



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**  
**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN FOOD**  
**SECURITY**  
**1<sup>ST</sup> YEAR 2<sup>ND</sup> SEMESTER 2016/2017 ACADEMIC YEAR**  
**REGULAR**

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**COURSE CODE: AFB 3121**

**COURSE TITLE: HUMAN PHYSIOLOGY**

**EXAM VENUE:** **STREAM: (BSc. Food Security)**

**DATE:** **EXAM SESSION:**

**TIME:**

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**Instructions**

- 1. Answer ALL questions in Section A (compulsory) and ANY TWO questions in Section B**
  - 2. Candidates are advised not to write on the question paper**
  - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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## **SECTION A [30 MARKS]**

**Answer ALL questions in this section**

1. Define the following:
  - a) Homeostasis (1 mark)
  - b) Patho-physiology (1 mark)
  - c) Organ (1 mark)
2. Give three main processes of a neuron. (3 marks)
3. State the role of the following in muscle contraction.
  - a) Calcium (1 mark)
  - b) ATP (1 mark)
  - c) Myosin and actin filaments (1 mark)
4. Outline three differences between arteries and veins. (3 marks)
5. Briefly explain gaseous exchange between alveolus and blood capillaries surrounding alveolus. (3 marks)
6. Give any three functions of protein in the body. (3 marks)
7. State three main functions of lymphatic system. (3 marks)
8. Give function of the following enzymes:
  - a) Carboxypeptidase (1 mark)
  - b) Pancreatic amylase (1 mark)
  - c) Pancreatic lipase (1 mark)
9. name three accessory sex glands in humans and explain their functions. (3 marks)
10. The effects of insulin and glucagon in the human body usually oppose one another. Explain this Statement. (3 marks)

## **SECTION B [40 MARKS]**

**Answer ANY TWO questions from this section**

11. Describe functional organization of the human nervous system. (20 marks)
12. Analyze the general functions of blood. (20 marks)
13. Evaluate the following:
  - a) Role of the kidneys in acid-base homeostasis (6 marks)
  - b) Functions of the kidneys and the processes involved in urine formation (14 marks)
14. Analyze the following:
  - a) Functional organization of the human endocrine system (6 marks)
  - b) Functions of the main thyroid hormones (14 marks)