



UNIVERSITY EXAMINATIONS

**FIRST YEAR EXAMINATION FOR THE AWARD OF
CERTIFICATE IN ANIMAL HEALTH AND PRODUCTION**

ANHE 00111: PHYSIOLOGY OF DOMESTIC ANIMALS

STREAMS: CERT (ANHP) Y1S2 & Y1S1

TIME: 2 HOURS

DAY/DATE: FRIDAY 17/12/2010

8.30A.M -10.30 A.M.

INSTRUCTIONS:

Answer ALL questions in Section and ANY TWO in Section B.

SECTION A: (40 MARKS)

1.
 - (a) Name an important gas necessary for the development of the embryo but is usually absent when the egg is laid. [1 mark]
 - (b) How is this gas ultimately obtained? [2 marks]
 - (c) Which two gases must leave the embryo to the outside during embryo development in the egg? [2 marks]

2. What is meant by
 - (i) dead space?
 - (ii) coagulation?
 - (iii) cardiac output?
 - (iv) parabronchi?
 - (v) vascular spasm? [5 marks]

3. Partial pressure of a gas is calculated by multiplying its concentration by the total pressure. Calculate in mm Hg the PO_2 at sea level. [5 marks]

4. (a) State, with brief explanations, any two important reasons for the study of physiology. [2 marks]
- (b) List down and explain any 3 disciplines of biology that contribute knowledge to physiology. [3 marks]
5. (a) Where, in the ruminant, does enzymatic breakdown begin following swallowing of the cud? [3 marks]
- (b) Explain briefly the relationship between temperature and enzymatic reactions. [2 marks]
6. Describe the stages/steps of air movement through the avian respiratory apparatus. [5 marks]
7. Explain the effect of the following on hemoglobin's ability to bind oxygen
- (i) temperature [2½ marks]
- (ii) pH [2½ marks]
8. (a) What do you understand by "dry air"? [1 mark]
- (b) Where would one expect solubility of CO₂ to be higher-in the water of Lake Victoria or the water of the Indian Ocean? [2 marks]
- (c) Distinguish between pregastric and postgastric fermenters. [2 marks]

SECTION B: (30 MARKS)

9. Write notes on the functions of the red blood cells. [15 marks]
10. Explain how the process of hemostasis is accomplished. [15 marks]
11. Discuss cellulose digestion in ruminant and nonruminant herbivores. [15 marks]
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