UNIVERSITY OF RUHUNA

B.SC. GENERAL DEGREE LEVEL I (SEMESTER I) EXAMINATION –September/October 2018

SUBJECT : ZOOLOGY

COURSE UNIT: ZOO 1102 – *Core Zoology*

Time: 01 ½ hours

Index Number: ....

Question No.		Marks
Part A	1	
	2	
	3	
	4	
Part B	1	
	2	
	3	
	4	
Assessment		
TOTAL		

Answer **Part A** and **any two** questions from **Part B**.

Illegible handwriting would be penalized.

Part A: Answer all questions within the space given. **(45 minutes)**

1.

i). Mention the differences between the proposed pre-biotic atmosphere and the present-day atmosphere.

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ii). Give **three** properties of pre-cells according to the biochemical origin of life.

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Index number ....

iii). What is proposed by 'RNA world hypothesis'?

iv). What is meant by 'unity in diversity' of life?

v). Briefly describe 'endosymbiont theory'.

(10 marks)

2.

i). What is unique about the amino acid 'Prolin' in relation to the protein structure?

ii). Name **three** different types of membrane proteins, and mention how each occur in the cell membrane.

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iii). What is meant by semi-conservative DNA replication?

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iv). List major components of the cytoskeleton in animal cells. Mention what each is made up of.

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v). State **two** major steps of expression of a protein coding gene, and mention the outcome of each step.

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(10 marks)

3.

i). Mention **two** characteristics of epithelial tissues.

ii). List **two** functions of tight junctions.

iii). Name **two** types of fat cells, and mention how to differentiate them.

iv). List **two** hormones that influence osteoclastic activity.

v). Draw labelled sketches of loose connective tissue and dense connective tissue.

(10 Marks)

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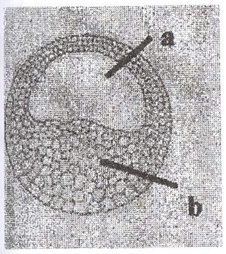
ssue.

(10 Marks)

4.

i). A stage of frog development is depicted in the figure.



Identify the stage?

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Name a and b.

a. ....

b. ....

ii). State the importance of the following processes occur in mammalian development.

Formation of fertilization membrane ....

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Cleavage ....

Acrosome reaction ....

Pattern formation ....

iii). State **two** important processes regulating embryonic development.

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iv). List **four** extra embryonic membranes and mention the function of each.

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v). List **two** important features of embryonic stem cells and **two** applications of stem cell biology.

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(10 marks)

Index number ....

Part B:

Answer any two questions only. **(45 minutes)**

1. Write an essay on evolution and speciation. 20 marks

2. Describe the protein transport machinery in eukaryotic cells. 20 marks

3. Give a brief description on different types of blood cells, structure and functions, and their medical applications. 20 marks

4. Write an account on cleavage and gastrulation processes of embryonic development. 20 marks

Marks of the continuous assessment **Max. 20 marks**

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