

UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF ANIMAL & POULTRY SCIENCE
EXAMINATION: 4 JUNE 2012
SUBJECT, COURSE & CODE: PIG & POULTRY PROD, ANSI201

DURATION: 3 HOURS

TOTAL MARKS: 100

External Examiner: Prof M Chimonyo
Internal Examiner: Dr NC Tyler

NOTE: THIS PAPERS CONSISTS OF THREE (3) PAGES, PLEASE SEE THAT YOU HAVE THEM ALL.
ANSWER ALL QUESTIONS & SHOW ALL WORKING FOR CALCULATIONS

SECTION A (total 70 marks)

QUESTION 1 (total 12 marks)

- a) Draw a labelled figure of expected egg production and egg weight of a commercial egg-type bird [4]

With reference to your figure:

- b) describe how both the curves would change if the age at sexual maturity was delayed [2]
- c) describe how a graph such as this could be used to monitor production and be used in conjunction with good record keeping to problem-solve [4]
- d) Explain the importance of having a number of sheds with birds of different ages on a layer farm [2]

QUESTION 2 (total 5 marks)

Describe, and comment on the consequences of, the likely differences in the ovary of a commercial egg-type bird at peak production with a broiler breeder hen. [5]

QUESTION 3 (total 10 marks)

Are the following statements true or false? Provide a reason for your answer

- a) Feathers can be used to identify sex of the chick at day old [2]
- b) The best egg producers can be selected by their moulting patterns. [2]
- c) Blind birds still respond to changes in photoperiod. [2]
- d) The longer the lag time, the longer the sequence length in a laying hen [2]
- e) It is possible to determine if an egg is fertile before incubation [2]

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QUESTION 4 (total 14 marks)

- a) Copy this table in your answer book, and complete it: [4]

Date	Time of oviposition	Time of ovulation
4/6/12		
5/6/12		
6/6/12		
7/6/12		
8/6/12		
9/6/12		
10/6/12		
11/6/12	9:30	
12/6/12	11:00	

- b) What is the expected sequence/clutch length of this particular hen? [1]
- c) Show (with calculations) how you could best improve the production of this hen in a month with the use of an ahemeral cycle? [6]
- d) Would you recommend the use of ahemeral cycles in practice? (Provide reasons) [3]

QUESTION 5 (total 3 marks)

How is the avian digestive tract suited to eating behaviour? [3]

QUESTION 6 (total 10 marks)

Many welfare issues relating to poultry production are as a direct result of selecting for increased efficiency. What is **your own opinion** about finding a balance between the need for improved performance and welfare issues. Include examples from both broiler and layer production [10]

QUESTION 7 (total 12 marks)

“The avian respiratory system is much more efficient than the human respiratory system at extracting oxygen from the atmosphere and removing carbon dioxide from the blood. It is also important in other regulatory functions of the body”.

Is this a valid statement? Explain. [12]

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QUESTION 8 (total 4 marks)

- a) Why do the vaccination programmes of broilers and broiler breeders differ so greatly? [2]
- b) Explain the importance of sentinel birds in an effective vaccination programme [2]

SECTION B (total 30 marks)

QUESTION 1 (total 5 marks)

Describe how the target ages for first mating and weaning age of a sow's litter will change based on replacement rates of sows. [5]

QUESTION 2 (total 5 marks)

In an effort to improve the number of litters per sow per year, a farmer has attempted to shorten lactation length as well as the weaning to reconception period. Describe why doing this may actually reduce the number of litters per sow per year [5]

QUESTION 3 (total 6 marks)

Describe the basic principles of biosecurity at the farm level of a pig production system. [6]

QUESTION 4 (total 8 marks)

Contrast outdoor and intensive indoor pig production systems [8]

QUESTION 5 (total 6 marks)

Describe the relationship between feeding levels of a breeding sow during breeding, gestation and lactation. [6]