

The Open University of Sri Lanka  
Faculty of Natural Sciences  
B.Sc/ B. Ed Degree Programme



Department	: Zoology
Level	: Level 4
Name of the Examination	: Final Examination
Course Code and Title	: <b>ZLU2280 -Animal Form and Function</b>
Academic Year	: 2019/20
Date	: 6/02/2020
Time	: 9.30am -12.30pm
Duration	: 3 hours
<b>Index number</b>	:

### General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists **Part A and Part B** with **5** questions in 6 pages.
3. **Part A** , structured essay question, is **compulsory** and answers should be written in the space given in question paper.
4. Answers for **Part B** should be written in answer books/papers provided.
5. All questions carry equal marks.
6. Answer for each question should commence from a new page.
7. Draw fully labeled diagrams where necessary.
8. Having any unauthorized documents/ mobile phones in your possession is a punishable offense.
9. Use blue or black ink to answer the questions.
10. Circle the number of the questions you answered in the front cover of your answer script.
11. Clearly state your index number in each page of answer script.

Part A

Question 1

1.1.a. Define the term sexual reproduction.

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(5 Marks)

1.1.b. Describe the significance of sexual reproduction in animal.

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(5 Marks)

1.1.c. Reproductive system of some of the animals are bisexual or hermaphrodites. Write one biological advantage and disadvantage of hermaphrodites.

Advantage

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Disadvantage

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(6 Marks)

1.1.d Table 1 shows different animal groups . Name their reproductive system

Name of the organism	Reproductive system
<i>Hydra</i>	
<i>Ascaris</i>	
<i>Pheratem</i>	
<i>Pheriplenata</i>	
Human	

Table 1

(5 Marks)

1.2.a. Draw a fully labeled diagram of human male reproductive system.

(10 Marks)

1.2.b. In which part of the system in your diagram produces sperms?

(1 Mark)

1.2.c. Name the hormones that are produced in human male reproductive organ.

(4 Marks)

1.2.d. Write the main functions of hormone that you have mentioned in 1.2.c.

(8 Marks)

1.2.e. Name two internal accessory reproductive organs that support to male reproductive system.

(2 Marks)

1.2.f. Name two external accessory reproductive organs that support to male reproductive system.

(2 Marks)

1.3. a. List female reproductive hormones produced in non pregnant woman, in the Table 2. Mention from where it is secreted and function of each.

Table 2

	Name of hormone	Secreted from	Function of the hormone
1			
2			
3			
4			

(12 Marks)

1.3.b. Draw a graph to show the relationship between the concentration of four major hormones with the dates of month.

(6 Marks)

1.3.c. How do you describe ovarian cycle ?

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(12 Marks)

1.3.d. What are the phases of ovarian cycle ?

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(2 Marks)

1.3.e. What are the structural changes that takes place in different phases that you mentioned in 1.3.d.?

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(12 Marks)

1.3.f. What are the types changes take place in the uterus if there is no fertilization of egg.

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(4 Marks)

1.3.g. Describe how hormone level is maintained after implantation of fertilized egg.

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(4 Marks)



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3

4

5



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### Part B

Answer any **four (4)** questions.

2. Molecules are transported through cell membrane in different methods.  
2.a. Simple diffusion alone cannot complete transport of molecules in multi-cellular animals.  
Explain why? (20 marks)  
2.b. Briefly describe different methods of transport of molecules through cell membrane. (50 marks)  
2.c. Describe how monosaccharide molecules in the intestine are transported in to the blood. (30marks)  
**(Total 100 marks)**
3. Animals exchange the respiratory gasses through respiratory surface.  
3.a. Describe characteristic features of efficient respiratory surface. (10 marks)  
3.b. Explain how bird lung has achieved characteristics features that you mentioned in 3.a (30 marks)  
3.c. Giving examples, describe different ventilation mechanisms present in animals. (60 marks)  
**(Total 100 marks)**
4. Energy production processes take place in all living cells.  
4.a. Name the common process of production of energy in living cells. (05 marks)  
4.b. Briefly describe the major processes of production of energy from a glucose molecule in animal cells. (80 marks)  
4.c. Describe how a fat molecule provides energy through cellular respiration. (15 marks)  
**Total 100 marks)**
5. Respiratory pigments transport gasses in circulatory system.  
5.a. Describe the oxygen dissociation curve and comment on significance of it. (20 marks)  
5.b. Describe how carbon dioxide is transported from tissues and released at human lungs. (20 marks)  
5.c. Explain how different factors affect to the transport of oxygen in human body. (60 marks)  
**(Total 100 marks)**
6. Neuron is the basic unit of nervous system.  
6.a. What is a reflex action of nervous system? Discuss the importance of it. (10 marks)  
6.b. Describe the resting membrane potential and how it is maintained in a neuron. (40 marks)  
6.c. Explain how action potential is generated and propagate the impulse along a neuron. (50 marks)  
**(Total 100 marks)**
- 7 a. Briefly describe the importance of osmoregulation in animals. (25 marks)  
b. Describe the role of kidney in acid base balance in human body. (75 marks)  
**(Total 100 marks)**

