. one time cleaning
99. Storage ponds= up to 90 day storage, mostly for laying hen operations
100. Anaerobic lagoon for 60,000 hens is 10 foot deep and takes up to 1.8 acres of land
101. Two part (stage) lagoon= #1 stage-TREATMENT #2 stage STORAGE and TREATMENT (page # C-50)
102. Lagoons often used with cage layer buildings and flushed with water often
103. **70% of nitrogen** is lost with volatilization with lagoons and **90% of phosphorus** settles to bottom with sludge
104. Composting is aerobic (oxygen-requiring) process also known as DEEP STACK composting
105. 30:1 is proper carbon to nitrogen ratio for aerobic composting to work with 40-50% moisture 5% oxygen needed
106. Three composting methods:
    a) windrowing composting.....good for 10-15 day storage
    b) forced air composting= thru piles of composting
    c) In-vessel composting= use large roto-tiller to mix contents
107. Biogas is conversion of manure into combustible gas (METHANE) is 60-70% of final mixture
108- Uses of poultry manure..Nitrogen(N), Phosphorus (P2O5), Potassium (K20), calcium
    ..phosphorus biggest concern due to algae growth in nearby ponds (streams) such as St Mary Lake 2010
109. Manure production= 75% MOISTURE (broilers = ¼# daily and turkeys = 1# daily)

110. Broilers eat **26-30**#/day/100 birds- 6 weeks old and 100 turkeys east **93-115**#/100 - 16 week poults
111. Animal manure is good for fertilizer...but best use is feed source for BEEF animals
112. **Composting formula=**
30 parts poultry manure; 10 parts poultry carcass; 1 part what straw; 0-5 parts water (C-56)
113. Composting takes **60 days to complete**
114. Incinerating safest way to compost..but costly and sometimes not people friendly
115. HOT WEATHER use fan and pad system; COLD WEATHER use convection tube system
116 PSYCHROMETRY- study of moist air and changes..see page (C-60)
117. **DB** stands for dry bulb temperature
118. ONE pound air and ONE pound of water occupies 13.5 cubic feet of space in normal building'
119. from 40 degrees to 60 degrees doubles grains of water (40 degrees=33 and 60 degrees =62)
120. Every 20 degrees n rise of DB= double air moisture holding capacity
121. Too little air flow in poultry buildings= STRONG AMMONIA ODOR
122. Jet flow= rapid flow from hole in open space example....2" hole= 3 ½ foot distance of flow
123. Jet flow 16" hole (like window open) = 30 foot of flow
123 40# turkey needs- 13.5 air flow whereas,,,6# broiler needs 3.0 air flow (CFN/bird)
124. Fresh air convection tube ventilation prevents cold air coming into building..inflates with warm air
125. FAN and PAD SYSTEM are large fans at one end of building
126. Most broilers go to processing plants **6 weeks** (25-47 days)
127. Most hen turkeys go to processing **14-16 weeks age**
128. Most tom turkeys GO TO PROCESSING **18-20 WEEKS AGE**
129. 13 BASIC STEPS IN PROCESSING (SEE CHART PAGE C-73) AND THINK THRU PROCESS
130. Take broilers **off feed 6-12 hours** before slaughter; turkeys taken off **feed 8-10 hours** before slaughter
131. Carcasses put into 138-140 degree water- 30-75 seconds; scalded 123-130 degrees 90-120 seconds (loosens feathers)
132. Must have USDA inspector at processing plant during process
133. FRESH LABEL poultry meat...never under 26 degrees
134. HARD CHILLED...0-26 degree meat
135. FROZEN...held below 0 degrees ..sometimes called "previously frozen

GOOD LUCK AND GET PLENTY REST NIGHT BEFORE EXAM