

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI.
SCHOOL OF AGRICULTURE & AGRICULTURAL TECHNOLOGY.
DEPARTMENT OF ANIMAL SCIENCE & TECHNOLOGY
2008/2009 RAIN SEMESTER EXAMINATION

AST 506: ANIMAL NUTRITION

Time Allowed: 3 hours.

INSTRUCTION: Answer 5 questions (at least two from each section)

SECTION A

- 1a. Define and discuss nutrition in a named Animal.
- b. What are the differences between feeding and nutrition?

2. Discuss Partition of Energy of feedstuff highlighting Metabolisable Energy, Digestible Energy, Net Energy and Gross Energy in the sequence they are derived.

- 3a. Discuss the factors affecting Metabolisable Energy of feeds.
- b. Discuss the central role of Pyruvate in Carbohydrate digestion and metabolism in Animals.

SECTION B

- 4a) As an Animal Scientist confronted with the challenge of advising farmers on the use of grasses and forage in livestock production articulate the attributes of these grasses and forage crops that make them potential feedstuffs.
- b) The use of cassava root meal and its by-products has been the focus of most nutritional research in recent times. As a person conversant with cassava and its by products, give reasons in favor and against its use in poultry diets.

- 5a) What in your opinion are the likely attributes of cereal grains and their by-products that make them unique feedstuffs in the livestock and poultry industries.
- b) What are the implications of feeding high fat diets to animals before slaughter and how can it be corrected.

- c) What do you understand by the term bulky feed and what is the problem associated with its use in livestock diets.

SECTION C

6a) Mr Okoye has just bought a bag of sorghum which contains 22.5% water, 9.2%CP and 2.3%CF. What will be the percent CP and CF of the sorghum if

- i) Fully air-dried,
- ii) Oven-dried?

b) Assuming that you want to make a ton (1000kg) of 18%CP creep ration for your piglets. You have sorghum meal as source of energy and groundnut cake as source of crude protein. The ration will contain 300kg premix containing 60kg crude protein. How much of the sorghum meal and groundnut cake will you need in the remaining 700kg to complete the ton of the creep ration?

Sorghum meal = 11% CP

Groundnut cake = 42% CP

Show step-by-step how you have arrived at your answer.

7a) Convert:

- i. 2.53% to ppm (parts per million)
- ii. 316ppm to percent (%)
- iii. 43mg/kg to ppm.

b) A lactating doe requires 2kg of dry matter (dm) and 100gm of crude protein for its daily maintenance. It gets 1kg dm from hay which contains 5% CP and 1kg dm from silage which contains 4% CP.

Does the doe meet its daily CP requirement from the silage and hay?

If not, how much of a standard concentrates ration containing 16% CP will you give to it to erase the deficit in CP requirement?