



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

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UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATIONS

**PROGRAMME:** DIPLOMA IN AGRICULTURE YEAR 2  
DIPLOMA IN AGRICULTURAL EDUCATION YEAR 2  
REMEDIAL YEAR IN AGRICULTURE

**COURSE CODE:** APH 201

**TITLE OF PAPER:** ANATOMY AND PHYSIOLOGY

**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**

Describe the organization of the abdominal cavity and explain how the process of invagination resulted in the body wall and the organs in the cavity being covered by the peritoneal membrane (peritoneum). 25 Marks

**QUESTION TWO**

- a. Name the two (2) parts of the skeleton of farm animals and list under each part the components of that part. 5 Marks
- b. Describe the structural organization of a vertebral bone and explain how vertebral bones join one with the other to form the vertebral column of farm animals and how, in the process, they form the vertebral canal and the intervertebral foramen. 15 Marks
- c. Name the regions into which the vertebral column is subdivided. 5 Marks

**QUESTION THREE**

- a. List the parts of the ruminant digestive tract in their order from the mouth to the anus. 5 Marks
- b. Describe the chemical digestion of the carbohydrates and proteins in the mouth, rumen, reticulum, abomasum and small intestine of a ruminant animal. 20 Marks

**QUESTION FOUR**

- a. Define puberty as it occurs in a gilt. 2 Marks
- b. Explain the factors that influence age at puberty in a gilt. 15 Marks
- c. Explain why breeding should be delayed for several months after a gilt has attained puberty. 8 Marks

**QUESTION FIVE**

- a. Describe the follicular and luteal phases of the oestrous cycle in a sow and indicate the effect of the hormones involved in each phase on the behaviour of the sow. 20 Marks
- b. Explain the importance of the knowledge of the signs of oestrus on a large pig farm in Southern Africa. 5 Marks

**QUESTION SIX**

- a. Describe the developmental changes of the mammary glands during the following stages and indicate the roles of the hormones oestrogen and progesterone in each stage.
- |      |                            |           |
|------|----------------------------|-----------|
| i.   | Foetal stage               | 2.5 Marks |
| ii.  | Prepubertal stage          | 2.5 Marks |
| iii. | Puberty to first pregnancy | 2.5 Marks |
| iv.  | First pregnancy            | 2.5 Marks |
- b. Give an account of the hormonal changes that initiate the process of lactation and how the 'milk ejection or letdown' is achieved in a heifer. 5 Marks
- c. Describe how milk production is continued and maintained during the lactation period. 10 Marks