



**2<sup>ND</sup> SEM. 2004/2005**

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**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY EXAMINATIONS**

**PROGRAMME:    DIPLOMA IN AGRICULTURE YEAR 1  
                     DIPLOMA IN AGRICULTURAL EDUCATION YEAR 1  
                     DIPLOMA IN HOME ECONOMICS YEAR 1  
                     DIPLOMA IN HOME ECONOMICS EDUCATION YEAR 1**

**COURSE CODE:    APH 100**

**TITLE OF PAPER:    ZOOLOGY**

**TIME ALLOWED:    TWO (2) HOURS**

**INSTRUCTIONS:    ANSWER ANY FOUR (4) QUESTIONS**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY  
THE CHIEF INVIGILATOR.**

**QUESTION ONE**

- a. Explain the difference (s) between a plant and an animal. 5 Marks
- b. Describe how classification of animals is carried out. 10 Marks
- c. Describe the characteristics of each of the following Classes of vertebrate animals.
  - i. Pisces 2 Marks
  - ii. Amphibia 2 Marks
  - iii. Reptalia 2 Marks
  - iv. Mammalia 2 Marks
- d. Give the reasons for carrying out the classification of animals. 2 Marks

**QUESTION TWO**

- a. Give an account of the phenomenon of natural selection as a force that brings about evolution. 10 Marks
- b. Using the phenomenon of natural selection, explain how the present giraffe could have acquired the long neck. 15 Marks

**QUESTION THREE**

- a. Explain, using the example of the 'Galapagos Finches', how divergent evolution leads to adaptive radiation among animals. 10 Marks
- b. Explain how the theories of distribution studies and the continental drift have been used as evidence of evolution. 15 Marks

**QUESTION FOUR**

- a. Name the three (3) main parts of an animal cell. 5 Marks
- b. Describe the processes of diffusion, osmosis and active transport as occurs at cell membranes of animal cells. 15 Marks
- c. Explain the inter-relations among the functions of the endoplasmic reticulum, ribosomes and the Golgi body in animal cells. 5 Marks

**QUESTION FIVE**

- a. Describe how the genetic information on the gene portion of a deoxyribonucleic acid (DNA) molecule is transcribed onto the messenger ribonucleic acid (mRNA) and explain the objective of this process in the function (s) of an animal cell. 15 Marks
- b. Describe the process of protein synthesis as it occurs in an animal cell and explain the effect of the inadequate supply of essential amino acids in the diet of animals on the process of protein synthesis and on the animal itself. 10 Marks

**QUESTION SIX**

- a. Describe the process of mitosis in a goat with 60 diploid number of chromosomes and indicate the behaviour of these chromosomes in the process. 10 Marks
- b. Describe the process of spermatogenesis in a goat with 60 diploid number of chromosomes. 15 Marks