

**THE OPEN UNIVERSITY OF SRI LANKA  
B.Sc DEGREE PROGRAMME – LEVEL 4  
FINAL EXAMINATION 2014/2015  
COURSE CODE – ZLU 2280  
COURSE TITLE – ANIMAL FORM AND FUNCTION  
DURATION – THREE HOURS**



Index Number .....

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Date : 02<sup>nd</sup> November 2015

Time: 9.30am – 12.30pm

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**Instructions**

- This question paper has two parts, **Part A** and **Part B**.
- **Part A**, structured essay question, is compulsory and answers should be written in the space given in the question paper.
- Answers for **Part B** should be written in answer books/papers
- Please hand over both **Part A** and **Part B**.

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**PART A**

Question No: 01 (100 marks)

1. During the evolution of animals different reproductive mechanisms evolved among the animals for continuation of life.

**1.1. List the organs that make up the human male reproductive system**

- 1. ....
- 2. ....
- 3. ....
- 4. ....
- 5. ....
- 6. ....
- 7. ....
- 8. ....

(08 marks)

1.2. Draw a fully labeled diagram of the human female reproductive system

(12 marks)

1.3.State the function performed by each of the organ of the male reproductive system listed in question 1.1 above

- 1. ....
- 2. ....
- 3.....
- 4. ....
- 5. ....
- 6. ....
- 7. ....
- 8. ....

(10 marks)

1.4.Write three (03) main roles played by female reproductive system?

- 1.....
- 2.....

(06 marks)

1.5. Complete table 1.1 by identifying the differences in gametogenesis between the human male and female for each of the feature stated.

Table 1.1

Feature	Male	Female
Location of the gonads		
Duration of gamete production		
Number of gametes produced		
Number of functional gametes produced per primary germ cell		
Hormones involved		

(16 marks)

1.6. Outline the events of human spermatogenesis.

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(08 marks)

1.7.Name the phases of menstrual cycle in humans

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(06 marks)

1.8.Indicate the hormones that are secreted by the pituitary and ovary to regulate the menstrual cycle of human females

Pituitary	Sex hormones( Ovarian hormones)

(08 marks)

1.9.Indicate the major hormone that is released due to positive feedback in the process of child birth in humans?

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(02 marks)

1.10. Explain the roles of two ovarian hormones in the menstrual cycle including the timing of their secretion during the cycle..

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(10 marks)

1.11. Outline the levels of each of the hormones that control the menstrual cycle immediately before ovulation.

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(04 marks)

1.12. A 60 year-old man can father a child, but 60 year old woman is unlikely to become pregnant. Briefly explain the reason.

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(10 marks)



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**PART B**

**Answer any *four* (04) questions**

2. Endocrine system consists typically of glands that are ductless. Their secretions are known as hormones.
  - a) Define what is meant by Hormones? (10 marks)
  - b) Briefly explain the characteristics of hormones? (20 marks)
  - c) Distinguish between hormone mechanisms that use cell surface receptors versus intracellular receptors (70 marks)
3. Animals are capable of adjusting to changing conditions via certain mechanisms that maintain a constant internal environment.
  - a) Name and briefly explain the functions of the three basic components of negative feedback mechanism? (20 marks)
  - b) Compare positive and negative feedback mechanisms. (30 marks)
  - c) Describe negative feedback regulation taking ADH as an example and discuss the consequences that may arise due to failure to secrete ADH (50 marks)
4. Muscle tissue is highly specialized to contract or shorten forcefully allowing many motions in the body.
  - a) List the four characteristic features of muscle tissue. (10 marks)
  - b) Compare and contrast the different types of muscle tissues (20 marks)
  - c) Explain the sliding filament mechanism of skeletal muscle contraction (70 marks)

5. The essential job of the kidney is to control the composition of the body fluids by selectively removing unwanted substances from the blood.
- a) Describe the fundamental structure of the kidneys (20 marks)
  - b) Describe the mechanisms involved in formation of urine in man (60 marks)
  - c) Explain the physiological changes that would take place due to Kidney failure (20 marks)
6. Write short notes on any two (02) of the following.
- a) Cell junctions
  - b) Active transport
  - c) Cardiac cycle
  - d) Partial pressure of Oxygen
- (100 marks)