

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR  
OF SCIENCE IN WILDLIFE MANAGEMENT**

**WIEM 312: COMPARATIVE VERTEBRATE PHYSIOLOGY**

**STREAMS: BSC. WIEM (Y3S1)**

**TIME: 2 HOURS**

**DAY/DATE: TUESDAY 11/12/2018**

**2.30 P.M. – 4.30 P.M.**

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**INSTRUCTIONS:**

**Answer ALL questions in section A and any TWO questions in section B.  
Do not write anything on the question paper.**

**SECTION A (30 MARKS)**

1. Briefly differentiate between the following terms as used in comparative vertebrate physiology.
  - (a) Osmoregulation and Osmoconformers (1 mark)
  - (b) Thermoconformers and Thermoregulators (1 mark)
  - (c) Respiratory surface and respiratory organ (1 mark)
  - (d) Monogastric and Digastric stomach (1 mark)
  - (e) Essential amino acids and non-essential amino acids. (1 mark)
2. Explain the role of five hormones in facilitating reproduction in mammals. (5 marks)
3. Briefly explain the functions of the following cell organelles in the vertebrates cells. (5 marks)
  - (a) Golgi bodies
  - (b) Cell membrane
  - (c) Nucleus

4. Briefly compare mammalian and avian respiration systems. (5 marks)
5. Briefly discuss gaseous exchange in fish. (5 marks)
6. Briefly discuss functions of blood in the vertebrate body. (5 marks)

**SECTION B: ANSWER ONLY TWO QUESTIONS (40 MARKS)**

7. With the aid of a diagram(s) discuss the excretory and osmoregulation functions of the mammalian kidney nephron. (20 marks)
  8. (a) Discuss the key functions of skeleton structure in mammals. (10 marks)  
(b) Explain blood components and their functions. (10 marks)
  9. With relevant examples, compare and contrast the digestive systems of ruminants and non-ruminants. (20 marks)
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